THEORETICAL AND EXPERIMENTAL EVALUATION OF DISSONANCE PROCESSES

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ABSTRACT

An evaluation of Festinger's theory of cognitive dissonance (1957) reveals deficiencies in its basic definitions and the explanatory power of the "consistency-motivational" postulate. A radically different approach to attitude dynamics is proposed which focusses attention on the processes of appraisal and reappraisal, and on the psychological matrix within which these processes operate.

An alternative explanation of dissonance reduction is linked with the postulated operation of processes that both conserve the organization of the psychological matrix and, when transactions with the environment occur, enable a controlled modification of it to occur. The basic explanatory postulate, which is one of the efficient operation of these processes, allows dissonance theory to be extended to pre-decision appraisal and to the prediction of decisions. Experimental evidence supports the derived decision theory.

Three modes of appraisal are postulated, each of which may result in the arousal of dissonance. One mode is considered to be appraisal with respect to the status quo configurations of experiential evaluations and another to be appraisal with respect to the future orientation of current intentions and identifications; dissonances that become aroused in these modes are regarded as emotive. The third mode is regarded as involving the recognition of discrepancies between beliefs or expectations and corresponding actualities, or between the individual's opinions and those advocated

by another; dissonance aroused in this mode is held to be cognitive. A replication of an experiment by Rosenberg and Abelson (1960) provides strong evidence of the interaction between modes of dissonance under the simultaneous operation of the three modes, but only partial support for the "balance" model.

The present formulation integrates and relates features of the "social judgment" (Sherif et al, 1965), the "balance" (Rosenberg and Abelson, 1960) and the "congruity" (Osgood and Tannenbaum, 1955) approaches. New definitions allow quantitative estimates of dissonance to be ascertained.

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Time present and time past
Are both perhaps present in time future,
And time future contained in time past.

T. S. Eliot - Burnt Norton

SECTION I : THEORETICAL EVALUATION

CHAPTER 1 INTRODUCTION

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INTRODUCTION

The study of attitudes is an area of Social Psychology in which activity at the present time is intense, both in terms of empirical research and theory building. McGuire (1966), having reviewed much of the literature on attitudes and opinions formed the impression that the "area of attitude change is currently the most active focus of social psychological research". However, there is little evidence of a concerted attempt to integrate various approaches to attitude change beyond the level of stating a general principle (such as the principle of consistency for the so-called "consistency" theories - see Chapter 2).

This thesis is concerned with evaluating dissonance theory and formulating a theoretical framework sufficiently wide-ranging to incorporate several theories of attitude change and to relate processes of decision-making to the universe of attitudes.

The first section (Chapters 1 to 4) consists of an examination of dissonance theory in which deficiencies are noted in the theory as stated by Festinger (1957) and in later reinterpretations by others (e.g. Brehm and Cohen 1962), and an examination of other approaches to attitude change falling within the confines of dissonance theory.*

* Excepting dissonance theory as applied to the animal laboratory: Lawrence & Festinger (1962)

In the second section (Chapters 5 to 11) a reinterpretation of dissonance processes is propounded. The reinterpretation extends the confines of dissonance theory to include an explanation of decision processes. It also enables an integration to be made of the social judgment approach of examining attitudes (Sherif et al 1965) with dissonance theory. In addition it enables explicit relationships to be determined between dissonance theory and the theories of Osgood and Tannenbaum (1955) and Rosenberg and Abelson (1960).

The third section (Chapters 12 and 13) reports two experiments designed to provide an experimental evaluation of the present reinterpretation of dissonance theory. The first evaluates the explanation of decision processes including post-decision reappraisal. The second evaluates dissonance processes in a replication of an experiment originally designed by Rosenberg and Abelson to test their theory of attitude change. In this latter experiment differential predictions are made for dissonance theory as compared with the 'balance' theory of Rosenberg and Abelson.

THE DEFINITION OF ATTITUDE

Since the theory to be discussed in the body of this thesis features psychological processes in the formation and change of

attitudes, some attention must be given to the concept of attitude. Unfortunately, though the concept is indispensible, its definition is in a thorough state of confusion and has elicited such comments as:

> "The term attitude, if not the concept, has been remarkably durable in the literature of social psychology...Few have loved this orphan child, born in controversy and fostered in hostility, yet fewer have been able to abandon it." (Katz and Stotland, 1959, p.427).
>
> "...the attitude concept has had a thorough examination; it has been defined and redefined, quarrelled over and debated." (Jones and Gerard, 1967, p.162).

McGuire (1966) comments that the dialogue over the definition of attitude has provoked some fine thinking but that when it comes to testing hypotheses, the question of definition is usually circumvented. He also feels that the creative phase of research is so idiosyncratic that each researcher is best left to his own preferred mode of conceptualization.

The definition of attitude is somewhat reminiscent of a stage in the history of certain definitions in the physical sciences. The definition is made in terms of fairly readily observable characteristics. This definition becomes the subject of much debate and confusion, but the term remains indispensible. Then at a later

stage a degree of understanding of underlying processes is achieved, and a more adequate concept is defined. The new concept resolves much of the old debate and clarifies the issues. However, the new concept cannot exist without an adequate understanding of the underlying processes. The new definition goes beyond the readily observable "external" characteristics and depends, instead, on "internal" processes which are not readily observable but which are inferred on the basis of a theory.

Thus a metal was defined in terms of its malleability, its ductility, its conductivity of heat and electricity, its lustre - all these being readily observable characteristics. However, according to such a definition certain elements had a very uneasy role (mercury is a very good conductor of heat and electricity, but is a liquid and is not malleable nor ductile; calcium is very brittle and has no lustre: both are metals) and the definition of a metal was never satisfactory. Instead, the concept of electronegativity has proved much more useful in modern chemistry. Thus, in place of one concept that depended on a definition in terms of relatively external characteristics, another concept is used which depends on an understanding of internal processes. The concept of electronegativity depends on an understanding of atomic structure and of atomic processes. No amount of discussion of the definition of a metal would have produced a definitive concept. Only with an

understanding of the elemental aspects of atoms in terms of nuclei and electrons, and the process of chemical combination could the confusion surrounding the definition of a metal be dispelled.

The concept of attitude appears to be undergoing a similar kind of transition, but without having yet arrived at a new definitive concept. Debate over its definition has been mostly in terms of fairly readily observable "external" characteristics. However, investigations of attitude change based on the theoretical notions of Heider (1946, 1958), Rosenberg and Abelson (1960), Festinger (1957) and others are elucidating some of the underlying psychological processes. This, as McGuire (1966) points out, is being done by circumventing the question of definition, and it seems that it is only a question of time before more adequate concepts become propounded.

The most consistent and, at the same time, the most readily observable characteristic of attitude featuring in the debate over its definition is the characteristic of a <u>predisposition to respond</u>. Thus according to Katz and Stotland (1959) the term attitude was first introduced into the behaviouristic system as a neuromuscular set or predisposition to respond to a certain stimulus or type of stimulus (Allport F.H. 1924). Campbell (1963) in an effort after a definitive concept views the response disposition as being the essential characteristic of an attitude:

"A social attitude is (or is evidenced by) consistency in response to social objects."

"An individual's social attitude is a syndrome of response consistency with regard to social objects." (Campbell 1963, p.96) *

Campbell interprets G. W. Allport's (1935) definition as falling in line with his definition. G. W. Allport's definition is:

"An attitude is a mental and neural state of readiness, organized through experience and exerting a directive or dynamic influence upon the individual's response to all objects and situations to which it is related." (p.810).

And Campbell argues that in the final analysis this refers to consistency or predictability among responses.

However, two other readily observable characteristics are associated with the definition of attitude: they are the cognitive component of an attitude and the feeling or affective component (Krech, Crutchfield and Ballachey, 1962). The cognitive component refers to what the individual believes about the attitude object (observed in what he says about it) and the affective component refers to the emotional tendency with respect to the attitude object (observed in expressions of liking and disliking, emotional

* Originally in Campbell, 1950.

expressions).

Thus:

> "An attitude can be defined as an enduring system of three components centering about a single object: the beliefs about the object - the cognitive component; the affect connected with the object - the feeling component; and the disposition to take action with respect to the object - the action tendency component." (Krech, Crutchfield and Ballachey, 1962, p.146).

In this definition the added cognitive and affective components are in parallel with the predisposition to respond component (action tendency). With Katz and Stotland the predisposition to respond component has an uneasy place. For them the affective component is the central aspect of the attitude since it is the most closely related to the evaluation of the object:

> "An attitude can be defined as an individual's tendency or predisposition to evaluate an object or the symbol of that object in a certain way." (Katz and Stotland 1959, p.428).

In their definition the action tendency does not play a prominent part. A predisposition to evaluate is taken as the central characteristic of attitude. They refer to evaluation as the attribution of qualities which can be placed along a dimension of

desirability-undesirability, and thus always includes cognitive and affective components. The predisposition to respond is included but in a somewhat peripheral way:

> "Attitudes may also include a behavioural component...(which) refers to an action tendency toward the object of the attitude." (p.429)

Osgood et al (1957) identify attitude as one of the dimensions of meaning-in-general characterised by a predisposition to respond, but distinguished from other such states of readiness in that the predisposition is towards an evaluative response. Thus predisposition to respond is combined with predisposition to evaluate at one and the same time according to their analysis.

Jones and Gerard (1967) refer to an attitude as a predisposition to approach (positively value) or to avoid (negatively value) a certain class of objects, and to opinions as the verbal expressions of such underlying dispositions (or concrete expressions of attitudes) (p.432). Here, again, the predisposition to respond (approach or avoid) is combined simultaneously with evaluation (positively or negatively value). The cognitive component is defined as opinion. The affective component is combined with the behavioural component. However, earlier in their book they give an interesting account of attitudes in terms of beliefs and values related by syllogisms. They argue that attitudes derive from the combining of a belief with a value.

They give two examples of syllogisms:

1. All Negroes are lazy. (minor premise)
   Lazy people are bad. (major premise)
   Therefore, all Negroes are bad. (conclusion)
2. Fluoride is a poison. (minor premise)
   Poison is bad. (major premise)
   Therefore, fluoride is bad. (conclusion) (Jones and Gerard 1967, p.159)

In each syllogism, the attitude is the conclusion and the two premises generating it represent the structure of the attitude with the major premise as the value and the minor premise as the belief.

According to Jones and Gerard "a belief expresses the relations between two cognitive categories when neither defines another" (p.158). It concerns associated characteristics of the object as contrasted with defining characteristics. Their definition of value is wide-ranging:

> "Any singular state or object for which the individual strives, or approaches, extols, embraces, voluntarily consumes, incurs expense to acquire, is a positive value. Anything that the individual avoids, escapes from, deplores, rejects, or attacks is a negative value." (p.158)

Thus, value is associated with action tendency and verbal evaluation

according to Jones and Gerard, hence also would be attitude by way of the syllogistic relation.

This is not intended to be an exhaustive survey of the definition of attitude, but simply an indication of the debate over the concept. The definitions are in terms of fairly readily observable characteristics such as expressions of beliefs, of emotional and evaluative tendencies, and of behavioural dispositions. And, as with the early definitions of a metal, there is little agreement over which are the definitive characteristics. For Campbell (1963) the definitive characteristic is the behavioural disposition; for Katz and Stotland (1959) it appears to be the evaluative disposition.

These may be combined as in Osgood et al (1957) and in Jones and Gerard (1967). Krech, Crutchfield and Ballachey (1962) refer to cognitive, affective, and behavioural components as though they are in parallel (with each goes the other two), whereas for Jones and Gerard (also for Fishbein, 1965)* attitude is derived from a specific combining of belief (cognitive component) and value (affective component). Further complicating the issue with respect to the cognitive component is Jones and Gerard's reference to opinions as the verbal and concrete expressions of attitudes (a cognitive aspect presumably different from the cognitive component of belief).

Further discussion of the concept of attitude is unlikely to produce any greater clarification until some of the psychological

* Fishbein 1965: attitudes are regarded as evaluative summaries of an individual's belief about an object; each belief expresses the relation between the object and an associated characteristic which is positively or negatively valued.

processes (the "internal" processes) associated with attitudes are better understood, though a critical examination is made later (see Chapter 4) of Campbell's (1963) attempt to define attitudes in terms of a behavioural response disposition. It is, therefore, appropriate to turn to certain theoretical approaches which have generated experimental work for elucidation of some of the psychological processes involved in attitude change.

The theoretical approach which has given rise to the greatest amount of experimental work and theoretical comment in recent years is that of Festinger's theory of cognitive dissonance (1957)*. What follows is a brief exposition of the theory and a description of some typical experiments carried out to test hypotheses derived from the theory. The theoretical evaluation of dissonance theory is deferred until Chapters 2 and 3, when certain other theoretical approaches will also be examined.

STATEMENT OF FESTINGER'S THEORY OF COGNITIVE DISSONANCE

Festinger's theory of cognitive dissonance (1957) is a theory which has special relevance to attitude change arising as a consequence of engaging in certain actions, for example, actions which might compromise the individual's values, decisions which involve relinquishing desired characteristics in favour of certain others, commitments to certain undertakings, behaviour which might lead to

* e.g. McGuire (1966): "Over the past three years dissonance theory continues to generate more research and more hostility than any other one approach."

certain undesired consequences, and so on.

The basic premise of the theory is that the individual strives toward consistency within himself. By contrast, Festinger points out, when inconsistencies are found to exist they capture our interest primarily because they stand out against a background of consistency. In cases where individuals are not successful in explaining away or rationalising inconsistencies to themselves they experience "psychological discomfort". Rather than use the word 'inconsistency' with its logical connotations, Festinger replaces it with the term dissonance, and likewise 'consistency' with consonance.

The basic hypotheses of Festinger's theory are:

1)"The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce the dissonance and achieve consonance".

2) "When dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance." (p.3)

According to Festinger dissonance is the existence of non-fitting relations among cognitions. By cognition he means any knowledge, opinion, or belief about the environment, about oneself, or about one's behaviour. Dissonance is held to be a motivating factor in its own right.

"Cognitive dissonance can be seen as an antecedent condition which leads to activity oriented toward dissonance reduction just as hunger leads to activity oriented toward hunger reduction." (p.3)

Definition of dissonance*:

"Let us consider two elements which exist in a person's cognition and which are relevant to one another. The definition of dissonance will disregard the existence of all the other cognitive elements that are relevant to either or both of the two under consideration and simply deal with these two alone. These two elements are in a dissonant relation if, considering these two alone, the obverse of one element would follow from the other. To state it a bit more formally, x and y are dissonant if not-x follows from y." (p.13).

Definition of consonance:

"If, considering a pair of elements, either one does follow from the other, then the relation between them is consonant." (p.15).

Definition of irrelevance:

"If neither the existing element nor its obverse follows from the other element of the pair, then the relation between them is irrelevant." (p.15).

* The definition of dissonance is critically examined in Chapter 3.

Magnitude of dissonance:

"If two elements are dissonant with one another, the magnitude of the dissonance will be a function of the importance of the elements." (p.16).

When more than two elements exist:

"Let us consider now the total context of dissonances and consonances in relation to one particular element. Assuming momentarily, for the sake of definition, that all elements relevant to the one in question are equally important, the total amount of dissonance between this element and the remainder of the person's cognition will depend on the proportion of relevant elements that are dissonant with the one in question." (p.17).

It is instructive before analysing the theory further to examine the experiments that represent the main body of work on dissonance. The next section will be devoted to reviewing and commenting on some of these experiments.

DISSONANCE THEORY EXPERIMENTS

Most of the experiments attempt to trace the effects of dissonance reduction consequent upon the experimental induction of dissonance in subjects. Many of them attempt to manipulate the magnitude of dissonance experienced by subjects so that dissonance reduction effects may be related to antecedent degrees of magnitude of dissonance. It is emphasised that a very large number of experiments have been reported on dissonance theory. Many of them have been collected together and published in book form (Festinger 1957, 1964; Brehm and Cohen 1962), several have been examined in a highly critical fashion by Chapanis and Chapanis (1964), and a considerable selection are reviewed in a standard textbook in social psychology (Jones and Gerard, 1967). A large number of experiments on dissonance theory continue to be published in journals. In view of the availability of reviews of the experimental work and the aim of the thesis to examine the theoretical basis of dissonance theory, no attempt will be made here at an extensive review. The theoretical structure of the theory has not changed since its inception in 1957, except for matters of emphasis which are examined in the theoretical evaluation to follow. Thus the experiments briefly described below are included to provide a sample indicating typical manipulations used to test dissonance theory.

Insufficient justification and forced compliance type of experiment.

Brehm and Cohen (1962) view forced compliance as one kind of choice situation; they regard the "forced-compliance" experiments as involving a choice between engaging in a discrepant act or not engaging in it. Since, in order to persuade the subject to engage in a discrepant act requires some kind of inducement, the experiments involve a manipulation of the justification for that act. When the justification is minimal ("insufficient") dissonance should be greatest. When justification is sufficient little or no dissonance should be experienced. Thus the experimental paradigm is to manipulate degrees of justification (monetary reward is frequently used) and obtain evidence of dissonance reduction in measures of evaluation of the task for which the discrepant act is engaged in. According to the theory the more the dissonance experienced the more favourably should the task be evaluated following on dissonance reduction.

Festinger and Carlsmith (1959)

Subjects were induced to perform a monotonous, boring task and were subsequently asked to lie to the "next subject" (an accomplice of the experimenter) by telling him how enjoyable and interesting the task had been. The experimental manipulation consisted of offering 20 dollars in one condition (high justification for the discrepant act of lying, hence low

dissonance) and one dollar in the other condition (low justification, hence high dissonance). A control condition was also run in which subjects merely performed the task and did not make a discrepant statement. The dependent variable was the subsequent evaluation of the task. The prediction was that the high dissonance group would evaluate the task more favourably than the low dissonance group. The prediction was confirmed. Thus the subjects with less justification for lying may be viewed, on average, as increasing the justification by evaluating the task more favourably (i.e. reducing dissonance).

Comment

It should be noted that no measure is obtained of the evaluation of the discrepant act itself. According to the rationale behind the experiment, dissonance could just as well be reduced by changes in evaluation of the discrepant act of lying, with the high dissonance subjects evaluating it more as a "white lie" (in order to help the experimenter out, etc.) than the low dissonance subjects. Since the actual prediction tested was confirmed it may be that both modes of dissonance reduction were operating. However, it would be interesting to know whether dissonance is reduced by way of a re-evaluation of the act of lying in the context of the experimental situation, and which mode of dissonance reduction might be the strongest. The question arises since there are, in fact, two ways of considering discrepancy

in the experiment: the one that the experimenters considered - the discrepancy between what the subjects said about the task and what they felt about it, and the other one - the discrepancy of engaging in lying. Thus, theoretically it should be quite possible to hold the belief that the task was indeed very boring, whilst justifying the discrepant act by considering it a "white lie". The results of the experiment are given in terms of mean ratings so it is not known what proportion of the high dissonance subjects considered the task as boring as the controls.

Cohen (in Brehm and Cohen 1962)

Subjects (students) were induced to write essays opposing their views on the intervention of local town police on the university campus during a student riot. Four incentive levels were used and a control condition was run in which subjects wrote no essay and received no incentive. The subjects receiving the incentive wrote essays "in favour of the actions of the New Haven police". After the essays were written, attitudes to the police were obtained with regard to how justified the police actions in the riot were. The less the incentive the greater the dissonance, hence, the more positive is the evaluation towards the police expected to be as a result of dissonance reduction. The results confirmed the prediction:

Incentive	Mean attitude toward police actions
Control	2.70
10.00 dollars	2.32
5.00 "	3.08
1.00 "	3.47
0.50 "	4.54

(Possible range of values 1.00 to 7.00; the higher the mean, the more positive the attitude.)

Comment

Again no measure was obtained evaluating the act of engaging in the discrepant behaviour. It may be that, as well as evaluating the police actions more favourably, the high dissonance subjects may also have evaluated more favourably the task of writing "essays favoring one side" being "one of the best ways to get relevant arguments on both sides of an issue" as stated by the experimenter.

Further experiments show that it is the decision to comply with engaging in discrepant behaviour for an insufficient reward that produces dissonance, rather than receiving an insufficient reward after a commitment to comply. This issue was elucidated after Rosenberg (1965) argued that the typical subject was probably concerned with the experimenter's evaluation of him and that this "evaluation apprehension" would induce resistance in the subject to a change in opinion because otherwise he might appear to be open to bribes. This explanation, Rosenberg argued, could account for

the outcomes of the Festinger and Carlsmith, and the Cohen type of experiment. Rosenberg performed an experiment which was similar to Cohen's (using a different but involving issue) except that the experimental manipulations of incentive and the dependent measures of opinion were made in different contexts, so that the one should appear to the subjects as having no relation to the other. Rosenberg's results contradicted the previous findings, instead showing more opinion change with increasing monetary reward. However, Jones and Gerard (1967) point out that Cohen offered money to the subject before he committed himself to writing an essay, whereas in Rosenberg's experiment the subject essentially committed himself before learning how much money was involved. To test the issue the following experiments were performed.

Jones and Cooper (in Jones and Gerard 1967)

Subjects (students) were asked to write an essay in favour of a ban on disloyal speakers at the university, a position opposed to their own opinions. They were paid $0.50 or $2.50 for writing the essay. A second manipulation entailed the moment at which they were informed how much money they would receive for the task. Either they knew the amount of money involved and then decided to write the essay, or they were told to write the essay and informed of the amount of money just as they were about to begin. Thus, the first manipulation concerned the incentive and the second concerned

"free decision" contrasted with "prior commitment". The predictions were that in the "free decision" condition dissonance reduction effects would be obtained, whereas in the "prior commitment" condition contrasting reinforcement effects (as with Rosenberg) would be obtained. The predictions were borne out.

Results

	Mean attitude toward speaker ban	
Incentive	Prior commitment	Free decision
Control	1.60	
2.50 dollars	2.34	1.64
0.50 "	1.66	2.96

(The higher the value for mean attitude, the closer the attitude to the position advocated in the essay.)

Comment

The experiment illustrates the importance of the difference between the pre-choice and the post-choice situations. The less the justification for the choice the greater the change in opinion following on dissonance reduction. It is interesting to note that the prior commitment situation could also fit the dissonance framework. Having committed oneself to writing the essay, the subsequent offer of $2.50 may seem a large enough sum of money to require justification for receiving it (i.e. $2.50 may appear discrepant with not making a convincing job of the essay). This justification could conceivably be in terms of adducing better arguments in favour of the ban and convincing

oneself that it was worth doing this by conceding a case for the ban on disloyal speakers.

The findings of the Jones and Cooper experiment are confirmed by another experiment in which an attempt was made to replicate the conditions of Rosenberg's experiment as nearly as possible, except that a further manipulation was introduced. This manipulation concerned the question of choice - one set of conditions followed Rosenberg's procedure, the other emphasised that the subject should not feel obliged to participate in the other study (the unrelated context that Rosenberg introduced for obtaining the measure of opinion) but feel free to decide. The results for the first set of conditions replicated Rosenberg's findings, whereas the results of the second set showed the dissonance effect (Linder and Cooper in Jones and Gerard, 1967).

Choice between several alternatives or the free choice type of experiment.

"Free choice" situations are viewed by Brehm and Cohen (1962) as generally involving a choice between attractive alternatives for which little or no external pressure is required. Dissonance in these experiments depends on the attractive aspects of the alternatives relinquished and on any unattractive aspects of the chosen alternative. Brehm and Cohen view alternatives as positive or negative:

"With any alternative viewed as having both positive and negative attributes, a positive

alternative is one in which the positive attributes outweigh the negative, and a negative alternative is one in which the negative attributes outweigh the positive..." (Brehm and Cohen, 1962, pp. 22-23)

They also give a fairly explicit statement of the magnitude of dissonance following a choice:

> In regard to the chosen alternative, dissonance is a direct function of the number and/or importance of negative attributes and an inverse function of the number and/or importance of positive attributes. In regard to the rejected alternative(s), dissonance is a direct function of the number and/or importance of positive attributes and an inverse function of the number and/or importance of the negative attributes. In addition, dissonance is a direct function of the general importance of the choice alternatives." (p.23)

Brehm (1956)

Subjects were asked to evaluate eight different consumer articles, then to choose between a specified pair of them, and then to evaluate all of them again. One of the articles in the specified

pair was always a very attractive one for the subjects, whilst the other was made to vary in attractiveness from nearly the same as to much less than the first one. Since positive attributes will be associated with the more attractive articles and negative attributes with the less attractive articles, and since the attractiveness of the one article offered was kept high, dissonance will be a direct function of the attractiveness of the rejected alternative. Thus it was expected that the highly attractive rejected alternative would create more post-choice dissonance than the less attractive rejected one. Dissonance could be decreased in two ways, by increasing the desirability of the chosen alternative, and by decreasing the desirability of the rejected one. The predictions were confirmed.

Brehm and Cohen (1959)

School children were asked to evaluate 16 toys both before and after having chosen one of a specified pair. Some children were given a choice between qualitatively similar toys (e.g. between metal crafts sets, or between two table games) and others were given a choice between qualitatively different toys (e.g. between swimming fins and a ship model). Since it may be assumed that in the qualitatively similar toys there will be an overlap in attributes, the number of attributes that can be dissonant in a choice between them is likely to be less than for a choice between qualitatively different toys with fewer attributes in common. Therefore a choice between similar alternatives should produce less dissonance

than a choice between dissimilar alternatives. Thus, as well as enhancement of the chosen alternative and devaluation of the rejected one, it was predicted that the effect would be greater for the choice between the dissimilar alternatives compared with that between the similar ones. The predictions were confirmed.

Comment

These experiments are typical of the "free choice" experiments in that the only measures obtained are of the relative attractiveness of the alternatives in question. Dissonant and consonant elements are not delineated and dissonance is not considered in terms of these elements. Thus the measures of attractiveness are global indications of such factors as the ratio of dissonant to consonant elements in relation to each alternative. The hypotheses tested in these experiments are derived from elemental considerations, but the behaviour of these elements is not ascertained.

Jecker (in Festinger 1964)

Festinger contrasts dissonance theory with conflict theory. According to Festinger, if one must choose between two almost equally desirable alternatives, dissonance reduction operates post-choice and leads to a re-evaluation of the alternatives. Conflict theory would hold that conflict resolution results in re-evaluation of the alternatives prior the choice, so that the choice itself becomes clearer. Thus given a situation of high conflict when two

attractive alternatives are mutually exclusive and the subjects are virtually certain of getting only one of them, a prediction based on conflict resolution would be that a systematic re-evaluation of the alternatives occurs, irrespective of whether the subjects actually receive one or both alternatives. Dissonance theory would predict, on the other hand, that systematic re-evaluation would occur only if the one alternative were actually received (that is, after a conclusive choice).

The subjects were schoolgirls. They were asked to evaluate 15 gramophone records, then randomly assigned to a "high-conflict" condition in which subjects were told that one out of every twenty girls would be given two records, or to a "low-conflict" condition in which subjects were informed that 19 out of every 20 girls would be given two records. Thus, girls in the "high-conflict" condition were virtually certain of getting only one record, whereas girls in the "low-conflict" condition were virtually certain of getting two records. The girls were then shown two records and asked to indicate which of the two she would want in case she were to receive only one of them. The two records were ones the subject had rated on adjacent points in the moderate portion of the evaluation scale. After she had made her decision, the girl drew a slip of paper from a box to find out whether she would get only the record she chose or both of them. The subjects were randomly assigned to a "no-dissonance" condition in which they received both records or to a

"dissonance" condition in which they received only the chosen record. Finally each subject evaluated the 15 records again. The prediction on the basis of dissonance theory is that there will be systematic re-evaluation of two choice alternatives in question in the "dissonance" condition but not in the "no-dissonance" condition. The prediction on the basis of conflict resolution theory is that there will be greater systematic re-evaluation in the "high-conflict" condition compared with the "low-conflict" condition. The results confirm the dissonance prediction.

Results

Mean change in relative attractiveness of the chosen alternative (increase for the chosen plus decrease for the rejected alternative)

	High conflict	Low conflict
Dissonance	1.0	0.6
No dissonance	0.2	0.3

(from Jecker in Festinger, 1964)

There is some suggestion that if the decision is preceded by high conflict, dissonance reduction after the decision may be more effective than if the decision is preceded by low conflict. The difference does not, however, reach significance.

Festinger and Walster (in Festinger 1964)

The hypotheses tested in this experiment do not stem from the theoretical statement of dissonance theory but rather from suggestive empirical findings, that the more the existing

information is considered before a decision, the more rapidly and effectively does post-choice dissonance reduction proceed after the decision (Festinger 1964). It is held that if the various aspects of the alternatives are not well thought out before the decision, then the process of their examination must take place after the decision, in order to facilitate dissonance reduction. Hence, Festinger proposes that:

> "As soon as the decision is made, all the negative aspects of the chosen alternative and all the positive aspects of the rejected alternatives become salient for the person."
> (Festinger 1964, p.98)

Such a salience of dissonance may be experienced as regret and lead to an inclination to reverse the decision. The Festinger and Walster experiment was designed to test for such post-decision regret and decision reversal.*

Female students were asked to evaluate 12 photographs of different hair styles according to how they would feel about having the hair styles themselves. On the basis of the initial evaluations, the experimenter selected two styles found attractive by the subject. The subjects were then divided between two conditions. In the first, the "no-prior-decision" condition, the subject was asked to

* The process of decision reversal receives further attention in Chapter 8.

rank the 12 hair styles she had previously rated, then offered a free hair styling from the two selected by the experimenter. The subject then made her choice.

In the second, the "prior-decision" condition, the subject was informed of the free offer and the two hair styles from which she was to choose before she was asked to rank the 12 styles. Although she was informed of the offer and the two hair styles in question, she did not make her choice until after the ranking (thus corresponding to the procedure in the "no-prior-decision" condition in this respect).

Thus, in the prior-decision condition the rank order of the two hair styles was an expression of choice by the subject, whereas in the no-prior-decision condition the subject did not know she was going to be asked to choose a style.

After the subject had made her choice, she was again asked to evaluate the 12 styles.

The prediction was that there would be a high incidence of decision reversal for subjects in the prior-decision condition, since at the time they are asked to state their choice they should be experiencing salience of post-decision dissonance due to the expression, in essence, of their decision in the ranking. A decision reversal was defined as an instance in which the subject chose the hair style she had initially rated as less attractive.

The prediction was confirmed. 62% of the subjects in the prior-decision condition showed decision reversal, compared with 28% in the no-prior-decision condition.

The 28% "decision reversals" in the no-prior-decision condition was regarded as being due to unreliability of the initial evaluation. This conclusion was based on an examination of changes between the initial and final evaluations of the hair styles not included in the choice. The incidence of decision reversal in the prior-decision condition was significantly greater than this unreliability.

Communication discrepancy and attitude change

According to Brehm and Cohen (1962), provided that a person is committed to listening to a communication, he will experience greater dissonance the greater the discrepancy between his own opinion and that advocated. With greater dissonance it follows that greater dissonance reduction is expected. One way of reducing dissonance is by way of attitude change and, if this is the only way, attitude change should increase in magnitude with increasing communication discrepancy. However, another way of reducing dissonance would be by decreasing the commitment to the discrepant point of view by disparaging the communicator. This would be possible to a greater extent with a communicator regarded as not very credible, than with one regarded as highly credible.

Aronson, Turner and Carlsmith (1963)

Subjects, who were college girls, were exposed to a communication which was identical, for all groups, except for a manipulation in the credibility of the communicator and a manipulation in the discrepancy between the advocated opinion and that of the subjects. The subjects ranked nine stanzas from obscure modern poems according to their "use of form to express meaning". The manipulation of discrepancy was achieved by having each girl read an essay on the "Use of Alliteration in Modern Poetry" in which the stanza she ranked eighth was used as an example and an opinion on that stanza given which was slightly, moderately, or extremely discrepant from her own opinion according to the condition to which she was assigned. The manipulation of credibility was obtained by attributing the essay either to T. S. Eliot (a highly credible source), for one half of the subjects in each discrepancy condition, or to a student of English (a mildly credible source) for the other half. The results show that, by and large, for the highly credible source, attitude change increased with increasing discrepancy, and for the mildly credible source attitude change, after increasing up to a certain degree of discrepancy, decreased with increasing discrepancy. Actually, for the "highly-credible" condition the relationship was also curvilinear with increased change with discrepancy up to a certain point, then a tailing off.*

* The issue of communication discrepancy and attitude change is at

(contd.)

Relationship of the experiments to the theory

The theory is expressed in terms of consonant and dissonant elements, and the predictions of dissonance reduction are related to the magnitude of antecedent dissonance dependent on these consonant and dissonant elements. Yet, in the "insufficient justification" experiments, the delineation of consonant and dissonant elements is not explicitly derived from the theoretical statement of the theory, but is inferred on the basis of the intuitive judgment of the experimenter. In the "free choice" experiments consonant and dissonant elements are not delineated at all; instead, predictions are made about the global attractiveness of the alternatives based on theoretical assumptions of the distribution of dissonant and consonant elements between the alternatives in question. Though these assumptions receive support in the experimental findings, it should be noted that no evidence is obtained with respect to the distribution of the elements or with respect to the behaviour of these elements. In no case in any of the experiments is an estimate or a measure of the magnitue of antecedent dissonance derived nor of the magnitude of dissonance after dissonance reduction, so that in no case is it possible to estimate the degree of change in dissonance as a consequence of dissonance reduction.

* the focus of a controversy between the dissonance formulation and the social judgment formulation (Sherif et al. 1965). This controversy is taken up in a later section (see Chapter 9).

Certain problems arise from the absence of a procedure for delineating dissonant and consonant elements from the theoretical statement of the theory. One concerns the question of what is to be considered consonant or dissonant with respect to what, another related to the first concerns the implicit shared culture of the experimenter and his subjects. Thus, in the first "insufficient justification" experiment described, what is to be considered as consonant or dissonant with respect to what? Is the monetary reward to be considered as consonant with respect to engaging in a boring task, or consonant with respect to telling a lie, or dissonant with respect to an ethical standard of not accepting bribes? Is the act of expressing a contrary opinion consonant or dissonant with respect to the perceived worthwhile nature of the "scientific" experiment? Is the boring task to be considered as consonant with respect to the boring nature of psychological experiments or dissonant with respect to saying that it was enjoyable and interesting? On the basis of intuition, the experimenter considered just two elements to be relevant: they were that the contrary opinion expressed was dissonant with respect to the nature of the task and that the monetary reward was consonant with respect to the expression of the contrary opinion. The monetary reward (the consonant element) was experimentally manipulated and the relative shifts in evaluation of the task (dissonant with respect to the contrary opinion expressed) were

observed. That such shifts were observed as predicted indicates that the experimenter's intuition was probably correct in so far that the elements considered were relevant ones; however, it leaves as an open question what other of the elements may also have been relevant and what their role may have been in dissonance reduction. Clearly with such a state of affairs, room for considerable ambiguity of interpretation of the results must exist, especially since the experimenter's intuition is based onhaving a shared cultural background with his subjects. If the experimenter were unable to make certain assumptions with respect to the values that his subjects held, he would be unable to delineate which would be consonant and which would be dissonant elements for his subjects. What for one subject would be consonant might for another be dissonant. The experimenter uses no procedure for obtaining the subject's evaluation of the elements of the situation, or for determining which of these are dissonant or which are consonant. This being so, the judgment is based on intuition and invariably restricted to considering just two elements, even though the theoretical statement of the magnitude of dissonance is in terms of proportions of dissonant to consonant elements.

This problem of delineation of consonant and dissonant elements will be seen, in Chapter 3, to stem directly from deficiencies in

the fundamental definitions of dissonance. The inadequate nature of the definitions is largely responsible for the uneasy status of dissonance theory, which is to be evaluated in the course of the following two chapters.

SUMMARY

The unsatisfactory state of the definition of attitude has been noted and put down to a lack of sufficient understanding of "internal" psychological processes. One influential approach to examining some of the psychological processes involved, Festinger's theory of cognitive dissonance, is presented. A sample of typical experiments supporting the theory is given, together with comments on the relationship between the theoretical statements and experimental practice. A major deficiency of this relationship is noted in the lack of any procedure for delineating consonant and dissonant elements by way of the theoretical statements with regard to these elements.

SECTION I : THEORETICAL EVALUATION

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CRITIQUE OF FESTINGER'S STATEMENT

The theoretical statement of Festinger's theory has been given in Chapter 1 and some typical experiments testing the theory described. In this chapter and the next, the theoretical issues in dissonance theory will be examined. First is given a statement of broad criticisms of the theory as it stands at present. These are substantiated in greater detail in the remainder of the chapter and in Chapter 3.

Festinger's theory is a general theory, which has wide applicability but is somewhat vague in its fundamental definitions (e.g. dissonant and consonant elements), without a direct or derived measure of dissonance, hence in dissonance experiments it is generally difficult to ascertain precisely the role of dissonance in changes in relevant variables, especially since the subjective appraisal of the experimental situation is not usually obtained. In common with some other attitude change theories, it is based on a notion of consistency which is not logical consistency and which does not itself receive a psychological explanation. The theory postulates that dissonance is a drive without explaining why it should have drive properties: the assumption behind the drive postulate appears to be that of homeostasis. Although considered often in relation to decisions or commitment, the theory attempts no explanation of the decision process, instead it emphasises that dissonance results only after

a decision or commitment, and that it is in the post-decision or commitment situation that dissonance reduction operates. Although seemingly able to consider many component (cognitive) elements of a situation there is no theoretical or practical way of taking many components into consideration, with the result that many experiments in dissonance reduction are confined to the two element situation.

Festinger (1957) puts forward the notion of consistency as an explanatory principle:

> "It has frequently been implied...that the individual strives toward consistency within himself." (p.1)

though he points out that there are exceptions:

> "A person may think Negroes are just as good as whites, but would not want any living in his neighbourhood; or someone may think that little children should be quiet and unobtrusive and yet be quite proud when his child aggressively captures the attention of his adult guests." (p.1)

Festinger explains away these exceptions by implying that they are not really exceptions, because the individual has been more or less successful in rationalising them so that they do not appear as inconsistencies to him:

"Granting that consistency is the usual thing, perhaps overwhelmingly so, what about these exceptions which come to mind so readily? Only rarely, if ever, are they accepted psychologically as inconsistencies by the person involved. Usually more or less successful attempts are made to rationalise them."

But Festinger also states that people are not always successful in explaining away or rationalising inconsistencies, and that under such circumstances there is psychological discomfort which Festinger defines as dissonance:

"For one reason or another, attempts to achieve consistencymay fail. The inconsistency then simply continues to exist. Under such circumstances - that is, in the presence of an inconsistency - there is psychological discomfort." (p.2)

Then Festinger states that dissonance motivates the individual to achieve consonance:

"The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce dissonance and achieve consonance." (p.3)

And when the experimental evidence is examined, this process is almost exactly equivalent to the process of rationalisation (i.e. justifying a commitment by viewing it in better light; making out that a chosen alternative is better than previously considered and that a rejected one is worse, etc.)!

Thus, what Festinger has done is equivalent to using the process of rationalisation to explain why certain inconsistencies which exist in an individual do not appear as inconsistencies to the individual; then saying that when rationalisation fails, the process of rationalisation begins to operate! How the process operates is not explained, beyond saying that the state of psychological discomfort is motivating, which is saying no more than is said for the process of rationalisation.

It is also true for psychoanalytic theory that the less the original justification for some unfortunate action, the more the need to rationalise some posterior justification. The greater the original justification for such an action, the less the posterior justification. Thus a welfare officer would have no qualms about removing a near-starving child into care if the child had been neglected by a destitute mother who did not care for it (sufficient justification). But the same welfare officer, faced with a destitute but loving mother and deciding to take her near-starving

child into care (less sufficient justification), would probably rationalise the situation by perhaps feeling that the child's welfare was that much more important in the second case compared with the first ('to give it every chance in the world which the mother could not provide', compared with 'removing it from neglect as a duty').

Thus the process of dissonance reduction can be seen to be equivalent to the process of rationalisation in its conclusions. But Festinger's great achievement lies in the terminology he provides which makes explicit what is implied in the process of rationalisation. The provision of the term dissonance names the state of affairs giving rise to the process of rationalisation. Having established a concept of dissonance, it is then possible to examine magnitudes of dissonance. There is no similar concept in relation to traditional views of the process of rationalisation, hence the difficulty conceptualising magnitude with the traditional approach. But it is the detailed examination of the variation in the magnitude of dissonance according to the strength and number of dissonant and consonant elements, that enabled the various insights of dissonance theory. Once the magnitude of dissonance could be examined and manipulated, then so could the degree or extent of rationalisation (dissonance reduction) also be examined and related to the magnitude of the antecedent dissonance. The evidence on this is compelling in

favour of dissonance conclusions (many experiments conveniently summarised in Festinger 1957, Brehm and Cohen 1962, Festinger 1964), though not yet convincing.

However, as well as the insights provided by the dissonance formulation, it appears also to have generated considerable confusion. The confusion is as fundamental as the confusion of the first three pages of the original statement of the central part of the theory - that dissonance reduction (essentially a process of rationalisation) occurs when rationalisation fails. Added to this there is no explanation why "dissonance", that is, the existence of non-fitting relations among cognitions, is a motivating factor in its own right." (Festinger 1957, p.3)

The next section considers the widespread use of consistency as a motivating principle, then follows a discussion on the nature of dissonance. In the next chapter, the conditions under which dissonance arousal is held to occur are discussed, after which the principle of consistency is again examined, but this time from the standpoint of its limitations as a unitary explanatory principle, and its limitations with respect to ego-involvement by an individual in a point of view together with a communication discrepant with that point of view. Then follows an examination of Festinger's fundamental definition of dissonance, from which it will be seen that no practical use can be made of the definition

itself, and, hence, why the delineation of consonant and dissonant elements in dissonance experiments can be based only upon the experimenter's intuition.

THE ISSUE OF CONSISTENCY AND MOTIVATION

Moscovici in 1963 stated:

> "In this reviewer's opinion, Festinger has... defined a process and hinted at some consequences; the conceptual formulation of the process is only in its initial stage...As yet, no one can state with accuracy under what conditions dissonance occurs, nor predict the exact consequences that will follow."

Moscovici also questions the status of the theory:

> "Is Festinger's theory supposed to be a general psychological theory which stresses the essential part played by the dissonance process, or is it merely a theory of <u>this</u> process, to be considered among others? A restatement of the whole question is needed. Why dissonance should be reduced would especially have to be explained. This is not to say that the need for reduction cannot be seen, but it does not seem to be either imperative or universal. One also wonders how, once consistency and balance have been achieved,

the individual and the group change and develop psychologically."

The most common kind of explanation for dissonance reduction tends to be a notion of consistency in conjunction with homeostasis:

"Most of these theoretical approaches to attitude change (Festinger, Heider, Newcomb, Osgood and Tannenbaum, McGuire, Rosenberg)...have at least one main characteristic in common. They involve a kind of balance-of-forces approach in which the overloading of one type of factor gives rise to changes designed to restore balance. In short, all employ homeostasis in some form or other." (Maccoby and Maccoby, 1961)

Cofer and Appley similarly remark:

"It is obvious that the resolution of dissonance reduces tension or, put another way, restores equilibrium or balance, a homeostatic-like conception." (1964, p.790)

They also note that there seem to be parallels in dissonance formulations to other theories which emphasise discrepancy, self consistency and homeostasis.

A. R. Cohen (1964), Roger Brown (1965) and several others emphasise "this conception of a psychological equilibrium of consistency" (Brown) common to the 'congruity' (Osgood and

Tannenbaum), 'balance' (Rosenberg and Abelson), and 'dissonance' (Festinger) models of attitude change.

Heider (1946, 1958) is generally regarded as the major influence in the various 'balance' models concerning attitude change. Heider is concerned with how one person 'p' feels about another 'o', and how the liking or disliking of 'o' is influenced by things or other people to which 'o' is related in some way. According to Heider a 'balanced state' exists when person 'p' likes person 'o' and some object 'x' if 'x' is related to, or liked by 'o', but not if object 'x' is disliked by 'o'. Another example of a balanced state would be: 'p' dislikes 'o', 'o' likes or is related to 'x', and 'p' dislikes 'x'. Heider postulates that when a state of imbalance exists, the individual suffers feelings of strain resulting in tendencies to change perceived relationships and sentiments of liking and disliking in such a way as to achieve balance.

Cartwright and Harary (1956), and Harary (1959) elaborate Heider's approach in terms of the mathematical theory of linear graphs. They take into account more than three elements and also consider the direction of the relationship between the elements, that is, they distinguish such instances as "A likes B" from "B likes A", as opposed to saying that a positive relationship ("likes") exists between two persons. According to Cartwright and Harary, no cognitive structure can be balanced unless symmetry

exists between the two directions. Cartwright and Harary also differentiate between degrees of balance in a cognitive structure. Apart from these elaborations, their approach is essentially the same as Heider's.

Another version of balance theory exists in Newcomb's formulation (1953) which postulates "strains toward preferred states of symmetry" in relation to interpersonal communication. His basic postulate is: "The stronger the forces toward A's co-orientation in respect to B and X, (a) the greater A's strain toward symmetry with B in respect to X; and (b) the greater the likelihood of increased symmetry as a consequence of one or more communicative acts." (Where one person 'A' transmits information to another person 'B' about something 'X').

A further variation of the Heider model is that of Abelson and Rosenberg (1958) or Rosenberg and Abelson (1960). In this 'balance' model, elements of the cognitive structure can be represented as positively or negatively evaluated as well as the relationships between the elements. A "balanced band" is one in which the relationship between two "signed concepts" is consistent with their signs. A balanced band is one in which either:

"1. two concepts of identical sign are
believed to be positively related (+p+ or -p-)

or

2. two concepts of opposite sign are believed to be negatively related (+n-)."

An unbalanced band, on the other hand, is one in which the relationship is inconsistent with the signs of the concepts; it is one in which either:

"1. two concepts of identical sign are believed to be negatively related (+n+ or -n-)

or

2. two concepts of opposite sign are believed to be positively related (+p-)."

(Rosenberg and Abelson 1960, pp,119-120)

They postulate that a cognitive band will be stable if balanced, and unstable if unbalanced, whereupon it is likely to undergo change towards balance. Their matrix formulation (Abelson and Rosenberg 1958) is concerned with balanced and unbalanced attitudinal-cognitive structures rather than single bands. From a concept of "structure matrix" they determine an index of degree of imbalance in a complex structure. Further, by making a crude assumption that all changes in cognitive structure are equally "effortful", they attempt to identify the "least effortful path toward total balance" (cf. Harary 1959). As a consequence of a cognitive inconsistency an individual may do three things:

"1. Change one or more of the signs (in a single band the affect signs of either of the two

concepts or the sign of the relation between them).

2. Redefine or "differentiate" one or more of the concepts.

3. Stop thinking".

(Rosenberg and Abelson 1960, p.121)*

A somewhat different approach that makes use of the principle of consistency is Osgood and Tannenbaum's principle of congruity (1955). The principle of congruity is postulated to hold when a source of communication makes an evaluative assertion about some object or issue. The principle is used to derive a prediction of possible changes in the receiver's evaluation of both the source of the assertion and the object of the assertion. "Assertion" is fairly widely interpreted and may include actions as well as communications as such. Assertions can be associative or dissociative; an associative assertion expresses a positive relation between source and object, a dissociative assertion expresses a negative relation; degrees of intensity of relationship cannot, however, be incorporated in the congruity model. The principle of congruity does, nevertheless, incorporate degrees of evaluation. It asserts that (Osgood et al. 1957):

* The 'balance' model of Rosenberg and Abelson is later compared with the reformulation of dissonance theory and examined in closer detail (Chapters 10 and 13).

> "Whenever two signs are related by an assertion, they are congruent to the extent that their mediating reactions are equally intense, either in the same (compatible) direction of excitation in the case of associative assertions, or in the opposite (reciprocally antagonistic) directions in the case of dissociative assertions". (p.203)

When a state of incongruity exists, pressures toward congruity are postulated, such that:

> "Whenever two signs are related by an assertion, the mediating reaction characteristic of each shifts toward congruence with that characteristic of theother, the magnitude of the shift being inversely proportional to the intensities of the interacting reactions." (pp.200-201)

From this statement, the following quantitative predictions are derived (Osgood et al. 1957, pp.204-207):

(C_1 represents the magnitude of change of one "sign" and C_2 the magnitude of the second "sign"; p_1 represents the evaluative polarisation of the one "sign" - the degree to which it is favourable (+) or unfavourable (-) expressed as a deviation from the neutral point, and p_2 the evaluative polarisation of the second "sign").

$$C_1 = \frac{/p_1/}{/p_1/ + /p_2/} P_1 \quad \text{and}$$

$$C_2 = \frac{/p_2/}{/p_1/ + /p_2/} P_2$$

where $P_1 = p_2 - p_1$,

and $P_2 = p_1 - p_2$ for <u>associative assertions</u>;

or where $P_1 = -p_2 - p_1$,

and $P_2 = -p_1 - p_2$ for <u>dissociative assertions</u>.

(P_1 and P_2 represent the "pressures of incongruity".) *

McGuire (1960) uses logical consistency as a reference point from which deviations due to consistency between a person's belief on an issue and his evaluation of that issue may be considered (i.e. the consistency of "wishful thinking" as opposed to "logical thinking"). McGuire maintains that a "need for consistency" exists such that people have a need to maintain internal consistency among their opinions on logically related issues. He also holds that "adjusting one's beliefs to one's desires may be quite rational, providing the person has any of a number of conceptual systems." (p.78). McGuire maintains that the need for logical consistency may result in processes of

* The congruity model of Osgood and Tannenbaum is considered within the framework of the reformulation of dissonance theory in Chapter 10.

wishful thinking and rationalisation, such that beliefs tend toward consistency with desires.

Katz and Stotland (1959) stress the principle of consistency:

> "At a more structural level, one can speak of the principle of consistency just as the gestalt psychologists talk of principles of organisation. In fact, the trend toward consistency may be the most general principle of organisation of the psychological field." (p.443)
>
> "The principle of consistency is nearly always operative, but the direction it takes and the devices used to achieve consistency are subject to definite limitations. Thus, individuals can reduce inconsistency by giving up one of two opposed sources of need gratification. The common solution, however, will be to keep both incompatible desires and to resort to compartmentalisation and rationalisation of single attitudes to avoid the inconsistency." (p.456)

Kelman (1961) also uses the principle of consistency when postulating a process of internalisation by which an individual

accepts influence because the induced behaviour is congruent with his value system.

With all the emphasis on a common principle of consistency, it comes as a surprise when Rosenberg (1965) states:

> "These data are interpreted as supporting a consistency theory analysis of this type of attitude change and as calling the dissonance theory interpretation into question"

which clearly implies that Rosenberg does not consider dissonance theory as being based on consistency theory.

Zajonc (1960) made a penetrating analysis of the limitations of consistency as an explanatory concept but did not differentiate between Rosenberg's theory and dissonance theory in terms of the consistency principle.

Zajonc also points out that rationalisation is somehow related to consistency:

> "Thus, while the concept of consistency acknowledges man's rationality, observation of the means of its achievement simultaneously unveils his irrationality. The psychoanalytic notion of rationalisation is a literal example of a concept which assumes both rationality and irrationality - it holds, namely, that man strives

to understand and justify painful experiences and to make them sensible and rational, but he employs completely irrational methods to achieve this end."

Brehm and Cohen (1962) differentiate dissonance theory from others (including Rosenberg and Abelson's 'balance' theory) not on the basis of consistency at all, but on the basis of motivation, which, it must be clear by now, is inextricably entwined with the principle of consistency:

"In considering the relationship of dissonance theory to other theories of balance or incongruity, a major issue concerns the motivational one: just what pushes the organism to reduce inconsistency between the various cognitions or between cognitions and behavior, and so forth?" (p.224)

"In general, most incongruity theorists conceive of the need to reduce inconsistency as a general motive; this, therefore, accounts for its drive value." (p.224)

They continue:

"For him (Heider 1958), imbalance is completely encapsulated in the stimulus field and thus

inconsistency is motivating in itself." (p.225)

"Both Osgood and Festinger speak of cognitive inconsistencies as motives analogous to other drive states like hunger, thirst, sex, and anxiety, though they are purely cognitive in origin." (p.225)

Brehm and Cohen feel that the specification of dissonance or incongruity or imbalance as a general motive rests on a theoretical confusion between motives and motivational states. They elaborate dissonance theory to:

"Cognitive dissonance is a general 'motivational state' that always occurs when there is some prior motive associated with the cognitions that are dissonant." (p.228)

They consider dissonance to be aroused as a consequence of frustrating these other motives. They say "that the strong effects of dissonance manipulations...are in fact due to the commitment on the part of the person to a behavior that has implications for the frustration of important motives." (p.229) And in their view:

"In any one of the experiments mentioned, the simple existence of inconsistency has not been shown to be enough to motivate behavior; in each case the person has arrived at a state of dissonance as a consequence of some prior commitment that has consequences for satisfaction of important needs." (p.230)

But a comment by McGuire (1964) in a review of Brehm and Cohen's book illustrates that these issues are largely a matter of opinion and that clarity has not been achieved in showing either the similarities or the differences between the various theories:

> "They put forward the interesting but debatable proposition that dissonance differs from other balance theories (Heider, Newcomb, Osgood, etc.) in that the latter posit an ipso facto motivation to reduce incongruencies, whereas dissonance posits such a tendency only to the extent that inconsistency frustrates another motivation."

THE ELUSIVENESS OF DISSONANCE

In 1964 Chapanis and Chapanis launched a massive attack on dissonance theory and the experiments said to support the theory. They uncover various infringements of methodology which are probably unlikely to have altered the outcomes of the experiments materially. More serious is the ease with which it is possible to give alternative explanations for the results obtained, for it focusses on a fundamental weakness of the dissonance formulation. This centres on the question of whether the subject

actually perceives the situation confronting him as one involving dissonance, and if so, to what extent. Thus, even though the various alternative explanations do not make out a case as parsimoniously as those derived from a single dissonance approach, Chapanis and Chapanis make a strong point on the theoretical issue of defining the dissonance existing as a consequence of an encounter with a specific situation:

> "...the most important thing to note about the theory is that dissonance is an intervening variable whose antecedents are the <u>private internal cognitions</u> of a person. To test a theory like this, it is up to the experimenter to create various degrees of dissonance by introducing discrepant cognitions within an individual." (My italics)
>
> "The Festinger group is primarily concerned with applying their dissonance formulation to predict complex social events. In order to do this experimentally, they use elaborate instructions and intricate relationships between experimenter and S to introduce discrepant cognitions and therefore to produce dissonance. Under

such conditions, how can we be sure that the experimental situation has been successful in creating dissonance and dissonance alone?"

The stand Chapanis and Chapanis take is extreme, but it does emphasise that though the evidence for dissonance theory is compelling it is not convincing:

"Having now reviewed much of the experimental work supporting cognitive dissonance theory, we conclude that, as a body of literature, it is downright disappointing. Too many studies have failed to stand up to close scrutiny. Yet it is also obvious that the dissonance framework has a seductive allure not possessed by the rather similar, but symbolically more complex, interpretations by Heider, Osgood and Tannenbaum, or Newcomb." *

Secord and Backman (1964), concerned with the magnitude of dissonance, comment:

"Dissonance cannot be directly measured, and in actual practice in experiments, conditions are compared only with respect to whether or not condition A represents

* The relationship between 'balance' theory (Rosenberg and Abelson, Heider and Newcomb), 'congruity' theory (Osgood and Tannenbaum) and dissonance theory is examined later (Chapter 10). In the (contd.)

> a greater or a lesser amount of dissonance than condition B. At best, a series of conditions may be rank-ordered, but the exact quantities of dissonance present are not measured." (p.116)

Their conclusion that "the number of dissonant elements can never exceed the number of consonant elements, for this would lead to a change, removing the dissonance" is, however, unwarranted and seems to illustrate again the confusion attending dissonance theory.

Although Brehm and Cohen (1962) argue that "commitment may be a unique aspect of dissonance theory and that the addition of volition may perhaps enable a clear specification of dissonance arousal" (p.300), Stotland (1963) comments that "there is still no way except the intuitive for judging the dissonance between cognitions". In fact, Brehm and Cohen (1962) concluded that:

> "A great deal still remains to be done on such problems as the definition and specification of cognitive elements, the logical relationship between them, and the exact locus of psychological tension in a dissonant relationship." (p.313)

* reformulation of dissonance theory presented here, symbolic complexity can no longer be used as a distinguishing criterion!

To which Roger Brown (1965) adds:

"The implication that figures in the definition of dissonance is never logical implication." (p.595)

And with regard to determining the magnitude of dissonance, he states that "there is no adequate procedure for eliciting and counting elements and cannot be, so long as the element is not clearly defined." (p.599)

With regard to the logical structure of dissonance theory, Roger Brown is explicit about its deficiencies:

"With its basic concepts unclear, it is not possible that dissonance theory should have a rigorous logical structure. The derivations of the outcomes of the many experiments are not true deductions but only an arbitrary selection from the many possible ways of thinking about these experiments." (p.601)

"...what is it that is confirmed by many confirming experiments on the subject of dissonance? It is not a set of general propositions that might be called a theory of cognitive dissonance. It may, in part, be the general importance of an inconsistency

principle for understanding attitude change." (p.602)

He also makes the point that there are usually several ways of explaining the outcome of almost any dissonance experiment without recourse to the principle of dissonance.

Roger Brown's caustic comments on the claim that only dissonance theory provides a systematic framework for a certain body of experimental findings follow:

> "Brehm and Cohen (1962)....admit that many of the experimental outcomes can be explained by concepts other than dissonance. They point out, however, that these other concepts are not a unified theory but just an odd lot of ideas invoked to suit the occasion. Only dissonance theory they hold can explain the lot. But dissonance theory itself is a mixed bag of ad hoc ideas. There is nothing common to all the derivations but a notion of inconsistency and a certain vocabulary." (p.603)

Taking a line similar to that of the Chapanis's he, too, finds it disturbing that data are lost when subjects refuse to complete the experiment in dissonance investigations of the forced compliance or

insufficient justification type (see Chapter 1 for the type of experiment).

From an evaluative standpoint during the course of this chapter, various commentators expose general weaknesses in the formulation of dissonance theory. However, it should be noted that at least some of these criticisms could be applied to the other "consistency" theories in so far as they share features in common with dissonance theory, such as the consistency-motivational postulate.

The next chapter will be concerned with the apparent limitations imposed on the conditions of dissonance arousal in the explications of dissonance theory. After this modification of the consistency principle, the status of a unitary consistency principle is considered and the troublesome definition of dissonance examined.

SUMMARY

Following on the presentation of Festinger's theory and the comments in respect of dissonance theory experiments in Chapter 1, broad criticisms of the theory are expounded at the beginning of the chapter. Then follows the contention that there is no real distinction between dissonance reduction and the process of rationalisation, but that the introduction of the term "dissonance" to describe the antecedent condition giving rise to the process is

an important innovation, since it allows conceptualisation of degrees of magnitude associated with the antecedent state. However, as Moscovici comments, the postulation of a drive to reduce inconsistency or dissonance does itself require an explanation. The principle of consistency in conjunction with a notion of homeostasis is generally considered to be at the basis of Festinger's formulation, a basis which is seen to be shared by several other approaches to attitude change. Zajonc relates the concept of consistency with the process of rationalisation. The elusive nature of dissonance and its uncertain existence in dissonance theory experiments is considered, as is also the logical structure of the theory, in the light of appraisals by various commentators.

SECTION I : THEORETICAL EVALUATION

CHAPTER 3 DISSONANCE AROUSAL AND THE DEFINITION OF DISSONANCE

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DISSONANCE AS A POST-COMMITMENT OR POST-DECISION STATE OF AFFAIRS

There is a certain ambiguity about the conditions under which dissonance occurs. The original definition of dissonance makes no mention of specific conditions, only that two elements are dissonant if one is in some way inconsistent with another. However, throughout dissonance theory the discussion has generally been about dissonance arising as a consequence of decisions, commitments, and situations of forced compliance (Festinger 1957, 1964, Brehm and Cohen 1962). The distinctions between decision, commitment and forced compliance are slight as far as the way dissonance theory is applied to them - they all involve commitment; commitment to the decision taken, commitment to the behaviour engaged in under compliance. Dissonance is held to arise <u>after the act</u>; after the decision, after the commitment, after the compliance. Indeed it has already been noted that Brehm and Cohen argue that commitment may be a unique aspect of dissonance theory.

When writing of the decision process, Festinger (1957) does not consider dissonance to exist until the decision has been made, in spite of the fact that decisions which are not trivial involve alternatives in which certain aspects go counter to certain others. Instead, he characterises the pre-decision situation as one entailing conflict, but without dissonant elements:

"It is best...to also discuss the distinction

between conflict and dissonance, because they are dynamically different in their effects. The person is in a conflict situation before making the decision. After having made the decision, he is no longer in conflict; he has made his choice; he has, so to speak, resolved the conflict. He is no longer pushed in two or more directions simultaneously. He is now committed to the chosen course of action. It is only here that dissonance exists, and the pressure to reduce this dissonance is not pushing the person in two directions at once." (p.39) (My italics)

Thus, according to Festinger, dissonance exists only after the decision, which is certainly not implied in his original definition of dissonance, but which does, on the other hand, specify explicitly the conditions under which dissonance does occur.

Festinger (1954), in emphasising "the theoretical position that pre-decision and post-decision processes are dynamically different", (p.19), states quite unequivocally that dissonance does not exist until after the decision is made.

Thus there seems to be a subtle acceptance of a modification of the definition of dissonance to include a condition of post-decision

and post-commitment as a limitation to the existence of dissonance. Rosenberg (1966) appears to recognise this, though he stops short of committing himself fully:

> "...the theory of cognitive dissonance has had an obvious pertinence for the problem of how people adapt to their choices once they have made them. Indeed it could well be argued that in large part this is what the theory has really been concerned with; that even when examining attitude change or motivational or kindred phenomena, Festinger and his school have essentially been tracking the antecedent conditions and psychological conditions of decisions that won't stay quietly and firmly decided without further cognitive reorganisation." (my italics)

THE ISSUE OF CONSISTENCY AS A UNITARY PRINCIPLE

Much ambiguity centres on what is meant by consistency. In his recapitulation of dissonance theory, Festinger (1957) says:

> "The basic background of the theory consists of the notion that the human organism tries to establish internal harmony, consistency, or congruity among his opinions, attitudes,

knowledge, and values. That is, there is a drive toward consonance among cognitions". (p.260)

Yet this appears to be modified to hold in the post-commitment or post-decision situation only as noted in the previous section. As Deutsch and Krauss (1965) state, dissonance theory differs from other theories of consistency in that "it places unique emphasis on the consequences of decisions" (p.68).

Deutsch and Krauss feel that dissonance theory, in common with other consistency theories, shares the defect of:

"...a rather vague definition of the meaning of psychological inconsistency or dissonance which does not consider the 'degree of inconsistency'..." (p.69)

Zajonc (1960) points out the imperfect explanatory power of the principle that "Human nature...is said to abhor inconsistency" likening it to a previous famous principle from early physics that nature abhors a vacuum. But is the limitation due solely to the deficiency of the principle of consistency, or is it also due to reference of different types of consistency as though they were one?

Thus Rosenberg (1963), sensitive to the confusion about what is meant by inconsistency, ask whether it occurs between <u>affect</u> and <u>cognition</u> (Rosenberg 1960), between <u>cognitions</u> about <u>affect</u>

eliciting objects and the perceived relationships between them (Heider 1958, Newcomb 1953, Cartwright and Harary 1956, Osgood and Tannenbaum 1955, Rosenberg and Abelson 1960), and between cognitions about affect and belief and overt actions (Festinger school).

However, Roger Brown (1965) finds that: "...the combination of ideas that would usually be considered inconsistent by the one analysis (Rosenberg and Abelson 1960) would usually also be considered inconsistent by the other analysis (dissonance theory). ...For the most part balance models and dissonance theory are operating in the same domain." (p.595). He shows that a close correspondence exists between a dissonance analysis in terms of propositions and a balance analysis in terms of elements, values and relations, with an exception in dissonance propositions that do not express evaluations but express psychological expectation.

In an analysis of what is meant by implication in dissonance theory, Brown concludes that: "...the relation between propositions that generates dissonance is not a matter of logical implication but of psychological expectation." (p.596)

And that:

> "Psychological expectation is a broader concept than imbalance. Imbalance only applies to valued elements, whereas expectations need not involve values or

> attitudes. Abelson and Rosenberg (1960) specifically excluded from the domain of the balance model such relations as 'is north of' and 'is next in line to'. With such relations one can, however, generate combinations of ideas that are dissonant. For example, the propositions: Canada is north of the United States; Windsor (Canada) is south of Detroit (U.S.A.). This combination is dissonant but not imbalanced. Imbalance is <u>one variety</u> of dissonance, the variety concerned with values or attitudes." (p.596) (My italics)

Thus Roger Brown is suggesting that the consistency principle of dissonance theory derives from psychological expectation, that balance models are essentially a sub-class of dissonance theory, and that frequently they share the same domain of operation.

At which point one might query: do Rosenberg and Abelson (1960) consider that 'their' storeowner* experiences dissonance or consonance when his disliked and negatively evaluated manager is believed to increase sales which are positively evaluated by the storeowner? The answer according to the balance model (see Chapter 2) is that the storeowner would experience imbalance, since a positive

* This is a reference to an experiment administered by Rosenberg and Abelson (1960) to test predictions made on the basis of their balance model. In this experiment, subjects were asked to role-play a storeowner who held certain values with respect to one (contd.)

relation exists between a positively evaluated and a negatively evaluated entity. A dissonance theorist, on the other hand, might answer that the storeowner is committed to promoting sales and that he therefore experiences consonance, since the belief that the salesman increases sales is consonant with promoting sales. Hence, in this example the one analysis does not derive the same conclusion as the other analysis, nor is the one a subclass of the other, even though psychological expectation may feature in both.

The dissonance analysis above would seem to comply with Brehm and Cohen's stress on volition (e.g. to own a store) and commitment (e.g. to sell goods) and illustrate the province of dissonance theory. The balance analysis does not involve volition and commitment, but does involve the relationship between evaluated entities, and illustrates the province of balance theory. However, both analyses are appropriate to the same situation and both involve different kinds of consistency. Therefore, as well as the limitations on the <u>degree</u> with which the consistency principle may hold, the consistency principle as a <u>unitary</u> principle is to be questioned. That dissonance and balance theories coincide in their analyses of many situations, as Roger Brown has shown, simply adds to the confusion.

* of his managers and to modern art. "Evidence" was presented to indicate that the manager had increased sales in his department and also that he intended to mount a display of modern art. Three conditions were run: the one cited here is that in which the subject was asked to role-play a storeowner with a negative evaluation of his manager. Further details of the experiment are reported in Chapter 13 which describes a replication of the experiment.

It seems therefore that consistency as a unitary principle would have to be abandoned. And once consistency as a unitary explanatory principle is abandoned, the whole motivational basis of the "consistency" theories is seriously questioned since, as has been shown, the issue of motivation is intimately related to the issue of consistency.

EGO-INVOLVEMENT AND DISCREPANCY

Another argument in favour of abandoning consistency as a motivational principle comes from the work on ego-involvement and the social judgment approach to studying attitudes, on which the most recent text is that by Sherif, Sherif and Nebergall (1965). This cites considerable evidence to show that ego-involvement on an issue (i.e. the importance of the issue to the individual) is a major factor in the degree to which an individual might change his opinion when some other point of view is presented to him. It is demonstrated that frequently the greater the commitment to a particular stand on an issue (i.e. the greater the ego-involvement in that stand), the less is the individual likely to change his opinion in the face of a discrepant communication (Sherif et al. 1965), or when engaging in discrepant behaviour (as when the individual expresses an opinion contrary to his own in role-playing experiments - e.g. Kbling in Sherif et al. 1965).

In these studies it is ego-involvement rather than consistency

that is the important factor. It is also just in these situations of communication discrepancy (the discrepancy between an opinion expressed in a communication and one's own opinion) and role-playing that the social judgment and dissonance approaches tend to make conflicting predictions with regard to the amount of attitude change following the reception of a discrepant communication or the expression of discrepant opinions in role-playing (Sherif et al. 1965; Sherif and Hovland, 1961; McGuire, 1966; Insko et al. 1966). According to the social judgment approach, the greater the ego-involvement and the greater the discrepancy of the advocated opinion, the less would be the attitude change, whereas according to dissonance theory, the greater the discrepancy the more the dissonance, hence the greater would be the attitude change. Insko et al. (1966) argue that a curvilinear relationship between attitude change and communication discrepancy may be deduced from both approaches, but for different reasons. The experimental evidence on communication discrepancy (summarised in Insko et al. 1966) tends to be contradictory, though it is possible that a curvilinear relationship would reconcile this confusing state.*

In respect of communication discrepancy experiments, one might question whether an opinion held by another is inconsistent with an opinion held by self when these opinions are discrepant. In what way can an opinion held by one person be inconsistent with an opinion held

* The issue of attitude change and communication discrepancy receives further attention in Chapter 9, in which a reconciliation of the social judgment and dissonance approaches is attempted.

by another? The opinions may be different or discrepant, but they would be inconsistent only if both were held at the same time by the same person. There is no inconsistency in a view advocated by another being different from one's own. Again, there is no inconsistency in engaging in discrepant behaviour when one has been especially asked to for a particular reason. It seems that discrepancy is a more appropriate term to use for these situations: discrepancy between some other stand advocated on an issue and one's own stand, discrepancy between another person's belief and one's own, discrepancy between behaviour engaged in and behaviour believed in, discrepancy between the actuality of a situation and one's expectation of it. Inconsistency would apply if one believed in one's own stand on an issue and at the same time believed in some other stand, if one was aware of the actuality of a situation and at the same time continued to believe in one's discrepant expectation of the situation. This is not to say that discrepancy is not of importance to dissonance theory; quite the contrary; it is, but inconsistency or consistency is not the principle to be applied.

Throughout the previous discussion of Festinger's theory, the nature of dissonance has been queried. It has been stated by several commentators that the meaning of the definition is obscure. Dissonance is most readily identified with the principle of consistency. This principle has been examined and doubt expressed about its efficacy as an explanatory concept. It is a doubt which must apply

to all "consistency" models using the principle, and not only to Festinger's theory. However, in addition to the deficiency of the consistency principle, there exists another deficiency in Festinger's definition which is examined next.

EXAMINATION OF THE DEFINITION OF DISSONANCE

> "Let us consider two elements which exist in a person's cognition and which are relevant to one another. The definition of dissonance will disregard the existence of all the other cognitive elements that are relevant to either or both of the two under con sideration and simply deal with these two alone. These two elements are in a dissonant relation if, considering these two alone, the obverse of one element would follow from the other. To state it a bit more formally, x and y are dissonant if not-x follows from y." (Festinger 1957, p.13)

Apart from the lack of definition of element, the various possible interpretations of the term obverse, and the inappropriateness of 'obverse' when considering such instances as the discrepancy between a stand advocated by one person and that held by another, there is another serious theoretical and practical problem. The practical aspect had, in fact, been partially recognised in the

original statement of the theory; it concerns the determination of dissonant and consonant elements:

> "The conceptual definitions of dissonance and consonance present some serious measurement difficulties. If the theory of dissonance is to have relevance for empirical data, one must be able to identify dissonances and consonances unequivocally. But it is clearly hopeless to attempt to obtain a complete listing of cognitive elements, and even were such a listing available, in some cases it would be difficult or impossible to say, a priori, which of the three relationships holds." (p.15)

However, the difficulty stems not so much from the number of elements that might exist, but from the definition of dissonance that makes it arbitrary deciding which are dissonance elements and which are consonant:

> "Let us consider now the total context of dissonances and consonances in relation to <u>one particular element</u>. Assuming <u>momentarily</u>, for the sake of definition,

> that all the elements relevant to the *one in question* are equally important, the total amount of dissonance between this *element* and the *remainder* of the person's cognition will depend on the proportion of relevant elements that are dissonant with the one in question." (p.17) (My italics)

Having done this for one particular element, the question arises as to what happens when another particular element is taken from the remainder and the consonances and dissonances in relation to that one are considered. This problem arises in particularly acute form, since in the totality of elements two are in a dissonant relation if, *considering these two alone*, the obverse of one would follow from the other. Thus one element considered in relation to another may be dissonant but the same element considered in relation to a further element may be consonant. Should that element be considered dissonant or consonant? Or is the dissonance to be worked out in relation to each element in turn? In which case, how is dissonance reduction to be conceived as operating when dissonance in relation to one element depends on elements which are *consonant* in relation to another element?

It is simply not true that the last quoted statement "can of course be easily generalized to deal with the magnitude of dissonance which exists between two clusters of cognitive elements" (p.17).

For if it is difficult to understand how elements should be considered with respect to one cluster, it is even more difficult to understand what is meant by the "relevant relations between elements in the two clusters that were dissonant".

The theoretical issue in question concerns: with respect to what should an element by considered dissonant or consonant? Festinger's theoretical statement implies that each element should be considered with respect to every other. In practice this is not done (the theory, as has been indicated, would be unworkable if it were). Instead, elements are considered with respect to a particular referent element, for example, an element which is dissonant with respect to a particular commitment together with an element which is consonant with respect to that commitment, or they are not considered at all as in the post-decision dissonance experiments, which consider only the relative attractiveness of the decision alternatives. When elements are stated they are not deduced from the theoretical definition of dissonance, but are derived arbitrarily on an intuitive basis.

The weakness of the basic definition of dissonance is clearly responsible for much of the adverse comment directed at Festinger's theory. With the basic definition unclear, it follows that a certain ambiguity must attach to the magnitude of dissonance aroused in dissonance experiments, and it is noteworthy that no estimate of magnitude is attempted in any of these experiments, despite the

dependence on manipulations of the magnitude of dissonance in many of them for the predictions made by dissonance theory.

The exposition and critique of dissonance theory as it stands to date closes with this chapter. The remaining chapter of this section returns to the influential approach to the definition of an attitude as a 'predisposition to respond' and suggests a shift of emphasis towards establishing the process of appraisal as an integral part of attitude theory.

SUMMARY

Although no explicit statement of the conditions of dissonance arousal is given with the original definition of dissonance, it is noted that dissonance is generally regarded as occurring only as a consequence of a decision or a commitment. The restriction of dissonance arousal to post-decision or post-commitment situations is regarded as a limitation on the "consistency principle" with which dissonance theory is identified. The consistency principle as a motivational basis receives further examination and is considered to have doubtful explanatory power for various reasons, one being that it cannot be used as a unitary principle, since consistency may be interpreted in several ways, another being that it ignores the major factor of ego-involvement, yet another being that the term "consistency" is inapplicable to situations involving a discrepancy between a stand on an issue advocated by one individual

(or in a communication) and the stand held by another. As well as the doubtful value of the principle of consistency in the definition of dissonance, the definition is shown to have another serious deficiency in the lack of any theoretical referent with respect to which elements may be established as dissonant or consonant.

SECTION I : THEORETICAL EVALUATION

CHAPTER 4 AN ALTERNATIVE APPROACH TO ATTITUDE AS A PREDISPOSITION TO RESPOND

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PREDISPOSITION TO RESPOND

The last section completes the critique of dissonance theory as it stands to date. This section examines whether grounds exist for a reorientation of approach to attitude theory from the "traditional" predisposition to respond approach to a predisposition to appraise approach.

The discussion which follows is pertinent to the relationship between a possible behavioural act ("response"), such as a decision, and an accompanying state of dissonance. In arguing for a reorientation in attitude theory towards considering the process of appraisal, the reformulation of dissonance theory is anticipated (Section II, Chapter 5 to 11).

The dichotomy between 'to respond' and 'to appraise' parallels the supposed dichotomy between 'behaviour' and 'experience', in particular the attempt to eliminate conscious experience as part of an explanatory psychological system. Campbell passes off any explanation in terms of experience as involving the little lever pulling man behind the scenes, the homunculus:

> "If social psychology is to develop a cumulative and integrative theory of acquired behavioral dispositions, it would seem wise to practice translations across the semantic barrier created by the

implicit homunculus model of conscious experience." (Campbell 1963, p.122)

Campbell of course advocates treating attitudes as acquired behavioural dispositions. He is not concerned with how an individual appraises his environment and himself, but with response patterns. However, he notes that most reporting about attitudes is in terms of experience. He offers as a solution the idea of isomorphism between experience and action, and considers the lexicon translation of items of experience into actions as being an important task confronting social psychologists:

> "The bold postulation of isomorphism between experience and action will probably do much to unify social-psychological theory and to substitute genuine predictive disagreements among theories...for specious semantic squabbles. Convinced as I am that the greatest bulk of data available to the student of social attitudes will come in the form of linguistic references to conscious contents of the view-of-the-world type, the development of a specific lexicon translating views of the world into response patterns becomes an important and unfinished empirical business." (p.133)

But this is an untenable position. There is no trandation possible between 'views of the world' and response patterns. They are not isomorphic. Certain actions may be taken, or perhaps no action, as a consequence of the individual's appraisal of a situation he encounters, but these actions or absence of action are not translations of his 'view of the world'. His actions or responses are not isomorphic with his experience though they may be due to his experience. A person decides to act or not to act depending on his appraisal of the situation. In a situation in which an individual must decide between alternative courses of action, it is contended that his decision is a consequence of his appraisal of the alternatives. His response (his decision) cannot be isomorphic with his experience of the alternatives but only, at best, with his experience of the act of decision itself.

By postulating the principle of isomorphism, Campbell is essentially saying that two languages exist describing the same phenomena, and according to him:

> "If experience and action are now known to be completely isomorphic, the development of laws relating them seems to be completed...The behaviorist's laws predicting behavior thus become laws predicting the corresponding conscious experiences." (p.133)

However, this mutual translatability is here questioned and therefore another problem hinted at:

> "...if the two languages are not inter-translatable, then they deal with different kinds of facts. The relation between these kinds of facts constitute our problem, which can therefore only be formulated by constructing <u>one</u> language in which we can speak about <u>both</u> kinds of facts." (Popper 1965, p.294)

The problem here is the relationship between experience and behaviour, between a person's appraisal and his actions.

> "There is no reason (except a mistaken physical determinism) why mental states and physical states should not interact. (The old argument that things so different could not interact was based on a theory of causation which has long been superseded.)" (Popper 1965, p.298)

And by way of example, Popper states:

> "If we act through being influenced by the grasp of an abstract relationship, we initiate physical causal chains which have

no sufficient physical causal antecedents.
We are then 'first movers', or creators of
a physical 'causal chain'." (p.298)

In a similar way it is here contended that experience can be an antecedent to behaviour and that when it is, there is no sufficient behavioural causal antecedent such as, for example, an existing behavioural disposition.

The introduction of the concepts of volition and commitment into dissonance theory (Brehm and Cohen 1962) denote the acceptance of the experiential nature of the psychological processes involved as an explanatory factor. From a behavioural point of view, there need not be any behavioural distinguishing features between an action experienced as volitional and involving commitment, and an action which is an automatic response, yet according to dissonance theory certain consequences would follow from the former which would not follow from the latter.

The ego-involvement approach to attitudes again expresses the importance of experience:

"To the extent that the person's
experience of who he is as a person,
who he is not, and what he must reject
by virtue of being that person is
defined by the bounds of a particular

attitude, to that extent its stability is not subject to striking alterations by the ups-and-downs of environmental events, including communications designed to persuade him to a discrepant view." (Sherif et al. 1965, p.xiii)

and

"The language of judgment applied to attitude problems provides operational tools for assessing the degree of the person's involvement in his stand, for establishing the bounds of his positive and negative commitments, and for determining the discrepancy which he experiences between his position and a communication. Thus the measurement of his susceptibility to change as well as the nature of any change that occurs can be refined." (Sherif et al. 1965, p.xiv)

Smith, Bruner and White (1956) found it necessary to approach their investigation of attitudes by way of the individual's appraisal of the 'attitude object'. They defined an attitude as:

"a predisposition to <u>experience</u> a class of objects in certain ways, with characteristic

affect; to be motivated by this class
of objects in characteristic ways; and
to act with respect to these objects
in a characteristic fashion." (p.33) (My italics)

They stress the appraisal process:

"In essence, object appraisal may be
thought of as the process of testing
reality in order to assess its relevance
to one's ongoing enterprises. It com-
prises those activities whereby the
events and issues in the person's world
are appraised for their relationship to
his motives, goals, values and interests." (p.261)

Deutsch and Krauss (1965) in discussing dissonance theory also emphasise the experiential aspect of the psychological process. In addition they suggest that <u>self-conception</u> is an important factor in dissonance arousal:

"The psychoanalytic term 'rationalization',
used to refer to the processes involved in
the reduction of postdecisional dissonance,
clarifies the discussion because it is useful
to think of postdecisional dissonance as a
form of 'defensiveness' and to think of

'dissonance reduction' as a 'mechanism of defense'. According to this view... when a person experiences dissonance after making a choice, he is attempting to defend himself against the perceived implication of his choice which is contrary to his self-conception." (p.74)

It would seem from the foregoing that <u>experience</u> would have to feature as an <u>integral part</u> of an explanatory psychological system in relation to attitudes and dissonance processes. There would seem good grounds, therefore, to approach attitude theory in terms of a predisposition to appraise, rather than a predisposition to respond. There are, of course, many circumstances when a predisposition to appraise would amount to much the same as a predisposition to respond. However, it is contended that an appraisal process mediates any behavioural outcome.

Incorporating experience as an integral part of an explanatory system counters Campbell's view of consciousness as an epiphenomenon, but does not re-introduce the homunculus as he would suggest. This is because <u>experience</u> features in the explanatory system rather than <u>a person experiencing</u>.

With a reorientation to a predisposition to appraise approach, it is evident that the appraisal process itself becomes an important

psychological process to consider.

Magda Arnold (1960, 1967) has emphasised the process of appraisal in the production of emotion. Lazarus (1967) regards "appraisal as the intervening process in psychological stress analysis" (p.153), and research from his laboratory has shown that a stressful film will produce less stress reaction if the appraisal of the harmful significance of the events portrayed is altered.

It is evident that consideration of the appraisal process in emotion and psychological stress is relevant to appraisal in attitude processes, because of the frequent conjunction of attitudinal evaluation with emotional expression (see previous discussion of affective and evaluative aspects in the definition of attitude: Chapter 1). Thus, if the appraisal of the harmful significance of events portrayed is altered, the evaluation of or the attitude to those events is changed, with the attitude dependent on the appraisal.

What Lazarus (1967) says with respect to coping processes in stress situations could just as well apply to attitude processes:

> "...when we say that an individual appraises a situation (in choosing a form of coping process), we are opening the way to seeing the effects as caused by a transaction with a particular environment by an individual with

> a particular psychological structure. We are implying in this way that if we know the factors in the stimulus configuration and those within the psychological structure that jointly influence their appraisal, we could then predict the coping process and the observed reaction. In my mind, appraisal signifies such a transaction, and, as such, offers an advance over purely stimulus and trait centered analysis of psychological stress." (p.162)

And consideration of appraisal could offer an advance over the "predisposition to respond" approach to attitudes.

SUMMARY

Campbell's view of isomorphism and mutual translatability between behavioural response patterns and "view-of-the-world" experiences, and his contention that the behaviourist's laws predicting behaviour become laws predicting corresponding conscious experiences, are criticised. It is argued instead that experience would have to feature as an integral part of an explanatory psychological system. In place of a 'predisposition to respond' approach to the examination of attitudes, it is suggested that attention should be given to the intervening process of appraisal

and the emphasis shifted to a 'predisposition to appraise' approach.

SECTION II : NEW THEORY

A THEORY OF APPRAISAL AND REAPPRAISAL: AN EXTENDED REFORMULATION OF DISSONANCE THEORY.

CHAPTER 5: IDENTITY STRUCTURE AND PSYCHOLOGICAL EFFICIENCY

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INTRODUCTION

The emphasis of Section I is on evaluating Festinger's theory of dissonance as it stands to date. In this Section, Chapters 5 to 11, the theory is elaborated and reformulated in terms which attempt to overcome the deficiencies of the original formulation. The necessity for a reformulation, which stems from the evaluation of Section I, arises out of the following issues (see Chapters 2 and 3):

(1) that the homeostatic notion of the consistency-motivational principle is an inadequate explanation of dissonance reduction processes;

(2) that the definitions of consonance and dissonance are ambiguous, so that, in experimental situations, it is impossible to use them to delineate consonant and dissonant elements rigorously;

(3) that there exists no theoretical statement by the implementation of which an estimate of the magnitude of dissonance can be ascertained.

In Chapter 4 it is argued that attention should be given to the process of appraisal, and in the present reformulation this is the strategy adopted in explicating the above issues. However the

appraisal process, by means of which the individual evaluates the situation he encounters, cannot be considered simply as an autonomous process since it does not operate in a vacuum but within the context of the individual's identity. How situations are evaluated, and the meaning they have for the individual, depend, in large part, on the past experiences of the individual. A major problem is the question of how the past experiences of the individual, as they have established within him certain likes and dislikes, certain hostilities, various prejudices and views of the world, all as part of his identity - how these orientations within the individual interact with the environmental situations as they present themselves to him, or as he acts on, or presents himself to, these situations. This problem is approached by introducing a concept of identity structure by means of which past experiences, and especially past affective states (bearing in mind that the subject matter of the thesis is to do with attitudes), are formulated as they continue to be an aspect of the individual's identity and influence his present behaviour.*

To the formulation of identity structure is added the conceptualization of processes which function in the maintenance of

* The concept of identity structure is not the same as the self concept (Rogers in Koch, 1959; Wylie, 1961). The way in which the concepts differ receives attention later in the chapter.

the identity structure and also in the transaction between the individual and his environment. The term psychological efficiency is introduced and defined to express the state of functioning of these processes in relation to any aspect of the individual's identity that is under stress or is undergoing modification. With the introduction of the concept of identity structure and the definition of psychological efficiency it then becomes possible to consider the process of appraisal as a process operating within the context of the individual's identity.

The consequences that follow on the appraisal process, that is, that follow on the confrontation between the past experiences, present intentions and the present environmental situation, constitute a second major problem. Such interaction may result in a behavioural act, which might be a decision to follow a particular course of action, or it may result in a reappraisal of issues held important by the individual and an extended differentiation between aspects of such issues, or it may result in both a behavioural act and reappraisal. It is also possible that appraisal results in neither action nor reappraisal, but involves instead a distortion of the environmental situation or denial of the relevance of certain aspects of it.

In order to distinguish the relationship between these processes the term appraisal is limited to the immediate appraisal of a

situation by the individual and the term reappraisal is used to describe the process by which the evaluation and meaning of entities and issues associated with the situation become modified and extended*. It will be seen when the theory of these processes is elaborated in Chapters 6 and 7 that the process of appraisal is regarded as the process which may result in dissonance arousal, and the process of reappraisal as the process which may involve, though not necessarily involve, dissonance reduction.

The process of reappraisal need not necessarily follow the process of appraisal or it may follow some time after the initial appraisal, as, for example, when appraisal of a situation results in a decision, only after which does reappraisal occur. Evidence that reappraisal and dissonance reduction occur only after the decision is given in experiments described in Festinger (1964) - see, for example, the experiment by Jecker described in Chapter 1 of this thesis.**

Consideration of the appraisal process as the process which may result in dissonance arousal, together with the concept of psychological efficiency, provides an opportunity for expounding a theory of the decision process within the context of attitude

* The terms appraisal and reappraisal may be extended to include anticipatory appraisal of future (imagined) situations, and reflective reappraisal of long past events.

** The restriction of reappraisal to the post-choice situation does not extend to the state of affairs in which new information is received prior the decision which has a bearing on some aspect of the alternatives under consideration.

processes (see Chapter 8). It also enables theoretical status to be given to the phenomena of post-decision regret and decision reversal described by Festinger (1964) - see the experiment by Festinger and Walster described in Chapter 1 of this thesis.

A major extension of dissonance theory is the postulation of three inter-related modes of dissonance arousal following on three distinct, but inter-related modes of appraisal. One mode is concerned with the recognition of the concordance or discrepancy between an expectation or a belief and the corresponding "actuality" presented by a situation (e.g. a discrepancy may exist between the expectation of the occurrence of a certain phenomenon compared with the actuality of its non-occurrence; or one may exist between the belief that an individual possesses certain characteristics and a contrary position argued in a communication, etc.) - see Chapters 6, 7 and 9.

A second mode is concerned with associative and dissociative relationships between various entities as they are perceived to exist within the context of the appraised situation (e.g. an association between Israel and the U.S.A. in the context of the Middle East War; the dissociation between India and Pakistan; an association between a person and his teaching position, etc.) - see Chapters 6, 7 and 10.

The third mode involves the individual's intentions and identifications, and concerns the perceived effects and outcomes in relation to them (e.g. the jeopardizing effect of some other person's lack of co-operation in relation to an intention to organize a job of work efficiently; or the effects of the policies of the "governments" of Rhodesia and South Africa in relation to an identification with the aspirations of the coloured population of these countries for a racially mixed democratic society, etc.) - see Chapters 6, 7 and 11.

An example of the way in which these modes may be inter-related might occur in the appraisal of a propaganda statement issued from South Africa House, arguing that democracy exists in South Africa. Now, with respect to the second mode and considering the past history of the individual's thoughts on the subject, the relationship between the entities 'South African government' and 'democracy' might be appraised as a dissociated one. With respect to the third mode the effects of the 'South African government' in relation to the individual's identification with 'democracy' is likely to be appraised as negative and contrary to the principle of democracy. Then, considering the first mode, the stand taken by the communication (the propaganda statement) is recognised as being discrepant with the belief held by the individual about the

relationship between 'South Africa' and 'democracy'*. The detailed consideration of the three modes of appraisal and the interaction between them is given in the course of Chapters 6, 7, 9, 10 and 11, and an experiment designed to test predictions about these interactions is described in Chapter 13.

The theoretical considerations behind the postulation of these three distinct but inter-related and interacting modes of appraisal are related to the inadequacy of the consistency-motivational principle and, as will be shown in the course of the thesis, the interaction of these modes can actively mitigate against the establishment of consistency. Therefore, the inadequacy of the principle which is demonstrated in Chapters 2 and 3 is further confirmed, and one may conclude that the consistency principle cannot be used as the basis of an explanation for balance, congruity, or dissonance reduction as it is used by Heider, Rosenberg and Abelson, Cartwright and Harary, and others in the 'balance' tradition, by Osgood and Tannenbaum (the 'congruity' tradition), and by the Festinger school (the 'dissonance' tradition) (see the review of the various 'consistency theorists' in Chapter 2).

The rest of this chapter will be concerned with providing the basis for an alternative interpretation of dissonance phenomena, the following chapter (Chapter 6) will consider the process of appraisal

*or discrepant with the expectation of the relationship to be stated in the communication.

and dissonance arousal, during the course of which new definitions of dissonant and consonant elements are given, and Chapter 7 will consider the process of reappraisal and dissonance reduction. In Chapter 8 the decision theory is formulated in terms of the stages of pre-decision appraisal, the decision itself, and post-decision reappraisal. Chapters 9, 10 and 11 consider the three modes of appraisal and dissonance arousal in more detail, and bring to a close the section on new theory.

Part (i)

Identity

As already noted the appraisal process is not autonomous but operates within the framework of the individual's past experiences, his intentions and identifications. The concept identity structure is formulated to give consideration to the psychological matrix within which the transactions with the "external" environment occur. What follows is the minimum outline of the concept necessary for an understanding of the appraisal and reappraisal processes as they are considered in the following chapters. Many pertinent and interesting questions with respect to the individual's identity cannot be dealt with since the thesis is limited to an examination of dissonance processes. It is again emphasized that the following considerations of identity structure are elaborated in order to clarify issues concerning dissonance processes. The concept may be regarded as sitting squarely in the

field of personality theory; however, its relationship to personality theory will not be discussed here because the focus is on dissonance. The constructs offered are ones which enable certain processes to be discussed from a new vantage point and certain distinctions to be drawn - for example: the processes of dissonance arousal and dissonance reduction; the distinction between appraisal and reappraisal. The concepts presented here are elaborated for their usefulness in the ensuing discussion. They are regarded as the minimum for that discussion.

Before elaborating the concept of identity structure it is necessary to establish what is meant by identity. Two closely inter-related aspects of identity will be distinguished in preparation for the eventual consideration of two corresponding modes of appraisal. The concept of identity has received extended treatment by psychoanalytically orientated writers. Thus, Erik Erikson (1965)* gives a rough definition of "ego-identity" as follows:

> "this sense of identity provides the ability to experience one's self as something that has continuity and sameness, and to act accordingly". (p.37)

and more explicitly (Erikson, 1955, p.142):

> "the sense of identity is a sense of inner continuity and sameness in development, in that

* Earlier edition: 1950

what one was made to expect as a child, and what one can anticipate that one will be, coincides with what one is."

For Laing (1961):

"A person's 'identity' is first of all that whereby he is the same being in this place at this time as he was at that time in the past, and as he will be at that place in the future: it is the complex of those aspects of his being whereby he and others identify him." (p.75)

Laing's incorporation of "the complex of those aspects of his being whereby he and others identify him" emphasizes that identity refers not only to how the individual identifies himself, but also to characteristics whereby others identify him. The individual himself may not be aware of his own characteristics and the effects of past experiences on him, yet others may witness them and react to them accordingly, and their reactions contribute to identifying him. Thus, the experiencing of other's actions in relation to the self are incorporated into the totality of the individual's identity. This means that identity, as defined here, incorporates the whole matrix of the individual's experiences of himself and of others in relation to the innumberable situations encountered and identifications realized in his life history. It

will be shown that this is a more inclusive term than the self concept of Rogers (1959) which refers to the awareness of the self, to "the organized, consistent conceptual gestalt of perceptions of the relationships of the 'I' or 'me' and the perceptions of the relationships of the 'I' or 'me' to others and to various aspects of life, together with the values attached to these perceptions." (Rogers, p.200). A person's identity goes beyond an awareness of the self as a subject or an object - it includes aspects of which the individual is unaware, it also includes awareness of other people andother agents in relation not only to the self but also to other entities and other people. The difference between the concepts should become more apparent with the conceptualization of identity structure.

A further feature, more directly related to the dissonance processes discussed later, that occurs in the definitions of identity by Erikson and Laing is the recognition of a sameness and continuity in identity derived from the past and extending into the present*, and at the same time the recognition of a future orientation ("what one can anticipate that one will be" - Erikson, "as he will be at that place in the future" - Laing). The future

* There can be a problem in giving too rigid an interpretation to "sameness" and "continuity". It is, of course, not that the sameness is a sameness in all respects, but that certain aspects continue essentially the same over long periods. In general parlance, a particular tree remains the same tree though it grows from year to year, and a certain person remains the same person even though he has changed over the years. The problem of modification and

(contd.)

orientation is different from the continuing sameness deriving from the past because it faces states of being not yet in existence and, therefore, doubt exists about their nature. Thus, one may anticipate what one will be or envisage what the same being will be at that place in the future, but one cannot know. The future orientation may denote a variety of possible anticipations, a variety of becomings that might materialise, just as in the past there existed a variety of possibilities that might have been. It is a contention of this thesis that the future orientation is responsible for a mode of appraisal different from the one in relation to the continued sameness of the identity. It is an appraisal of outcomes in relation to desires, intentions and identifications contrasted with an appraisal not involving intentional orientations of the identity, but one simply in relation to the 'status quo' evaluations of the past. With both modes of appraisal, the appraisal of the present would be both in terms of the past history of the individual and in terms of his future orientations.

The essential distinction which is being drawn from the recognition of the sameness and continuity in identity and the simultaneous recognition of a future orientation, is one between that aspect of the identity which represents the continued sameness

(contd.) elaboration of identity is an essential counterpart of the problem of continuity in changing environmental situations; both are discussed in detail in this and later chapters.

of the individual and that other aspect which represents the individual's active identifications and pursuance ofintentions. Appraisal with respect to the one aspect is not necessarily the same as the appraisal with respect to the other. Appraisal with respect to his intentions may lead a person to feel that one course of action is much more effective than another, but in relation to his past evaluations of a particular individual concerned in that course of action he might feel sorry that that individual is associated even though it is this association that would be responsible for making it a success. The distinction is one, therefore, between the essentially static aspect of the identity contrasted with the essentially dynamic aspect, the two, of course, being closely related. It is the distinction that is made between appraisal of the 'external' environment in terms of 'that which I am' and in terms of 'that which I intend or that with which I identify', which parallels the familar differentiation between 'being' and 'becoming'. However, the 'becoming' is not regarded as a passive process, and the distinction between the two aspects of identity is to be formalized by referring to them as the volitional self and the modal self. The purpose of making this differentiation is to enable the two modes of appraisal to be differentiated in a corresponding manner.

With the foregoing in mind the following definitions are given:

A person's identity is defined as all that whereby he continues to be the same being* as he was in the past and as he anticipates his becoming in the future (i.e. the continuing experience of oneself being the same person), and the two aspects of identity are distinguished as:

the modal self, defined as that aspect of the identity consisting of the values, beliefs, and past experiences of the individual (i.e. the I-ness that was and continues to be); and

the volitional self, defined as that aspect of the identity consisting of the identifications and intentions of the individual (i.e. the experience of doing of one's own accord, of intending, desiring, wishing to get things done, wanting to achieve certain goals);

which two aspects together define the individual as a unique, continuing and striving entity.

Identity structure

The concept identity structure is formulated so that consideration may be given to the psychological processes involved in the transactions between the individual and his environment during appraisal and reappraisal. Identity structure refers to an abstraction with regard to the relationships existing between

* Again: the essential sameness - see previous footnote.

various component aspects of the individual's identity. It attempts: to conceptualize relationships between affective states experienced in the past by the individual in relation to various entities* and actions, and in relation to his intentions and identifications; to conceptualize beliefs and expectations in respect of these entities and identifications; and to conceptualize the matrix by which 'reality for the individual' may be ascertained in relation to 'knowledge' and 'experience'. The identity structure provides for a skeleton of interrelationships between various configurations existing in the psychological matrix which, among other features, includes configurations of ambivalent constellations of feelings with respect to certain other persons.

The identity structure is regarded as consisting of a number of interrelated systems, of which the principle ones in relation to attitude and dissonance processes are postulated as being:

(1) a system of evaluated entities and actions - a system that is a function of the person's experiences, direct or indirect, of various entities and various actions (direct, if experienced at first hand; indirect, if vicariously experienced through reports given by others or

* that is, individuals, objects, issues, etc.

through various media such as drama, the novel, newsreel, etc.) - a system that represents within the individual's identity the characteristics attributed to all entities and actions experienced by the individual;

(2) a system of bipolar constructs (as defined by Kelly, 1955, 1963) that is a function of the person's categorizing processes* in conjunction with his experiences - a system whereby entities and events within various situations are construed;

(3) a system of affective states that is a function of the person's self-referring emotional experiences - a system that represents all those experienced states of an emotional nature with which the individual would wish to identify ~~with~~ or possess on the one hand, and all those from which the individual would wish to dissociate on the other hand.

Thus, the identity structure is viewed as consisting of three closely related systems, one concerned with the individual's experiences in relation to various entities (including particular

* Bruner et al, 1956.

others) and actions*, another with the defining constructs by which situations are construed and by which the characteristics of the entities and actions are attributed, and the third with the experienced emotional states which are dichotomised between those with which the individual would wish to identify and those from which he would wish to dissociate.

In order to elucidate the kind of object differentiation as described by Smith, Bruner, and White (1956) and, in particular, the existence of ambivalent attitudes to various objects, it is necessary to consider how the above systems are related. The relationship between the entity and action system and the construct system is considered first. Then follows a discussion of the relationship between the construct system and the system of affective states from which the affective components of attitudes derive, after which the problem of emotional ambivalence with respect to certain entities and actions, which is one aspect of ambivalent attitudes**, is discussed.

* These experiences possess the quality of defining for the individual the characteristics attributed by him to the entities and actions.

**Another aspect of ambivalent attitudes occurs during appraisal when entities receiving contrary evaluations become associated - at the moment the discussion is confined to the 'ground state' of the identity structure, that is, in the absence of appraisal.

Entity and action system

As a consequence of the individual's various experiences, past appraisals and reappraisals of people and things and of actions deriving from people (including himself) which perhaps involve other people or things, the experienced entities and actions will come to have certain meanings and evaluations for the individual. Some of these entities and actions may come to have deep emotional significance for the individual, some may come to have ambivalent connotations, others may not have any special significance, and so on. But, insofar as these experienced actions and entities become registered within the psychological matrix of the individual and are attributed certain characteristics they may be regarded, in abstraction, as forming a system within the identity structure; that is to say that these experienced actions and entities with their attributed characteristics form an aspect of the individual's identity. The entity and action system within the identity structure is therefore postulated as some kind of structural representation of entities and actions directly or indirectly experienced in which their attributed characteristics exist as the fine (i.e. differentiated and elaborated) structure of the representations. The elaboration and differentiation of the fine structure of the entities and actions (i.e. their attributed characteristics) which may contain sources of emotional ambivalence

will be considered after attending to the system by which differentiating characteristics may be attributed.

Construct system

That characteristics may be attributed to various entities and actions encountered by the individual must depend on some means whereby one entity may be distinguished from another, one action from another, whereby one characteristic may be distinguished from another, so that one thing can be categorized in a particular way and distinguished from something else categorized in another way. This recognition of actions, objects, and people and their differentiation in terms of various characteristics is viewed as depending on another system. This system is regarded as containing the elements against which the processes of appraisal (e.g. the categorization processes as formulated by Bruner et al, 1956) may operate. Kelly's work on personal constructs (1955, 1963) seems to provide some of the necessary features of these elements. Kelly says that a construct is a way in which some things are construed as being alike and yet different from others. Constructs are bipolar. An example of a construct would be broad-minded - narrow-minded; for an individual possessing this construct some people may be characterised as broad-minded compared with others.

A system of constructs would therefore enable actions and entities to be construed by the individual in terms of their, for the individual, differentiating characteristics. The processes by which this is done, that is, how such constructs realize for the individual the differential characteristics of appraised entities and actions, will not be considered. It is assumed that such processes do operate, but the problems of how they operate will not be taken up, except to state that though a system of constructs is regarded as providing the necessary elements against which the processes of appraisal can operate, yet the ontogenesis of the system is itself an elaborate and continuing process. The way such a system of constructs evolves for an individual will depend on the individual's experiences of others, of the cultural environment, etc.

Thus, by way of such a system of constructs entities and actions may be appraised by the individual as possessing certain characteristics in the sense that these characteristics come to the immediate notice of the individual during the process of immediate (and what would be called "intuitive") appraisal. Considered as an experience which becomes established within the individual's psychological matrix such appraised characteristics, given sufficient pressures* for their establishment arising during

* Discussion of the pressures operating during appraisal and reappraisal will be found in the course of subsequent chapters.

the appraisal, will become attributed characteristics or properties of the action or entity in question.

For an individual possessing the construct tall-short another person may be appraised as being tall, and if sufficient pressures arise during that appraisal the characteristic of tallness will become attributed to that other person within the individual's psychological structure. A kiss may be attributed the characteristics of affection or the connotations of fraudulence by a child depending on whether it is construed as spontaneous affection given by its mother or as a cursory act conditional on "being good", such a construction operating against a system of constructs that enables such differentiation possible. The constructs may not exist at a level of overt awareness -- in the example just given the child is most unlikely to have an explicitly named construct of "affection" versus the particular kind of fraudulence cited, yet experientially he will be able to differentiate the two types of kiss. Such an ability to differentiate between the complex distinctions of affection and fraudulence will undoubtedly depend on an equally complex set of more primitive constructs. It is assumed that the essential differentiating aspects of constructs may exist before the constructs become semantically labelled.

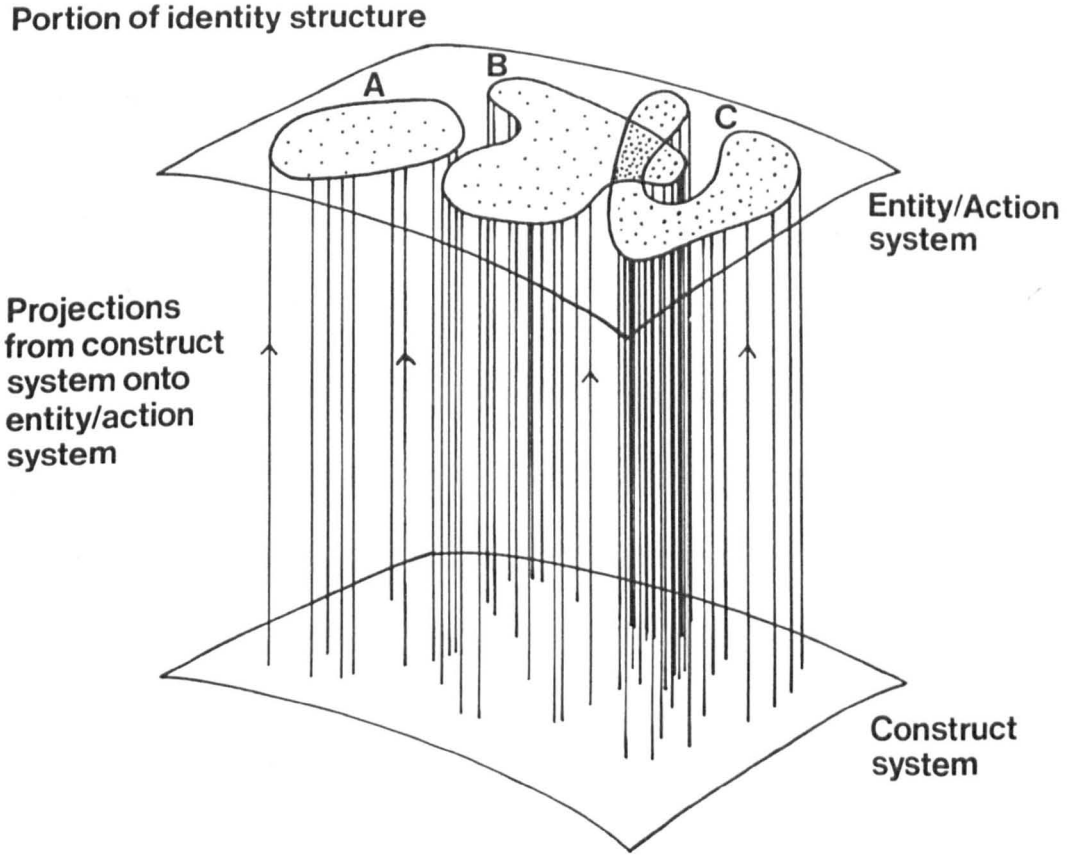
The construct system is the means by which the interaction between self and environment may be appraised (or construed in Kelly's

terminology). The characteristics of an entity or action become incorporated into the individual's identity structure as attributes of the entity or action. In many respects it is just these attributes that distinguish one entity from another, and one action from another. These attributes may be envisaged as projections of the constructs on to the entity and action system within the identity structure. Different entities would be distinguished by different sets of projections. Similarity between entities would be established when considerable overlap of projections appertaining to these entities occurs. Certain entities regarded by an individual as similar in some respects but differing in others would have projections from the construct system in common corresponding to the characteristics of the entities regarded as similar, but would at the same time have disparate projections corresponding to the dissimilar attributes (see visual interpretation: fig. 5.1).

The relationship between the entity and action system and the construct system is one therefore deriving from connections between the constructs and the entities and actions by way of the projections from the construct system on to the entity and action system. The strengths of these connections may be considered as representing the strengths of the beliefs that the individual has about the actions and entities which have become part of his identity

structure. These beliefs will determine future expectations in respect of these actions and entities.

Figure 5.1
A visual interpretation of the relationship between the construct system and the entity/action system



3 entities (or actions) A B C are represented. The attributed characteristics of the entities are made up of projections from the construct system. Where these projections overlap, as with B and C, the entities share similar attributes. The strength of the connections between the constructs and the entities represent the strength of beliefs concerning the attributes. Each entity which can be distinguished from another entity will have a structure of projections differing in at least one attribute

System of affective states

Ultimately the emotional significance of the individual's experiences are of fundamental importance for a discussion of attitudes. Knowing the world in terms of emotional experiences deriving from his interactions with other people and with the changing environment encountered by him, is perhaps of more primary importance to the individual than is the knowledge derived from the "epistemological" operations involved in establishing cognitive schemata with respect to intellectual functioning (c.f. Piaget, 1951, 1952a, 1952b, 1954). That intellectual functioning is seriously retarded when knowing the world in terms of emotional experiences gives the individual a distorted and terrifying knowledge of the world, is amply illustrated by such work as Bettelheim's with emotionally disturbed children (e.g. Bettelheim, 1950). That the two aspects of knowing (cognitive/intellectual knowledge versus knowledge in terms of emotional experiences) can be in conflict is a frequent observation which has been formalized by McGuire (1960), in his distinction between the psychological processes operating towards logical consistency and the "consistency" of rationalization and wishful thinking (see Chapter 2 of this thesis). However, whilst it is recognized that "intellectual knowledge" (cognitive schemata and the intellectual operations described by Piaget) and "emotional knowledge" are of a

qualitatively different type and may frequently be in conflict, yet it is also recognized that there exist similarities in the psychological processes operating with respect to the two types. Both presumably involve the processes of categorization (Bruner et al, 1956), both involve assimilation of the new (new cognitive schemata, new emotional experiences) and accommodation of the old (e.g. Piaget, 1951, 1952a, 1952b, 1954; Flavell, 1963; Bruner et al, 1966; assimilation and accommodation in the cognitive processes). Assimilation and accommodation feature in the discussion of reappraisal in Chapters 7, 9, 10 and11, where some of the pressures due to past experienced affective states are considered. An important distinction between assimilative and accommodative processes in relation to cognitive schemata and similar processes in relation to affective states, is that the latter concern "knowledge" (experience) of internal states (i.e. self-referring emotional experiences) whereas the former concern knowledge of the external environment, even though this is with reference to the self. The distinction is that emotional experiences are internal states of the self, whereas features of the external environment are not, only the self's relationships to them are. Thus, it is maintained that although similarities exist between psychological processes involved in the cognitive knowing of the world and those involved in the emotional knowing of the world, the distinctions that remain are fundamental.

The system of affective states is regarded in abstraction as a system that represents all those experienced states of an emotional nature with which the individual would wish to identify on the one hand, and all those from which the individual would wish to dissociate on the other. It is regarded as the individual's emotional knowledge of the world, and thus as a system that is intimately related to the entity and action system within the identity structure through the experiences surrounding entities and actions previously encountered or engaged in. These attributed properties of the various entities and actions (deriving from previous appraisals) are, it has been postulated, related to the construct system by way of projections from that system on to the entity and action system. Thus by this analysis the system of affective states is closely related to the construct system, and the relationship is here conceptualized such that the poles of the evaluative components of the bipolar constructs are considered as being the loci of experienced affective states. It has already been pointed out that the constructs need not be semantically labelled, only that they provide the elements by which differentiation between "experienced" characteristics (including evaluative characteristics) occurs during the appraisal of situations encountered. Even if they are semantically labelled, the semantic labels are not themselves the constructs and give only approximate verbalization of the constructs.

With the poles of the evaluative components of the bipolar constructs* conceptualized as being the loci of experienced affective states within the individual's identity structure it follows that one set of poles may be regarded as the loci of experienced affective states with which the individual would wish to identify, and the other set of poles to obnoxious affective states from which the individual would wish to dissociate. Such constructs would therefore be evaluative in general, hence would also the projections from them on to the entity and ~~construct~~ action system be evaluative, and so follows the relationship between attributed evaluative characteristics of entities and actions and the system of affective states. The strength of the connections between the constructs and the entities or actions (i.e. the strength of the projections from the system of constructs on to the system of entities and actions) would represent the beliefs (or "strengths of feeling") with respect to the evaluative attributes. Such an evaluative attribute may be intimately related to an experienced affective state (experienced, for example, with a particular person) or it may have strong affective associations indirectly as a projection of a construct which is itself intimately related to some (past) experienced affective state.

* The discussion here is restricted to constructs with evaluative components.

Object differentiation and ambivalence

Object differentiation (Smith, Bruner and White, 1956) may be seen in terms of the characteristics attributed to a particular object, the greater the number of attributed characteristics the greater the object differentiation. The discussion of ambivalent feelings with respect to certain entities ar actions is illustrated with a visual interpretation of the relationships between the construct system, the system of affective states and the action/entity system (see Figure 5.2 - note elaboration on Figure 5.1).

An entity or an action, such as B or C in Figure 5.2, may possess both positive and negative attributes for the individual. Since the positive attributes are ultimately related to certain affective states with which the individual would wish to identify, and since the negative ones are ultimately related to affective states from which the individual would wish to dissociate, the entity (illustrated schematically exploded into two corresponding parts) is the locus of incompatible affective tendencies (to identify with and dissociate from in relation to the same entity). Such incompatible tendencies would give rise to pressures of dissociation. However, if the "external" pressures* during previous

* i.e. pressures that derive from the nature of the "external" situation, as it is appraised against the construct system.

appraisals were originally sufficiently strong for the attributes to be established, there exists no resolution of the incompatibility except by an evaluative redefinition of the attributes or corresponding constructs. This is because the entity with its attributes is an established part of the identity structure, hence the existence of ambivalent feelings with respect to such an entity - and the love-hate ambivalence in relation to certain particular others. This kind of ambivalence will later be characterized as involving "bound" dissonance (see Chapter 7).

Figure 5.2
A visual interpretation of the relationships between the construct system, the system of affective states and the entity/action system

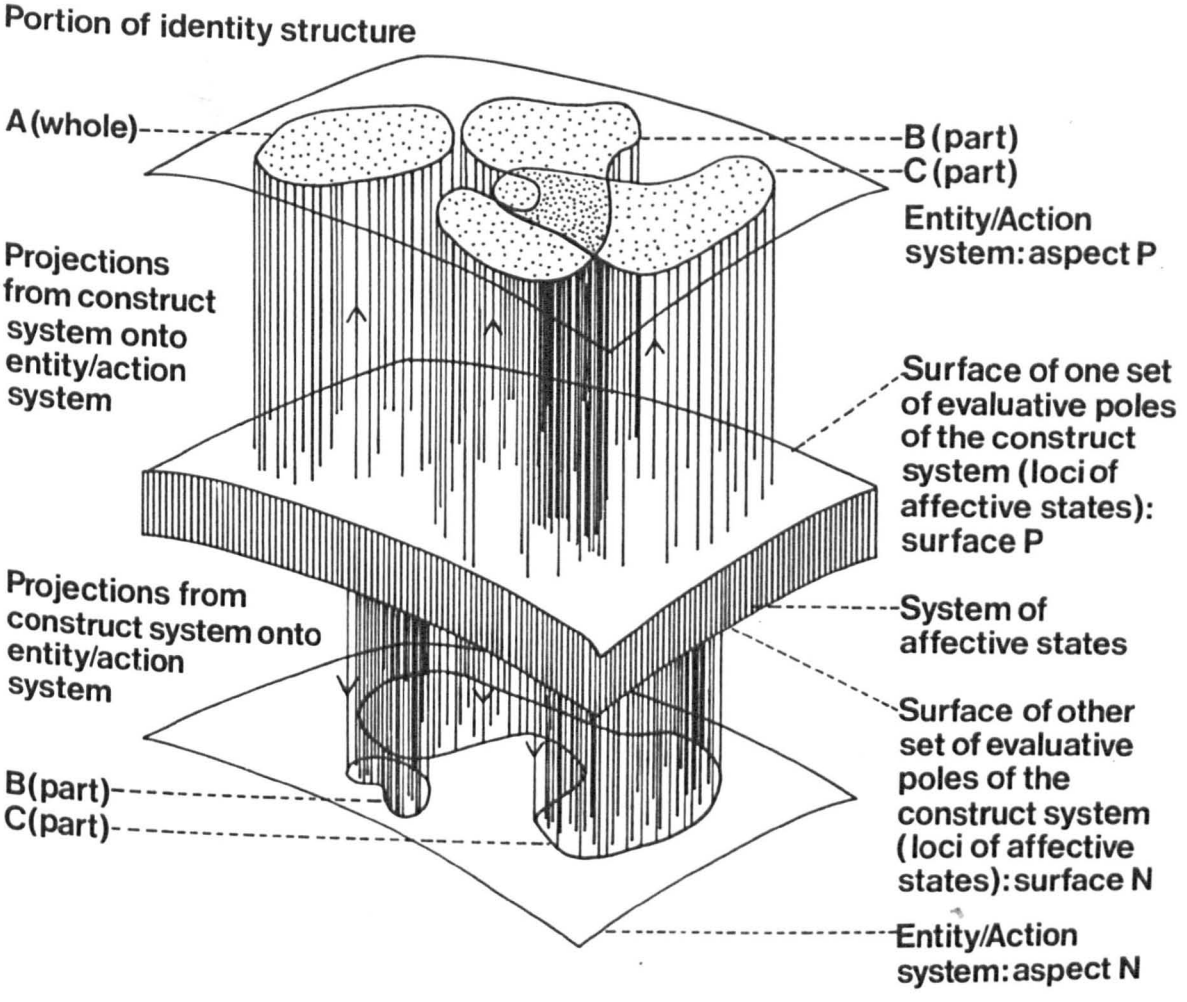


Figure 5.2 (Contd.)

Surface P of the loci of affective states represents those experienced affective states with which the individual would wish to identify. (P refers to: positive states)
Surface N represents those experienced affective states from which the individual would wish to dissociate (N refers to: negative states)

Aspect P of the entity/action system represents the positive attributes in that system. Aspect N represents the negative attributes in the entity/action system.

The three entities (or actions) A, B and C are schematically represented as they are split between their positive and negative attributes (i.e. projections from the positive and negative poles of the construct system - the strengths of the beliefs about the attributes are regarded as being associated with the strengths of these connections).

Entity A is represented as having wholly positive attributes. Both B and C are indicated as having positive and negative attributes, thereby signifying ambivalent feelings in relation to the entities B and C. It will be noted that, in this example, B and C have certain positive attributes in common, but do not share any negative attributes. The degree of ambivalence with respect to B and C will depend on the proportion and the strength of negative to positive attributes.

At this stage it will be useful to restate the essentials of the concept of identity structure before going on to consider certain necessary refinements. The three parts of the identity structure that have been conceptualized are the entity and action system, the construct system, and the system of affective states. The entity and action system has been described as a system which consists of the entities and actions and their attributed characteristics which have been directly or indirectly experienced by the individual. The attributes associated with these entities and actions are connected to the construct system by way of projections from the latter on to the entity and action system. Such projections and their strengths depend for their establishment on the pressures arising during appraisals of the various entities and actions. The strengths of the projections correspond to the beliefs and hence future expectations regarding the attributed characteristics of the entities and actions. The differentiation of characteristics during appraisal and the pressures arising for their establishment as attributes of entities and actions depend on the construct system, thoughother possibly conflicting pressures not dependent on the construct system generally operate in addition.* Constructs are not necessarily semantically labelled, but are elements which enable differentiation for the individual during appraisal.

* See chapters on reappraisal - Chapters 7, 9, 10,11.

Semantic labels may be regarded as approximate verbalizations of the constructs. Constructs which are intimately linked to experienced affective states are regarded as evaluative. The loci of the poles of the constructs are regarded as being closely related to the system of affective states which is dichotomized into those experienced affective states with which the individual would wish to identify and those from which he would wish to dissociate. The relationships between the three systems have been used to conceptualize emotional ambivalence with respect to certain entities and actions*. The incompatibility this ambivalence denotes in terms of links, embodied in the same entity or action, with affective states the individual would wish to identify with and other affective states from which he would wish to dissociate, is constrained by pressures arising from the appraisals which have established for the individual the attributes in question. Anticipating later discussion such ambivalence is characterized as involving "bound" dissonance.

It will be useful, at this stage, to refer to certain necessary refinements of aspects of the identity structure. One concerns the overall evaluations by the individual of various entities and actions as they are part of his identity structure. This is discussed first.

* For example, this may be the ambivalence towards a certain significant other person who appears, to the individual, as both loving and hostile, that is, the other person has been and continues to be experienced as both loving and hostile. Another kind of ambivalence may arise during immediate ("intuitive") appraisal of certain relationships in a particular situation.

Entity and action evaluation

It is important to consider the overall evaluation of an entity (a particular issue, another person, an object, etc.) or an action because of its relationships to other evaluated entities or actions, as these relationships may be appraised to exist in various situations. Such an overall evaluation may be considered as a kind of not necessarily stable resultant of the various evaluative attributes appertaining to the particular entity or action in question, as they are attenuated by corresponding beliefs (i.e. by the strengths of the projections from the construct system on to the entity/action system). Thus the overall evaluation of an entity within the identity structure corresponds to the total structure appertaining to the particular entity as it is made up of a "fine structure" of attributes together with their connections of varying strengths to various affective states by way of the system of constructs. Such an elaborated structure appertaining to a particular entity will be referred to as an entity structure.

Cognitive components

It may help the discussion to clarify the position of cognitive components in relation to the present analysis. "Cognitive components" or "aspects" usually refer to beliefs or expectations about an entity or an action (see discussion on the definition of attitude in Chapter 1). Here, beliefs are defined by the strength

of the projections from the system of constructs on to the entity/action system, and refer to the beliefs that certain attributes characterise certain entities or actions. However, it has already been emphasized that differentiating constructs may exist before they become semantically labelled and that, in any case, the semantic labels refer merely to (learnt) verbalizations of the constructs and not the constructs themselves. Therefore the semantic labels may not be accurate indicants of the constructs. Hence it is quite possible for an attribute (which may be very emotionally charged - i.e. strongly anchored in some portion of the system of affective states) to be a projection from an ill-defined or semantically unlabelled construct. If this is the case, such an attribute (i.e. the projection) cannot be verbalized and hence neither can the belief (i.e. the strength of the projection). In other words, an individual may have strongly emotional feelings about something or someone and be able to verbalize them only inaccurately and inarticulately or perhaps not at all. In this case he may have no "understanding" of his own feelings even though he has "subjective awareness". Tentatively, then, it would seem appropriate to refer to beliefs about attributes as <u>cognitive components</u>, with the proviso that some such "knowledge" about certain attributes (together with the attributes themselves) may be of an inarticulate form (sometimes expressed as an "intuitive feeling").

Constructs

Another refinement of the conceptualization of identity structure concerns the veridicality, the ambiguity, and the resilience of the constructs within the construct system. The issue at stake has to do with the appraisal process in which the construct system plays a prominent role, namely being the system against which the appraisal process operates in differentiating for the individual characteristics of the situation being appraised. Pressures that arise to induce reappraisals of past configurations within the identity structure will depend in part on the resilience of constructs against internal distorting pressures. If a particular construct allows substantial ambiguity of construal, construal favouring internal pressures is likely to result. If the veridicality of a construct is poor distorted appraisal will follow when that construct is in operation. The veridicality, the ambiguity, and the resilience of constructs will depend to a substantial degree on their ontogenesis.

Although it is clearly impossible to consider the ontogenesis of constructs in any detail, depending as it must on a complex interplay of experience and learning from the first days of life onwards, the following is a brief discussion of some of the features of the identity structure which could have a bearing on the degree of ambiguity and the degree of resilience of the constructs.

Not much will be said about the veridicality of constructs except to point to the literature on psychopathology for evidence that even quite ordinary situations can be grossly and emotionally distorted by individuals. The lack of veridicality can frequently be traced to the various unpleasant emotional experiences suffered by the individual and the effect of them on subsequent construals of various personal relationships, etc.

Ambiguity of constructs

When it comes to ambiguity it is noted that constructs have classificatory properties, from which it is possible to indicate one way in which ambiguity of constructs may arise. A construct enables classificatory characteristics to be attributed to various entities and actions as has previously been described. Certain portions of the construct system may be considered as providing the elements by which a constellation of innumerable items which share major ("defining") characteristics in common are mapped within the identity structure. Such a constellation of items within the entity and action system may be termed a "universe". One such universe of primary importance to the individual will be the universe of particular others, comprising the individual's experiences of particular other persons as they feature, with all their attributed characteristics, as part of his identity. This universe

of particular others may be conceptualized as mapped by the projections from a matrix of constructs on to all members of that universe in the entity and action system, the constructs being those to which the attributed characteristics of the members are anchored*.

It is when certain constructs are common to more than one universe of items in the entity and action system that ambiguity is likely. (Other universes may include: the universe of social institutions - the School, the Government, the Health Service, etc., the universe of actions, the universe of states of being, the universe of objects, etc.) It is unnecessary to consider the various classifications and their possible extent and overlap, except for their development in relation to constructs common to more than one.

* As an illustration of what is meant by mapping the following limited example is given: the universe of particular others can be mapped by the various constructs possessed by the individual in relation to these particular others. To take only three particular others of significance to the individual: one person, Jill, may be melancholic, quick-tempered, intelligent, attractive, sad, and have fair hair - these being the attributes of the Jill that forms part of the individual's identity; another person, Jack, may be, for the individual, tall, fair, intelligent, narrow-minded, mean, and reserved; the third, John, may be small, dark, cheerful, dim-witted, and generous. The constructs that map those three particular others in the individual's identity structure would be male - female, melancholic - vivacious, quick-tempered - calm, intelligent - dim-witted, attractive - unattractive, sad - cheerful, fair-haired - dark-haired, tall - small, narrow-minded - broad-minded, mean - generous, reserved - spontaneous.

(contd.)

During the ontogenesis of the identity structure the various universes will have evolved by way of at least two interacting processes, these two being one in which elaboration of an universe continues during repeated appraisals of member entities against constructs already existing, the other in which incorporation of member entities is by indirect means (e.g. through teaching, reading, etc.) followed by the establishment of corresponding differentiating constructs. Various constructs therefore derive from the universes, as well as entities in the universes being differentiated by others. Because of identification through semantic labels seemingly similar constructs may vary in meaning when they are related to different universes, even though they have the same label. Thus 'aggressive' may be positively evaluated when applied to a well-liked politician who argues his case strongly in debates, but negatively evaluated when applied to a nation.[1] The construct 'aggressive - unaggressive' changes its meaning in relation to the universe of politicians compared with the universe of nations. This kind of ambiguity in their semantic labelling may then result in ambiguity of the constructs themselves, so that, for example, any of the connotations of the

(contd.)

[1] As stated above this is a very limited example. Evaluative constructs are conceptualized as closely linked to the system of affective states. As previously emphasized the semantic labels are merely learnt verbalisations of the constructs, not the constructs themselves.- of which certain ones may be unverbalized.

construct 'aggressive - unaggressive' may feature as the element against which a certain appraisal operates, the particular connotation being one that may well favour other "distorting" internal pressures.

Resilience of constructs

An appraisal of a situation depends on the construct system. The degree to which an appraised aspect of a situation is resilient against varying interpretations or even denial of its existence will depend on the resilience of the constructs in question. If a construct lacks resilience the appraised aspect of a situation may be denied its relevance if that aspect is not readily acceptable to the individual. However, if the construct is highly resilient the pressures deriving from the appraisal will tend towards recognition of the appraised aspect even when unpalatable. The resilience of a construct is therefore related to its reliability during appraisal. The greater the resilience, the greater will be the reliability that the appraised aspect will receive due recognition by the individual.

However, though it may be reliable in an objective way, such resilience can be of a pathological nature, as when a construct high in resilience is low in veridicality and gives rise to highly reliable (for the individual) but pathological appraisals. Pathological resilience may be discovered in resistance to attempts

by others to rectify the lack of veridicality in an individual's appraisal.

A possible explanation of the high resilience of a construct may be that it plays a central role through its relationship to certain affective states and its multiple connections to many items within the entity and action system. The system of affective states and the entity and action system may be responsible for anchoring a construct in a highly rigid way, and for such a construct to change its defining connotations, many connections would have to re-form.

The refinements in the conceptualisation of identity structure have focussed on such issues as: the overall evaluation of an entity in the psychological matrix of the individual's identity, considered as the resultant evaluation of attributed characteristics within the entity structure; the place of beliefs and expectations together with their cognitive aspects within the identity structure; the veridicality, ambiguity, and resilience of constructs.

With the aid of these refinements it becomes possible to discuss more complex relationships such as those between certain evaluated entities and certain other evaluated entities, between certain entities and various evaluated actions, or states of being, etc. In other words it becomes possible to discuss the relationships between evaluated items within the identity structure which are

members of different universes in the entity and action system, with consideration being given to the nature of the evaluations as they derive from the system of affective states. Much of the discussion in later chapters will consider entities and actions in terms of their global evaluations and the relationships that hold between them.

The description of identity structure that has thus far been given is that of what may be termed its unactivated state, that is, unactivated with respect to transactions with the 'external'* environment. What has been described so far may be regarded as an elaboration of the identity structure in its ground state, by which is meant that processes function in the maintenance of the structure with ground state energy in contrast to the further mobilization of energy resources attending an excited state of the identity structure. An excited state may be one of anticipatory appraisal, immediate appraisal, reappraisal, reflective reappraisal, or decision making, etc. Part (ii) of this chapter is concerned with processes that maintain the configuration of the identity structure in its ground state (unactivated with respect to transactions with the external environment)**.

* The object of appraisal, the situation being appraised.

** The distinction which is being drawn between a ground state and an excited state is to emphasize the distinction between a "resting" state and an "active" state of appraisal, etc. However, it is also emphasized that processes operate in the resting state hence the reference to ground state energy.

Part (ii)

Psychological efficiency

From the rationale that is presently to be given are derived the hypotheses which are central to the thesis. Whether or not this rationale is valid in detail is not important provided that the hypotheses deriving from it can be validated to a reasonable extent. The rationale attempts to account for the stability of the complexities of the identity structure, whilst at the same time providing for the development of the identity structure and attendant modification of the structure. Later, it will be used to provide an explanation of dissonance processes (dissonance reduction, decision making, etc.) which does not depend on the principle of consistency or on any motivating properties derived from such a principle (i.e. it does not depend on viewing dissonance as a drive - Festinger; or imbalance as motivating - Heider, Cartwright and Harary, Rosenberg and Abelson, etc; see Chapters 2 and 3).

The stability of the identity structure depends on the stability of the "connections" which make up the intricate fine structure of entities and actions with their attributes, and which consist of established relationships between the entities and actions with their complex cross connections between various universes of items, and the relationships between entities and actions to the construct system and the system of affective states. Many of these connections denote beliefs and expectations about attributes, about

relationships between one thing and another. Especially important are those connections with the system of affective states from which evaluative characteristics of attributes, of entities and actions, and the relationships between them are derived.

The rationale is first applied to the stability of connections in the identity structure, that is, it is first applied to the ground state processes operating within the identity structure in its resting state. Later the rationale will be applied to the excited state of the identity structure when transactions (which may be only symbolic ones*) with the environment occur which may involve dissonance. The emphasis in the remainder of this chapter is on the active processes which are in operation during the ground (resting) state. The operation of additional processes in the excited state receive attention in the following chapters.

The rationale assumes a general state of activity in the mind in terms of ongoing processes in the identity structure which can lead to the possibility of connections being "tentatively" approached and quickly rejected unless strong adherence results in a stable connection. Such strong adherence could be the result of certain predisposing characteristics of elements of the fine structure. But in general the pervasive state of activity is assumed to lead to the rapid dissipation of connections unless they are stably formed.

* Such as anticipatory appraisal or reflective reappraisal.

The stability of connections is assumed to depend on considerations of strengths of binding and the strains affecting the binding. If the strengths of binding are small the connections will be weak and, it is assumed, may be readily dissipated through the general effects of the pervasive activity. However, it is also assumed that even strong connections would suffer dissipating effects for the same reasons as the weak ones unless processes operate to counteract the dissipating effects. In other words, it is assumed that processes actively operate so that stability of established connections continue.

The state of pervasive general activity may be related to dreams or "mind-wandering" with well sensitized features of the identity structure in prominence. It may be related to the working through of traumatic experiences during which new connections that help control the experiences are made, or to the formation of "phantasy" connections with corresponding wishful thinking. Such connections may become stably bound because of a readiness in the state of the identity structure to receive them. However, in general it is just as likely that they be dissipated through the pervasive ongoing activity.

The rationale proposed here is that energy is bound in the identity structure such that it constrains the structure against dissipation, and that a continuing influx of energy counteracts the

dissipating tendencies and maintains the binding energy, thus providing the continuing stability of established connections.

The energy invested in the established connections (i.e. the binding energy) is assumed to be the result of transactions with the external environment* which have been responsible for their establishment. The processes involved in these transactions and in the establishment of connections are examined in later chapters on appraisal and reappraisal. The magnitude of the binding energy is considered to be a result of pressures arising from these processes. The maintenance of binding energy, however, is considered to be the result of other processes that actively operate to counteract dissipating effects so that continuity of established connections remains.

According to this rationale the energy system of the identity structure would have to be an open system, that is, one which allows for the continuing influx of energy into the system, and is to be distinguished from such closed systems as postulated originally by Freud in which conservation of energy is maintained. Even in the ground or resting state of the identity structure there is assumed to be a continuing influx of energy to maintain the connections against general dissipative effects**.

* external environment in its widest sense, i.e. eating, bodily care, etc. in infancy, right through to the complexities of the total physical and social environment.

** It will be seen shortly that any disturbance of any portion of the identity structure is controlled by processes that entail the mobilization of further energy, and the influx of energy into

(contd.)

In thermodynamic terms this is equivalent to saying that the continuing influx of energy which maintains the organized state of the structure prevents a gross increase in entropy that would accompany the disintegration and disorganization of the identity structure.

The rationale given here for the stability and continuity of connections has emphasized the continued sameness of the identity or the modal self aspect of the identity. The modal self, it will be remembered, was defined earlier in the chapter as that aspect of the identity consisting of the values, beliefs, and past experiences of the individual. The same rationale will now be extended to the future orientation of the identity or the volitional aspect of the identity which was defined as that aspect consisting of the identifications and intentions of the individual*.

Extended to the volitional self aspect of the identity, the rationale is that energy is bound in the identity structure such that it sustains intentions and identifications against dissipation through general pervasive activity, and that a continuing influx of energy counteracts the dissipating tendencies, thus providing the continuance of the intentions and identifications.

(contd.)

identity structure. In addition it is assumed that the formation of a new connection requires the mobilization of binding energy, and thereafter a continuing influx of energy to maintain the connection against dissipative effects.

* The modes of appraisal operating within the modal self and the volitional self aspects of the identity receive detailed attention in Chapters 10 and 11 respectively.

The essential feature of the rationale is that energy is assumed to flow into the system in order to counteract dissipating tendencies. Under the optimal conditions of the ground state of the identity structure the dissipating tendencies are assumed to be due solely to the pervasive activity within the mind. However, the rationale is also to be applied to states of the identity structure which are not optimal in regard to dissipating tendencies. Such states, which are to be termed excited* states, may result in disturbances within the identity structure in the form of strains on existing connections (modal self) or stresses on existing intentions and identifications (volitional self). These disturbances can threaten disintegration of the connections, intentions and identifications to a much greater degree than the dissipative effects existing under optimal conditions. However, adopting the rationale above and applying it in the same way to the disturbed state, it follows that processes tending to conserve the existing connection, intention, or identification would operate and that the accompanying additional mobilization of energy would tend to counteract the disturbance.

An important feature of the above conceptualization is that much of the energy system acts in an inhibitive way. Under optimal conditions the energy system operates to inhibit the dissipation of

* The excited states of appraisal and reappraisal which may result in a disturbance will be distinguished later from other states of the identity structure to be termed sub-excited states in which disturbances continue to be bound within the structure.

organization within the identity structure. Under conditions of disturbances threatening aspects of the identity structure, the energy system also operates in an inhibitive way, again tending to conserve the organization of the structure. It follows from the rationale above that such an inhibitive system as described would involve a fairly massive and continuing influx of energy, especially when disturbances threaten existing organization within the structure. It would also seem to follow that without the massive inhibitive action of the energy system, the organization of the identity structure would undergo violent and rapid uncontrolled changes which would probably result in the disintegration of the structure.

These ideas are fundamental and central to the thesis. They provide a rationale for the conservative nature of the identity structure, that is, the conservation expressed in the continued sameness of the self, including the future orientation of the self (though to a lesser extent because of the greater effect of transactions with the environment as the future becomes present). Changes which occur in the overall configuration of the structure tend to take place slowly over months or years (e.g. he is maturing; he is getting worse than he used to be - with the implication that his main characteristics remain much the same). Such slow overall changes in the presence of a great many interactions with other people and the environment generally, provide a big clue

to the massive control invested in conserving the identity structure. Naturally, more minor changes in the fine structure occur frequently and rapidly (as, for example, learning new attributes, solving problems, making new friends, etc.) but these occur in a highly selective and controlled way, and do not simply replace or destroy existing portions of the identity structure. Thus conservation and control within the identity structure is identified with an inhibitive energy system.

An important corollary to the rationale presented above is that, in view of the fairly massive demands on energy resources it postulates, such a contrd system would have to operate efficiently with respect to the energy resources available. Optimal efficiency of maintaining a portion of the identity structure, given the rationale, occurs in its ground state when the continuing influx of energy into that portion counteracts only the dissipating tendencies of the general pervasive activity. Any additional mobilization of energy (attending a disturbance in the portion of identity structure occurring as a possible consequence of an excited state) will result in an efficiency of maintaining the part structure which is less than optimal. The greater the additional mobilization accompanying a greater disturbance, the further away from optimal will the efficiency of maintaining the part structure become. However, the above corollary states that

the control system would have to operate efficiently with respect to the energy resources used, from which it follows that there must operate a process tending to maximize the efficiency of maintaining the part structure in question.

To maintain the disturbed portion of the structure in exactly its existing configuration would require all the additional mobilization of energy, with attendant low efficiency of energy consumption. But, if the part structure would go some way to accommodate to the disturbance (hence reduce the extent of energy mobilization attending a diminished disturbance) the efficiency of maintaining the accommodated structure would be greater. It will be assumed that such a process of controlled accommodation is one consequence of the process tending to maximize the efficiency of maintaining the part structure. It should be noted that, though the part structure suffers accommodation, it nevertheless does not disintegrate, but continues to be maintained in a somewhat modified form.

Such a process of accommodative change in configuration of a part structure suffering a disturbance derives naturally from the rationale concerning energy considerations of the stability and continuity of the identity structure presented above. Other possible consequences* of the operation of the process tending to

* such as distortion of the situation, etc. being appraised, or the denial of the relevance of aspects of the situation, etc.

maximize the efficiency of maintaining a part structure will receive attention in the course of the following chapters. In the next chapter a relationship between maximizing efficiency and dissonance reduction will be postulated.

As well as the process tending to maximize the efficiency of maintaining the identity structure, there is another process which also follows from the corollary, cited before, that the control system would have to operate efficiently with respect to the energy resources available. The state of the identity structure is different for this second process compared with the first one of maximizing efficiency. The state of the structure in the first case is one in which a disturbance results in the mobilization of additional energy. In the second case the individual is confronted with a choice situation of potential alternative disturbances of varying degrees to the identity structure. The process that follows from the corollary for this state of the structure is a decision process that operates at maximal efficiency between the alternative disturbances. After such a process has operated at maximal efficiency the process of maximizing efficiency is likely to follow resulting, perhaps, in accommodative change in configuration of the part structure suffering the disturbance that remains. The phases of the decision process are considered in detail in Chapter 8.

The formal hypotheses corresponding to the preceding discussion are now presented:

Hypothesis 5.1: The inhibition of dissipating tendencies affecting connections, intentions and identifications within the identity structure is accompanied by the continuing influx of energy under optimal conditions. The energy in question counteracts the dissipating tendencies due to pervasive general activity, maintains the organized state of the structure and sustains intentions and identifications within the structure.

This hypothesis refers to the ground or resting state of the identity structure.

Hypothesis 5.2: When any part of the identity structure suffers a disturbance additional mobilization of energy accompanies the inhibition of disintegrating tendencies affecting connections, intentions and identifications within the part of the structure affected. The additional mobilization of energy tends to counteract the disturbance suffered by the structure.

This hypothesis refers to disturbances which may arise during an excited state of the identity structure, that is, during an actual or symbolic transaction with the "external" environment.

It should be noted that hypotheses 5.1 and 5.2 apply to both the modal and volitional aspects of the identity structure.

The following definition expresses the state of affairs concerning the efficiency with which connections, intentions and identifications are maintained with respect to any part of the identity structure suffering a disturbance. The definition is named psychological efficiency to indicate a state of affairs which is essentially psychological rather than one which refers to absolute efficiencies in relation to energy mobilization.

Psychological efficiency is defined as the ratio:

$$\frac{\text{influx of energy to part structure under optimal conditions}}{\text{total influx of energy to same part structure under conditions of disturbance}}$$

According to this definition psychological efficiency becomes 100% in the absence of any disturbance to the part of the identity structure in question, that is, when the efficiency of maintaining the structure is optimal. With the additional mobilization of energy during disturbances psychological efficiency falls below 100% and the efficiency of maintaining the structure is, of course, no longer optimal.

The following two hypotheses concern the efficient operation of the control system with respect to the energy resources available:

Hypothesis 5.3: In general, processes operate tending to maximize psychological efficiency.

Hypothesis 5.4: Given the existence of alternatives confronting the individual, a decision process will operate at maximal psychological efficiency.

Having now developed the major concepts for the remainder of the thesis, it may be instructive to apply some of them immediately. An illustration in terms of a disturbance continuing within the identity structure will serve toshow the interrelationships of the action and entity system, the construct system and the system of affective states of the identity structures, and the energy considerations involved.

The disturbance bound within the identity structure may have been a result of a traumatic event or of an experience of a lesser nature. As an example, the disturbance in an individual's identity structure may have originally arisen as a consequence of an appraisal in which a person (termed "particular other" to distinguish from the individual) much liked by the individual is observed to be associated with an action from which the individual, himself, strongly dissociates.

The reason why such an appraisal should result in a disturbance of the identity structure is ultimately to be found, following the conceptualization presented in this chapter, in the system of affective states. A person much liked by the individual is, within the entity and action system of the identity structure, an entity structure of which the overall evaluation is a resultant of the various evaluative attributes appertaining to that structure (see the discussion of entity and action evaluation earlier in the chapter). Such evaluative attributes will be intimately related to the system of affective states (see Figure 5.2). It therefore follows that the entity structure of the much liked particular other is made up of attributes which are predominantly associated with affective states with which the individual would wish to identify.

In an analogous way the action, with which the particular other is associated but from which the individual strongly dissociates, will be made up of attributes predominantly associated with affective states from which the individual would wish to dissociate.

The association of the action with the liked particular other is therefore ultimately an incompatibility of affective states for the individual, those affective states with which the individual would wish to identify being indirectly associated with those from which he would wish to dissociate (c.f. the discussion of object

differentiation and ambivalence earlier in the chapter). Thus it is the emotive incompatibility that is ultimately regarded as providing the energetics for the disturbance, though, of course, for the individual it is the action of the particular other that is responsible for the disturbance.

That the particular other's action was not denied or otherwise interpreted during the original appraisal (possible consequences of the processes tending to maximize psychological efficiency) will have depended on the resilience and unambiguous nature of the constructs against which the appraisal occurred (c.f. the discussion on constructs, especially with regard to their resilience and ambiguity, earlier in the chapter).

The binding of the "disturbing" connection between entity and action, the connection having been established by pressures of appraisal arising from the resilience and unambiguity of the constructs involved, therefore results in an elaboration of the identity fine structure and also in the introduction of a continuing disturbance which derives its energy ultimately from emotive sources.

Hypothesis 5.2 states that when any part of the identity structure suffers a disturbance, additional mobilization of energy accompanies the inhibition of the disintegrative tendencies affecting the portion of the identity structure in which the disturbance is localized, which, in the example, consists of the entity and action

structures and the relationship (connection) between them. According to hypothesis 5.2, therefore, the additional mobilisation of energy accompanies the processes tending to conserve the existing connections within the entity and action structures as well as the existing connection* between those structures. Assuming that (in keeping with hypothesis 5.3 that processes operate tending to maximize psychological efficiency) the part structure in question has accommodated some way to the original disturbance within the limits imposed by the binding pressures of the original appraisal, the remaining (and continuing) disturbance will have resulted in a continuing low psychological efficiency of maintaining the disturbed part structure. The continuing low psychological efficiency is, of course, the effect of the continuing use and dissipation of energy mobilized to counteract the disturbance. As the energy is used to conserve the structure it is dissipated in combating the disintegrative effects of the disturbance which, as has been argued, derives its energy from emotive sources.

* This is the one which is referred to above as the "disturbing" connection, i.e. responsible for the disturbance. However, this isjust a matter of vantage point. Undoubtedly for the individual it is the connection of the action with the well-liked particular other that is disturbing but, from an external vantage point, it could just as well be the individual's evaluation of the action or the particular other that is responsible for the disturbance.

That the processes tending to maximize psychological efficiency do not lead to considerable accommodative modification of the part structure after the incorporation of the disturbance into the structure (i.e. after the appraisal of the event) will be due to the strength of binding of the association between action and particular other (dependent on the pressures arising during appraisal) and to the resilience of the evaluative attributes of both the entity structure (the particular other) and the action structure. In other words the processes tending to maximize psychological efficiency may be frequently constrained by other factors.

The incorporation of such a disturbance into the identity structure, and the subsequent slight modification of the structure would mean that the experience of the event is retained much as it was originally experienced*. The disturbance becomes a "bound" disturbance and with it is associated continuing low psychological efficiency of the part structure containing it. (The continuing low psychological efficiency will be subsequently related to the state of "bound" dissonance).

A distinction has been made earlier between excited states and ground states of the identity structure. This will now have to

* If accommodative modification of the structure were considerable then the retained experience would differ appreciably from the original experience.

be extended to include a further distinction referring to states of the structure in which bound disturbances occur.

The ground state of the identity structure was used to refer to the state of the structure in which optimal conditions held in regard to dissipating tendencies. An excited state was used to refer to a state which may result in disturbances within the structure. Such an excited state, it will be seen, accompanies processes of appraisal, reappraisal, decision making etc. which may result in disturbances or during which disturbances may become manifest.

A bound disturbance of the identity structure cannot be categorised as either a ground state or an excited state. It does not fit the category of ground state since the conditions certainly are not optimal concerning dissipating tendencies. It also does not fit into the category of excited state since no processes which could result in disturbances or during which disturbances could become manifest are operating. The bound disturbance is not manifest - it is a continuing state of the identity structure. However, it is a state of excitation with its energy deriving ultimately from emotive sources. Also it may become an excited state if aspects of the disturbance are involved in subsequent appraisals, reappraisals, etc. (e.g. the particular other in the example involved in a further appraisal). For these reasons a state of bound disturbance is to be termed a sub-excited state.

With this further distinction it becomes clear that the identity structure as a totality cannot be in the ground state, but only that certain portions of the structure may be in ground states, and that other portions containing disturbances would be in sub-excited states. Any portion may be involved in an excited state.

The chapter opened with the statement of three major deficiencies of dissonance theory as it stands to date. It was contended that the homeostatic notion of the consistency-motivational principle is an inadequate explanation of dissonance reduction processes, that the definitions of consonance and dissonance are ambiguous, and that no theoretical statement exists by which an estimate of the magnitude of dissonance could be obtained. During the development of the concept "identity structure" and in the formulation of theoretical notions about processes involved in the identity structure (all this in preparation for the appraisal process to be considered in the next chapter), no explicit reference has been made to dissonance reduction processes, though it has been hinted that dissonance is involved in disturbances within the identity structure. However, in the following chapters the relationships between the dynamic processes of the identity structure and dissonance processes will be elaborated; key relationships will be made via the concept of psychological efficiency.

At this juncture it can be stated that the processes operating within the definition of psychological efficiency, which will feature as providing an alternative rationale for dissonance reduction, do not involve the homeostatic consistency-motivational principle. As will be evident no appeal is made to any principle of consistency but instead to a principle of "dynamic" conservation of the identity structure. It will have been noted that the conservation described here is not of a homeostatic kind but is dynamic and involves modification of the fine structure. It is the organization of the structure that is ultimately being conserved against dissipative and disintegrative tendencies, though the organization of the fine structure does not itself remain fixed and rigid. The fine structure may or will frequently become modified and more elaborated* - it will not, save in exceptional circumstances, disintegrate.

The modification and elaboration of the structure is, it will be seen, essentially of an adaptive nature**, with accommodation of old experiences to new ones and the assimilation of further new ones into the identity structure. Featuring strongly in these experiences are their affective associations, and the adaptive nature of the modification and elaboration of the fine structure

* Attention will be given to the modification and elaboration of the fine structure in subsequent chapters.

** bearing in mind that adaptation may occur to malevolent or malignant social environments and hence be ultimately maladaptive.

is with respect to the emotional knowledge (especially in relation to the social environment) as well as, and in contrast to, the cognitive-intellectual knowledge of the environment (c.f. Piaget, Bruner, etc.). The disturbances that give rise to the modifications of fine structure are related to the system of affective states within the identity structure, as well as being due to cognitive-intellectual knowledge of relationships which exist exterior to the individual.

Thus, the conservation of the organization of the identity structure is not a homeostatic notion. No steady or equilibrium state is postulated about which deviations occur and towards which the deviations are returned by various correcting devices. Conservation of the existing organization of the identity structure and elaboration of its fine structure will lead to modified configurations. Following the conceptualization of the processes operating to conserve the identity structure it is seen that the principle involved is one of efficient use of energy resources, not one of homeostasis.

The following chapter is concerned with the process of appraisal - how the orientations within the individual interact with the environmental situations as they present themselves to him or as he is involved in them. New definitions of consonant and dissonant elements are given. An expression for the magnitude of dissonance is stated which, by using the new definitions of consonant and

dissonant elements, enables estimates of magnitude of dissonance to be obtained. The relationship between dissonance and psychological efficiency is formulated from which the theory of decision making and dissonance reduction with respect to the modal and volitional aspects of the identity is derived.

SUMMARY

Following on the evaluation of dissonance theory in Section I, the first chapter of Section II attempts to provide the basis for an alternative interpretation of dissonance phenomena. Consideration of the appraisal process is adopted as the strategy for explicating the major issues with respect to the inadequate explanation of dissonance reduction, the ambiguous definitions of dissonance and consonance, and the lack of any procedure for estimating magnitudes of dissonance.

The concept of identity structure is formulated to give consideration to the psychological matrix within which, during the appraisal process, the transactions with the "external" environment occur. A discussion of the concept "identity" is followed by the definition of two related aspects of identity - the modal aspect referring to the continued sameness, and the volitional aspect referring to the future orientation of identity (it is contended that the two aspects are responsible for different modes of appraisal). Identity structure is regarded as consisting of three principle

systems - a system of evaluated entities and actions which is a function of the individual's experiences of various entities and actions, a system of bipolar constructs (based on Kelly's definition of "construct") whereby entities and events within various situations are construed, and a system of affective states that represents experienced states of an emotional nature dichotomised between all those with which the individual would wish to identify or possess and all those from which he would wish to dissociate. The interrelationships between the three systems are discussed. Belief and expectation is considered in the relationship between the entity and action system and the construct system.

During the exposition of the system of affective states a fundamental distinction is drawn between two ways of knowing the environment - between the cognitive/intellectual knowledge of the external environment (c.f. the work of Piaget and Bruner) and knowledge in terms of internal self-referring emotional experiences.

The evaluative characteristics of entities and actions are related to the system of affective states. Ambivalence of feeling is considered to arise when a particular action or entity is the locus of incompatible affective tendencies.

Part (i) of the chapter concludes with a discussion of certain refinements with respect to: overall evaluations of entities and actions; beliefs about attributes - cognitive components; the

veridicality, ambiguity and resilience of constructs with reference to their function during the appraisal process.

Part (ii) of the chapter provides the rationale for an alternative explanation of dissonance reduction to be discussed in later chapters. The rationale attempts to account for the stability of the identity structure whilst also providing for its development and modification. A feature of the rationale is that processes operate which tend to conserve existing connections, intentions, or identifications, and by which a continuing influx of energy counteracts dissipating tendencies with additional mobilizations of energy to counteract disintegrating tendencies of disturbances within the identity fine structure. Psychological efficiency is defined to express the state of functioning of these processes.

Two hypotheses relating to psychological efficiency are propounded, one with respect to maximising psychological efficiency, the other with respect to decision processes operating at maximal psychological efficiency. The energetics for a bound (continuing) disturbance in the identity structure is regarded as deriving ultimately from emotive sources.

Distinctions are made between certain states of portions of the identity fine structure, such that ground states refer to resting states under optimal conditions, sub-excited states refer to states of bound disturbances, and excited states refer to actual or

symbolic transactions with the "external" environment.

The chapter concludes with a discussion of the nature of the explanatory rationale during which it is distinguished from the homeostatic notion of the consistency-motivational principle.

SECTION II: NEW THEORY

A THEORY OF APPRAISAL AND REAPPRAISAL: AN EXTENDED REFORMULATION OF DISSONANCE THEORY

CHAPTER 6 THE APPRAISAL PROCESS

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THE APPRAISAL PROCESS

The previous chapter is devoted to two major aims, these being to develop a concept of identity structure in order that consideration may be given to the psychological matrix within which transactions with the external environment occur during the process of appraisal, and to postulate processes which can account for the stability of the identity structure and at the same time provide for the development and modification of the structure as a result of transactions with the external environment. The appraisal process, itself, is examined in the present chapter, but the consequences that follow on an appraisal are to be considered in later chapters. These consequences may be behavioural acts such as decisions to follow one course of action rather than another or reappraisals of certain issues, or actions undertaken by self or by others, etc.

Following Magda Arnold (1960, 1967) (and Lazarus 1967) appraisal refers to the process by which meaning and evaluation is given to the object or situation that is being appraised. Appraisal is distinguished from perception by Magda Arnold in the following way:

"... the term perception is used for the simple apprehension of an object as an object rather than a bundle of sensations. Before anything can have "meaning" for us, it must be seen as a thing (must be perceived) and must also be seen in some relationship

to us (it must be appraised). Meaning comes with appraisal." (1960 Vol. I, p.171, footnote).

For Lazarus (1967) appraisal of a situation signifies a transaction with a particular environment by an individual with a particular psychological structure.

The transactions between environment and individual occuring during appraisal, the meanings and evaluations that result from these transactions, are here considered within the context of the identity structure (c.f. the psychological structure referred to by Lazarus). However, the meaning that comes with appraisal may be complex and contradictory, and depend on different modes of appraisal. Thus three different but interrelated modes of appraisal are postulated. Two of these are held to be operating with respect to the modal and the volitional aspects of the identity, the one operating with respect to the individual's values, beliefs, and past experiences making up the modal self, and the other with respect to the individual's intentions and identifications making up the volitional self. The third mode of appraisal is held to result in the recognition of discrepancies between actuality or evaluations presented as being true, and beliefs and expectations held by the individual.

The mode of appraisal with respect to the modal self is considered to result in evaluations of the various associations and dissociations occuring within the configuration of the entities

and actions in the situation being appraised. Thus, as in the example of the previous chapter, for a particular individual South Africa is appraised as being dissociated from democracy.

The mode of appraisal that occurs with respect to the volitional self is held to result in evaluations of effects and outcomes in relation to the individual's identifications and intentions. Referring to the example previously cited, the effect of the South African government on democracy is appraised as contrary to the individual's identification with democracy, or appraised as in accordance with another individual's identification with fascism.

The process of appraisal results in the individual becoming aware of the various circumstances of whatever is being appraised. Appraisal may result in awareness that certain things are being said by various people, or that some other person is acting upon or having an effect on another person, or that the self is involved in a particular relationship with another. In general the appraisal process results in an awareness that certain entities and actions are juxtaposed in various configurations, that is, the situation, the person, or the object has meaning for the individual in terms of the relationships and effects of actions that each entails for the individual.

The construal of relationships, of effects and outcomes of actions, will depend in the main on the system of constructs against which the appraisal process operates, though such construals may depend also in part on various other predispositions such as a readiness to accept certain construals above others or a tendency to devalue certain others. These predispositions may be the result of past experiences which sensitise the individual towards accepting certain relationships readily (as in prejudiced people who are ready to believe the worst about immigrants, etc.) or they may be due to some future orientation which sensitises the individual towards certain possible outcomes rather than others. Such predispositions would interact with and affect straightforward construal against the system of constructs which would operate during appraisal otherwise.

As well as the system of constructs being directly involved in the appraisal process, certain portions of the entity and action system of the identity structure may be activated and feature in the appraisal. This will be true whenever a particular entity or action included in an appraisal exists as a configuration in the identity structure with its attributed characteristics the result of previous appraisals. The entity may be a person well-known to the individual, with well established characteristics having particular evaluations as far as he is concerned. Such a person willhave a certain evaluation for the individual that is

not assessed anew against the system of constructs each time he is encountered. The characteristics of the particular other that feature in the identity structure and are perceived to be relevant by the individual in the context of the situation he is appraising are not assessed again but are there directly. In other words they are projected on to the situation. They exist directly for the individual. The relationship between that particular other and some other person in the situation is, however, subject to appraisal against the system of constructs for its construal. It is also possible that the construal of the relationship which would ordinarily result from appraisal against the system of constructs suffers attenuation or distortion from projected characteristics.

In the previous chapter the appraisal process was described as an excited state of the identity structure that may result in disturbances to portions of itself. The reason for designating the appraisal process as an excited state is that the construct system and portions of the action and entity system become activated. Attendant upon the activation is the awareness of what is going on in the context of the situation being appraised. The awareness is, of course, highly idiosyncratic to the individual and depends upon extent, ambiguity and veridicality of the system of constructs possessed by him, as well as upon distorting pressures of established evaluations within the identity structure.

The excited states of awareness are relatively transient compared with the ground and sub-excited states of the identity structure. Both the ground states and the sub-excited states refer to states of the identity structure in the absence of transactions with the environment* such that occur during appraisal, reappraisal and decision making. These are the states of the major portion of the identity structure most of the time - the ground states referring to those portions of the structure for which the conservation processes operate under optimal conditions, the sub-excited states referring to those other portions which are the loci of bound disturbances and for which conditions are not optimal. By contrast the excited states are transient, changing from moment to moment as appraisal follows appraisal, or reappraisal follows, or decision follows, and so on, with the accompanying states of awareness in flux corresponding to the changes in the excited states.

During excited states certain portions only of the identity structure are activated - only those portions that feature in an appraisal of a certain situation for example - all the rest of the identity structure comprising of all other experiences, intentions, identifications making up the totality of the individual's identity remain and continue dormant.

* The environment is used here in a very broad sense and includes symbolic representations that occur in anticipatory appraisal and reflective reappraisal - i.e. the environment for the individual however much this may differ from any "objective" environment.

Excited states of appraisal are, therefore, very different states of the identity structure compared with the dormant (ground and sub-excited) states. They are the transient states in which transactions between certain portions of the psychological matrix of the individual and the particular environment of the moment occur.

The environment is appraised against the system of constructs, and is therefore restricted in its construal by this system, but it is also appraised as containing features which possess certain characteristics and evaluations for the individual, these being projected on to the environment. As Laing puts it, roughly: appraisal is a synthesis of the individual's interpretations of his perceptions based on his expectations and his phantasies (projections), and of the distal stimuli that originate from the environment; the awareness of the environment (i.e. the experience of it) is the resultant fusion of projection-perception*.

* This is paraphrased in order to increase generality from Laing et al, 1966, pp. 18/19:

"Peter's concrete experience of Paul is a unity of the given and the constructed; a synthesis of his own (Peter's) interpretations of his perceptions based on his expectations and his (Peter's) phantasy (projection), and of the distal stimulus that originates from "Paul". The resultant fusion of projection-perception is the phenomenal Paul as experienced by Peter."

THE APPRAISAL PLANE

At this juncture it is convenient to form an abstraction in order to differentiate sharply between the excited states and the dormant states of the identity structure. This abstraction is termed the appraisal plane. The appraisal plane is considered to represent the loci of transactions between the psychological matrix of the individual and the particular environment encountered. In other words, in abstraction, it consists of the activated portions of the identity structure regarded as projections on to the plane, that is projections of evaluative characteristics of items ofthe entity-action system, together with the interpretations of the distal stimuli originating from the environment as they are appraised against the construct system. The appraisal plane corresponds to the radically different excited states of the identity structure, that is to the excited states of appraisal and concomitant awareness. By thus regarding it in abstraction as containing the loci of transactions between internal aspects of the identity structure and external environmental features, this facilitates discussion of the effects of appraisal upon the organisation of the identity structure and the effects of the organisation of the structure on appraisal (or the interaction of present with past experiences). It allows configurations deriving from immediate appraisals of entities, actions and relationships between them, to be distinguished from continuing configurations

existing in the dormant states of the identity structure by regarding the former as contents of the appraisal plane.

Much of the discussion that follows is about some of the effects that the contents of the appraisal plane have on the organisation of the identity structure, in particular the incorporation into the identity structure of the new experiences (newly appraised relationships, effects of actions, etc.) and the modification of past beliefs, evaluations, identifications and intentions held by the individual. However, the rest of the present chapter is devoted to the contents of the appraisal plane, that is the configurations of entities, actions and the relationships between them deriving from immediate appraisal, and to the disturbances to portions of the identity structure that may result from the appraised configurations. The elaboration and modification of the identity structure is discussed in the following chapter on reappraisal.

The contents of the appraisal plane depend firstly on the construct system. Dependent on the range of constructs and the categorization processes operating with respect to them is the construal of the appraised environment. Assuming for the moment high veridicality, resilience and lack of ambiguity of constructs,* the contents of the appraisal plane would have "objective" validity in terms of the reality of configurations in the situation being appraised. Thus a person would be appraised as striking

* see Chapter 5.

another person when in actuality he is, and a message would be appraised as containing certain recommendations when in fact it states them and, in general, situations would be appraised for what they actually are in terms of the relationships that hold between the various entities and actions. However the evaluations attributed to the construals, especially the evaluations of entities and actions, are not so much dependent on the construct system, but on projections from the entity-action system or the activation of portions of the identity structure which correspond to the past experiences of the individual and hence to attributed characteristics and evaluations within the identity structure of the entities and actions in question. Thus, the contents of the appraisal plane will in general differ markedly from individual to individual depending on his previous experiences. Nevertheless, in terms of the actuality of the situation, it is assumed for the moment that, aside from the projected evaluations, the appraised configuration of the situation in terms of relationships will be "objective" and that agreement would hold on that configuration between individuals appraising the same situation.

Not all situations will be unambiguous, many constructs will be low in resilience, lack veridicality or be themselves ambiguous. Under any of these conditions considerable distortion of the environment may prevail due to the organization of the identity structure, and in particular due to the emotive characteristics

associated with the evaluative attributes of entities and actions within the identity structure, so that wide disagreement between individuals on the appraised configurations would result. The mechanisms of the distorting processes which affect appraisal will not be considered until after the effect of appraisal on the organisation of the identity structure has been briefly expounded. It should, however, be borne in mind that the appraisal itself may have suffered distortion, over and above the projection of evaluations held by the individual on to the situation, in respect of the configuration of the situation. The tendencies of distortion during appraisal by the organisation of the identity structure and the effect of the appraisal on the identity structure is very much a two way interaction. The discussion first considers the contents of the appraisal plane with respect to the different modes of appraisal, then briefly the effect of appraisal on the identity structure, after which it returns to the possible* effect of the identity structure in distorting configurations of relationships during appraisal.

So that the contents of the appraisal plane resulting from the three postulated modes of appraisal can be conceptually differentiated and the effect of each mode on the identity structure

* depending on the resilience, etc. of the constructs against which appraisal occurs - pressures deriving from construct systems will tend to constrain distorting tendencies if sufficiently resilient and unambiguous.

be considered independently of the other modes, the appraisal plane is divided, in abstraction, into three levels or overlapping planes. By differentiating the contents of the appraisal plane in terms of the different modes of appraisal, it becomes possible to consider their interaction and combined effects on the identity structure when more than one mode of appraisal operates simultaneously. Frequently a situation is appraised with respect to more than one mode when, for example, an individual appraises a situation simultaneously in terms of his past beliefs and evaluations and in terms of a future orientation of desirable or undesirable outcomes with respect to his intentions. The resulting total appraisal may give rise to conflicting effects due to the interaction of different modes. Thus for a particular individual Harold Wilson is appraised in one mode as having had allegiances primarily with (or as being associated with) socialist principles; in another mode the effects of his policies are appraised as going counter to major principles of socialism.

Differentiating the modes of appraisal and their corresponding contents of the appraisal plane enables each mode to be first considered as though it were operating alone and with respect to the effect each alone would have on the identity structure. This then enables the combined effects of the simultaneous operation of more than one mode in a particular situation to be analysed in terms

of their interaction, an interaction which, as has been pointed out before, may frequently mitigate against the kind of consistency principle postulated by the family of balance, congruity, and the early dissonance theories. Conceptually therefore the appraisal plane is separated into three overlapping planes which are named the modal appraisal plane, the volitional appraisal plane, and the comparison appraisal plane.

THE MODAL APPRAISAL PLANE

The appraisal plane represents the loci of transactions between the psychological matrix of the individual and the particular environment encountered during appraisal. As an aspect of the total appraisal plane, the modal plane represents the loci of transactions between the modal self aspect of the identity structure and the environment. The contents of the modal plane are the result of appraisal with respect to the modal self, that is with respect to the values, beliefs, and past experiences of the individual, in contrast to the mode of appraisal with respect to the identifications and intentions of the volitional self. Appraisal with respect to the modal self is not concerned with effects and outcomes of people's actions and influences, of the self's actions and influences, or of the actions and influences deriving from any source. These effects and outcomes are in the domain of appraisal with respect to the volitional self -

the striving and future orientated aspect of the individual's identity.

The status quo feature of the individual's identity is central to the mode of appraisal with respect to the modal self - what has been and continues to be related to what in the individual's experience, what experienced item has been and continues to be associated with or dissociated from what experienced entity or action, what characteristics have been and continue to be associated with (attributed to) what particular entities and actions together with their evaluative and emotive associations, what associations and dissociations hold between entity and entity or action and entity, as all these make up the organization of the modal self aspect of the identity structure.

The mode of appraisal with respect to the modal self determines, by way of the construct system, the associations and dissociations that feature in the configuration of relationships encountered during the sequences of excited states (states of awareness) of the identity structure. Previously experienced items* that feature during present appraisals become activated and projected on to the modalappraisal plane together with the configuration of associations and dissociations. The configuration of relationships and evaluations projected on to the modal plane then provide the elements for assessment and interaction in relation to the status quo configurations of the identity structure. Newly experienced

* These items may have been directly or indirectly experienced in the

(contd.)

associations and dissociations maybecome incorporated into the identity structure and, if incompatible, they may strongly disturb the status quo configurations and affect the organisation of portions of the fine structure.

The relationships that feature in modal self appraisals are ones of reciprocal associations and dissociations. By virtue of one entity being associated with another, so is the second associated with the first. If A is associated with B then B is reciprocally associated with A. Reciprocal associations and dissociations of the modal self appraisal are in marked contrast with the non-reciprocal relationships that hold with respect to volitional self appraisals in which the effect A has on B is most often not the same as the effect B has on A, and in which it does not even follow that if A has an effect on B then B will have an effect on A.

An example will help to clarify what is involved in the transaction between environment and the modal self aspect of the internal psychological matrix. In the example, the situation encountered by the individual and which is the subject of appraisal is taken to be a newspaper statement or news broadcast to the effect that:

"the government intends to promote a voluntary incomes policy".

Assuming that the individual has certain evaluations based on previous appraisals of "the government" and of "a voluntary incomes

(contd.) past - indirectly experienced through novels, film, newsreel, second hand reports, etc.

policy" then these two entities feature with their attributed characteristics within the individual's identity structure. The overall evaluations of the entity structures "the government" and "a voluntary incomes policy" will be the resultant of the evaluations of the attributed characteristics of each (see previous chapter).

The transactions between environment and psychological matrix develop as follows. The distal stimulus, the statement or news broadcast, is appraised against the system of constructs and the following elements of the situation delineated, considering for the moment only the modal self mode of appraisal:

the entity:- "the government"
the entity:- "voluntary incomes policy"
the relationship:- an "association" between two entities;

that is, the entity "the government" is "associated with" (representing the modal aspect of "intends to promote") the entity "a voluntary incomes policy".

The configuration of these elements provides the <u>partial</u> contents of the modal appraisal plane, as they are delineated from the distal stimulus by way of the construct system. To complete the description of the contents of the modal appraisal plane representing the <u>loci of transactions</u> between distal stimulus and psychological matrix, there is the projection of the activated portions of the identity structure on to the plane, such that the evaluations of the entities "the government" and "a voluntary incomes policy" possessed by the individual are projected on to the corresponding elements in the appraisal plane. Thus the complete appraisal, as it is represented in the modal appraisal plane, is the fusion of the

interpretation of the distal stimuli and the projection of evaluations (and attributed characteristics) which are aspects of the individual's identity. The total appraisal would also include the mode of appraisal with respect to the volitional self, to be considered in a following section, and also possibly the mode of appraisal in which comparisons are made between expectations and actuality.

PROJECTED AND REFERENT EVALUATIONS WITH RESPECT TO THE MODAL PLANE

The contents of the modal appraisal plane (i.e. the configuration of relationships and evaluations projected on to the plane) provide the elements for assessment and interaction in relation to the status quo configurations of the modal self aspect of the identity structure. The assessment which is of direct concern is one in which the evaluative aspects of the particular configuration of elements in the appraisal plane are compared with the evaluations which make up the organization of the identity structure as the former are in relationto the latter. For the purposes of considering the appraisal process and its effect on the organization of the identity structure, all relevant evaluations in the appraisal plane that bear a relation to evaluations within the identity structure are termed projected evaluations, whilst the evaluations within the identity structure to which they are referred are termed referent evaluations.

In the example the referent evaluations would be the overall evaluations of the entity structures corresponding to "the government"

and "a voluntary incomes policy" within the identity structure. Considering the referent evaluations one at a time, with respect to "the government" the contents of the appraisal plane provide two projected evaluations that bear a relation to the referent: one is the projected evaluation of "a voluntary incomes policy" and its "association with" the referent, the second is the projected evaluation of "the government" and its "identity association" with the referent. With respect to the referent "a voluntary incomes policy", the contents of the modal appraisal plane again provide two projected evaluations: the projected evaluation of "the government" and its "association with" the referent, and the projected evaluation of "a voluntary incomes policy" and its "identity association" with the referent. "Identity association" simply refers to the identity* between the evaluation of the referent projected on to the appraisal plane (i.e. activated) and that of the referent as it is a portion of the identity structure (i.e. as it continues to be). It follows from the above that a projected evaluation can be defined as the resultant evaluation of an item within the appraisal plane and its relationship with respect to the referent.

* It is possible that this is not always an identity as when only certain characteristics of the referent entity are projected on to the appraisal plane and the association with respect to the referent is thereby attenuated.

EFFECT OF APPRAISAL ON IDENTITY STRUCTURE

Disturbances to the status quo configuration of the modal self aspect of the identity structure derive from the existence of emotive incompatibilities between the projected evaluations in the appraisal plane and the referent evaluations in the identity structure. As has been previously explained in the context of bound disturbances within the identity structure (see Chapter 5), the evaluative aspects of items within the entity-action system ultimately derive from the system of affective states. When entities and actions become activated during appraisal these emotive characteristics are also activated (i.e. using the conceptualization presented here: they become projected on to the appraisal plane). Thus some projected evaluations within the appraisal plane may become linked with certain affective states which are incompatible with the affective states to which the referent evaluations are anchored.

To illustrate the kind of incompatibilities that may result during appraisal consider the following. A referent entity may have evaluative characteristics which are primarily derived from affective states with which the individual would wish to identify. A projected evaluation in relation to the referent may become the locus of evaluative characteristics derived from affective states

from which the individual would wish to dissociate but which become associated with the referent during appraisal. Or the projected evaluation may become the locus of emotive characteristics derived from affective states with which the individual would wish to identify but which become dissociated from the referent during appraisal, that is, those states with which he would wish to identify becoming dissociated from similar states. A further possibility of incompatibility would occur when the referent is associated with affective states from which the individual would wish to dissociate becoming dissociated by way of related projected evaluations from like states, that is, obnoxious affective states, instead of being related together as those states from which the individual would wish to dissociate, become, by way of the projected evaluation, incompatible.

The disturbances to the organization of the identity structure which would follow when projected evaluations are incompatible with referent evaluations ultimately derive from the incompatibility of affective states activated and brought together during appraisal. The energetics for these disturbances, it is therefore argued, derive from emotive sources in an analogous fashion to disturbances bound within the identity structure. The only difference is that the excited state of appraisal is a transient one, though the emotional tension may be acute, and whether or not it results in a binding of the disturbance or an attenuation of it or in a

modification of the identity structure to reduce it, depends on other factors to be considered later.

The magnitude of the disturbance will depend on the extent of the incompatibilities between the projected evaluations and their corresponding referent, but it will also depend on factors of ego-involvement (c.f. Sherif et al 1965 - see Chapter 3 of thesis) and the perceived relevance or salience (c.f. Smith, Bruner and White, 1955) of the referent within the total context of the situation being appraised. It is clear that if ego-involvement is low and salience is low the resulting possible disturbance would be very much less than when both ego-involvement and salience are high.

The disturbance to the identity structure arising from the modal self mode of appraisal is identified as dissonance aroused in the modal mode. It is defined here as modal dissonance. It corresponds to disturbances arising out of the contents of the modal appraisal plane, that is, from the loci of transactions between the psychological matrix of the modal self and the environment. As has been argued, the disturbance is ultimately derived from the system of affective states and its energetics derived from emotive sources. Modal dissonance is therefore considered to be affective dissonance aroused through derivative incompatibilities between self-referring emotional states brought about by the appraisal process. Thus the cognitive dissonance

terminology of Festinger is inappropriate for dissonance which is the consequence of the modal self mode of appraisal*.

The cognitive aspects of the situation with respect to the modal appraisal plane merely provide the awareness of the configuration of relationships that exist for the individual in the appraised situation. It should be noted that cognitive awareness may be only partial as when the appraisal is by way of ill-defined or semantically unlabelled constructs or when the attributed characteristics of entities featuring during the appraisal are similarly ill-defined or semantically unlabelled (see previous discussion of cognitive components in Chapter 5). It should also be noted that the causes for the affective tension will probably not be known by the individual for whom the particular conjunction of entities and actions of the appraisal will probably provide for him the reason for his uneasiness rather than the derivative self-referring affective incompatibilities. Of course, it should be remembered that some of the disturbances and accompanying tensions will be trivial, as when ego-involvement in or salience of the referent in the context of the appraisal is minimal.

It may be instructive to return to and elaborate the example in which the gist of a news broadcast was that

"the government intends to promote a voluntary incomes policy".

* However, as will be seen later in the chapter, <u>cognitive</u> dissonance is appropriate for another mode of appraisal.

Assume that the individual encountering and appraising this broadcast is highly ego-involved in both "the government" and the idea of "a voluntary incomes policy". Assume also that for the individual the perceived relevance of the two items in the context of the broadcast is high (i.e. the individual feels that the statement is genuine and cannot be passed off as rumour or otherwise discounted). Suppose the individual has a favourable evaluation of the government (i.e. the overall evaluation of the entity structure appertaining to "the government" is favourable), but that he has an unfavourable evaluation of "a voluntary incomes policy", then the contents of the modal appraisal plane would consist of the following projected evaluations in relation to the corresponding referent evaluations of the identity structure:

Table 6.1

Identity structure referent evaluations:	Modal appraisal plane projected evaluations: resultant evaluation projected on to the delineated entity and relationship of:

	(1) "a voluntary incomes policy" and "association with" the referent (incompatible evaluation)
"the government" (favourable evaluation)	(2) "the government" and "identity association with" the referent (identity evaluation)
"a voluntary incomes policy" (unfavourable evaluation)	(3) "the government" and "association with" the referent (incompatible evaluation)
	(4) "a voluntary incomes policy" and "identity association with" the referent (identity evaluation)

Thus, with respect to each of the two referents, there exists in the modal appraisal plane a projected evaluation that is incompatible. The projected evaluation of "a voluntary incomes pdicy" and "association with" the referent is incompatible with respect to the referent evaluation of "the government". Likewise, the projected evaluation of "the government" and "association with" the referent is incompatible with respect to the referent evaluation of "a voluntary incomes policy". The identity evaluations are of course compatible with respect to their corresponding referent evaluations.

The incompatible projected evaluations are defined as dissonant elements and the compatible projected evaluations are defined as consonant elements. In the example there is one dissonant and one consonant element with respect to each referent. Each referent structure in the identity structure is the locus of the disturbing effect arising from the dissonant element in the modal appraisal plane to which it is related. The total disturbance to the activated portions of the modal self aspect of the identity structure may be considered as made up of two parts, the modal dissonances with respect to each referent. To the individual appraising the situation, it is the association of the government with a voluntary incomes policy that is responsible for the tension of the appraisal; however, the energetics of the disturbance ultimately derive from self-referring affective incompatibilities.

It will be noted that in contrast to Festinger's definitions of dissonant and consonant elements (see, here, Chapters 1 and 3) the present definitions always have a referent with respect to which the elements (projected evaluations) are defined as dissonant or consonant.

It will also be noted that there is a direct kinship between the contents of table 6.1 together with the corresponding disturbance to the identity structure and Rosenberg and Abelson's definition of an "unbalanced band" together with the instability of such a band. In Rosenberg and Abelson's terminology, "the government"

and "a voluntary incomes policy" would be two "concepts" of "opposite sign" which are believed to be "positively related". This corresponds directly to their definition of an unbalanced band which "is one in which the relationship is inconsistent with the signs of the concepts", here the one in which "two concepts of opposite sign are believed to be positively related". (Rosenberg and Abelson, 1960, pp. 119-120 - see Chapter 2 of this thesis where the definitions are quoted in full).

However, although there is a direct kinship between table 6.1 and Rosenberg and Abelson's formulation, there are also major differences. First, they give as an explanation of the instability of an unbalanced band an ipso facto explanation in cognitive inconsistency in contrast with the present formulation in which the energetics of the disturbance to the identity structure are postulated as deriving ultimately from self-referring affective incompatibilities with the perceived cognitive relationship in all probability providing for the individual the reason for the tension* existing during appraisal. Second, though there is a kinship between "unbalanced bands" and dissonant elements as defined here, they are not identical. In table 6.1 there,are two dissonant elements (incompatible projected evaluations) but, according to Rosenberg and Abelson, there is only one unbalanced band (a + p - band). Third, there are consonant elements in table 6.1 arising from the

* i.e. the feeling of inconsistency.

projection of the entities activated during appraisal on to the modal appraisal plane with their identity relationships to the referents within the identity structure. Fourth, factors of ego-involvement and perceived relevance of the referents in the context of the appraisal situation are taken into account in the present analysis (not indicated in table 6.1). The relationship between Rosenberg and Abelson's balance formulation and modal dissonance will receive more detailed attention in Chapter 10.

An elaboration of the news broadcast example will illustrate the contents of the modal appraisal plane and their relationships to referents in the identity structure in more complex situations. In all, the gist of the news broadcast may be taken as three statements, the first of which is the same as before:

(1) "the government intends to promote a voluntary incomes policy"

(2) "the government intends to raise the bargaining status of the Trades Union Congress (TUC)"

(3) "the TUC does not intend to support a voluntary incomes policy".

Assume again that the individual appraising the broadcast is highly ego-involved in the three entities "the government", "a voluntary incomes policy" and the "TUC", and that for him the perceived relevance of the three items is high.

The distal stimuli of the news broadcast are appraised against the system of constructs and the following elements of the situation are delineated by way of the modal self mode of appraisal:

the entity:-	"the government"
the entity:-	"a voluntary incomes policy"
the entity:-	"Trades Union Congress"
the relationship:-	an "association" between the government and a voluntary incomes policy
the relationship:-	an "association" between the government and the TUC
the relationship:-	a "dissociation" between the TUC and a voluntary incomes policy.

The delineated elements form the partial contents of the modal appraisal plane. (The various possible effects and outcomes appraised with respect to the volitional self aspect of the identity receive attention later.) The completion of the contents of the modal appraisal plane comes with the transaction between the delineated distal stimuli and the psychological matrix. Assume for the individual that each one of the entities of the example has a favourable overall evaluation, then during their activation these evaluations are projected on to the corresponding elements in the appraisal plane. The following table (6.2) represents the contents of the modal appraisal plane for this particular individual in

relation to the referents within his identity structure (n.b. in table 6.2 "a voluntary incomes policy" is favourably evaluated in contrast with its unfavourable evaluation in table 6.1).

TABLE 6.2

IDENTITY STRUCTURE referent evaluations:	MODAL APPRAISAL PLANE projected evaluations: resultant evaluation projected on to delineated entity and relationship of:
"the government" (favourable evaluation)	(1) "a voluntary incomes policy" and "association with" the referent (compatible evaluation)
	(2) "Trades Union Congress" and "association with" the referent (compatible evaluation)
	(3) "the government" and "identity association with" the referent (compatible evaluation)

"a voluntary incomes policy" (favourable evaluation)

(4) "the government" and "association with" the referent (compatible evaluation)

(5) "Trades Union Congress" and "dissociation from" the referent (incompatible evaluation)

(6) "a voluntary incomes policy" and "identity association with" the referent (compatible evaluation)

"Trades Union Congress" (favourable evaluation)

(7) "the government" and "association with" the referent (compatible evaluation)

(8) "a voluntary incomes policy" and "dissociation from" the referent (incompatible evaluation)

(9) "Trades Union Congress" and "identity association with" the referent (compatible evaluation)

Of the nine projected evaluations in the modal appraisal plane, two are dissonant: the projected evaluation with respect to the referent "a voluntary incomes policy" of "Trades Union Congress" and "dissociation from" the referent; and the projected evaluation with respect to the referent "Trades Union Congress" of "a voluntary incomes policy" and "dissociation from" the referent. The loci of the resulting disturbances to the identity structure are the entity structures corresponding to the referents with respect to which projected evaluations are dissonant. For the individual the reason for the tension as he sees it is the relationship of dissociation between the Trades Union Congress and a voluntary incomes policy - it is this dissociation which appears in the two dissonant elements. However, for another individual having different evaluations, the reason for the tension as that individual might see it would probably be different. As stated before, it is not the cognition of the configuration of the appraisal situation which of itself gives rise to the disturbance in the identity structure but the derivative self referring affective incompatibilities. For an individual who possesses no evaluations, neither favourable nor unfavourable, with respect to the entities in the example, no incompatible evaluations would result in the modal appraisal plane and he would experience no tension with respect to the modal mode of appraisal; however, dissonance may result by way of the volitional mode of appraisal

through, for example, vicarious identification with the perceived intention of the government to promote a voluntary incomes policy.

Elaboration of the mode of appraisal with respect to the modal self aspect of the identity is given in Chapter 10 in which a mathematical notation is used and certain explicit relationships between the present formulation and those of Rosenberg and Abelson, and Osgood and Tannenbaum are derived. The new definitions of dissonant and consonant elements are given again more explicitly together with considerations of the magnitude of dissonance later in the present chapter.

THE VOLITIONAL APPRAISAL PLANE

As before the total appraisal plane represents the loci of transactions between the psychological matrix of the individual and the particular environment encountered during appraisal. The volitional appraisal plane is regarded as an aspect of the total appraisal plane which represents the loci of transactions between the volitional self aspect of the identity structure and the environment. In an analogous way to the modal plane, the contents of which are the result of appraisal with respect to the modal self, the contents of the volitional plane are the result of appraisal with respect to the volitional self, that is, with respect to the identifications and intentions of the individual. Appraisal with respect to the volitional self is in terms of effects and outcomes in relation to the individual's identifications and intentions.

In fact, of course, appraisal may involve volitional and modal modes simultaneously. Conceptually they are being analysed as distinct modes of appraisal which may interact.

The volitional mode of appraisal can usefully be divided into two aspects, the first concerned with other people's or other agent's effects on the individual's identifications or intentions, the second concerned with outcomes and effects with respect to the self's pursuit of intentions and decisions.

The term agent is used to denote any entity which is appraised as having the power to affect some other entity. Thus, the self, others; public bodies such as the government, the school, the steel industry; inanimate entities such as the economy, the weather, the motor car; may all be appraised as agents. A certain variable subclass of agents may be appraised as intelligent agents, that is, as agents that have the power to pursue intentions and make decisions. Thus the self and other persons will frequently be appraised as intelligent agents having the power of intentional effect and possibly also the power of manipulation of intermediary entities in pursuit of intentional effect. This subclass of intelligent agents will almost certainly include at times such corporate bodies as the government which, for example, may be appraised as manipulating the economy for an intended effect such as stimulating the export trade, and such inanimate entities as computers which may be appraised as

having themselves the power of decision making. Various salient groups - Communits, Jews, "Gnomes of Zurich", Negroes, etc. - may each be appraised as though the group were a single homogeneous agent acting with intelligence and concomitant collusion and conspiracy; the Communists are infiltrating the Trades Unions in order to disrupt the economy of the country by causing industrial unrest; (pre-Second World War) the Jews intend to take control of the world by controlling international finance (the conspiracy myth of World Zionist Government); the "Gnomes of Zurich" are making capital out of holding Britain to ransom (blamed for Britain's financial difficulties, 1966-67); Negroes and Coloureds intend to usurp the British working class and demoralise the Nation by taking over jobs and spreading immoral habits and vice.

In each of the examples the agent (Communists, Jews, etc.) is appraised as manipulating some intermediary entity in order to achieve some effect, and is therefore regarded <u>for analysis</u> as an <u>intelligent</u> agent. The Communists are appraised as manipulating Trades Unions, the Jews as manipulating international finance, Swiss Bankers as manipulating the flow of money to and from the Bank of England, the Negroes and Coloureds as manipulating the pool of jobs and the moral fibre of the British.

The contents of the volitional appraisal plane, as with the modal plane, will consist of a fusion during appraisal of the interpretation of the distal stimuli by way of the construct system and the projection of evaluations from the activated portions of the

identity structure. In any ambiguous situation in which the distal stimuli are indefinite and the actual situation provides no evidence for or against manipulative acts, the appraisal of manipulation of entities by agents, as in the above examples, will be the result of projected evaluations of the agents and possibly also of the intermediary entity.

Returning to the previous example of the government, the Trades Union Congress, and a voluntary incomes policy, the contents of the volitional appraisal plane that might result from appraisal with respect to the volitional mode for an individual will be examined. In this example the aspect of the volitional mode of appraisal that features is the one concerned with other agent's effects with respect to the individual's identifications. In Chapter 8, which is concerned with the psychological processes of making a decision, an example is given in which outcomes and effects with respect to the self's pursuit of a decision are considered.

In the example the following feature as being the gist of a news broadcast:

(1) "the government intends to promote a voluntary incomes policy"

(2) "the government intends to raise the bargaining status of the Trades Union Congress (TUC)"

(3) "the TUC does not intend to support a voluntary incomes policy".

As for the modal plane the following entities from the distal stimuli of the news broadcast are appraised against the construct

system and delineated:

the entity:- "the government"

the entity:- "a voluntary incomes policy"

the entity:- "Trades Union Congress"

The following actions or directions of influence are also delineated by way of the construct system:

directional relationship:- a "directional association" from the government to a voluntary incomes policy

directional relationship:- a "directional association" from the government to the TUC

directional relationship:- a "directional association" from the TUC to a voluntary incomes policy.

In the first of the directional relationships "the government" is the agent and "a voluntary incomes policy" the recipient of the agent's intentions; in the second "the government" is again the agent but this time the "TUC" is the recipient; and in the third the "TUC" is the agent and "a voluntary incomes policy" the recipient. Thus "a voluntary incomes policy" is the recipient of influences by "the government" and the "TUC". In the example, however, "a voluntary incomes policy" is not appraised as having an influence on either "the government" or the "TUC" - it therefore possesses no characteristics of an agent. The "TUC" possesses the characteristics of an agent with respect to "a voluntary incomes policy" but not with respect to "the government"; it is however the recipient of influence

by "the government". "The government" is appraised as an agent influencing the other two entities but, within the context of the appraisal situation, not the recipient of influences by them. In each case in the present example, therefore, no reciprocity holds in the relationships between each pair of entities as the configuration is appraised in the volitional mode. Non-reciprocity of relationships is a feature of the volitional mode of appraisal and is to be contrasted with the reciprocity of the associations and dissociations delineated by way of the modal mode of appraisal (see table 6.2).

As for the modal plane, the completion of the contents of the volitional appraisal plane comes with the transactionsbetween the delineated distal stimuli and the psychological matrix of the individual. Assume for the particular individual appraising the present news broadcast that he identifies with the promotion of a voluntary incomes policy, however, that he is neutral with respect to raising the bargaining status of the TUC. Then with respect to his identification the projected evaluation of the effect of the "directional association" from the government to a voluntary incomes policy would be compatible, whilst the projected evaluation of the effect of the "directional dissociation" from the TUC to a voluntary incomes policy would be incompatible.

For another individual, however, who instead of identifying with the promotion of a voluntary incomes policy, dissociates himself from it, the "directional dissociation" would be compatible and the

"directional association" would be incompatible with respect to the referent identification of dissociation from a voluntary incomes policy. Again, as with the modal self mode of appraisal, the compatibility or incompatibility of the projected evaluations is a function of the psychological matrix of the individual as well as of the particular situation.

So far, it will be noted that the compatibility or incompatibility with respect to the referent identification in the volitional mode depends only on appraised effects (directional associations or dissociations) and not on the evaluations of the agents (i.e. here, "the government" and the "TUC"). This is in contrast with the modal self mode of appraisal in which the evaluations of the entities, as well as the associations and dissociations between them, feature in the projected evaluations. However, evaluations of entities that are projected on to the volitional appraisal plane will feature in the compatibility or otherwise of projected evaluations when ambiguity of the distal stimuli allows manipulative acts (of an agent upon an intermediary in order to produce an effect) to be construed.

"The government" is appraised as having a directional association with "a voluntary incomes policy" (it intends to promote the policy). "The government" is also appraised as supporting the "TUC" which itself does not intend to support "a voluntary incomes policy". Support for an entity (the TUC) which rejects its intention

with regard the incomes policy may be construed as an indirect negation of "the government's" avowed policy. For an individual who identifies with that policy (i.e. the promotion of a voluntary incomes policy) the projected evaluation of the indirect negation would be incompatible with the referent identification. However, "the government" may be construed as manipulating the "TUC" by means of raising its bargaining status in order to gain the support of the "TUC" for "a voluntary incomes policy" (the government may be appraised as using its influence or its coercive powers and being diplomatic in offering to raise the bargaining status of the TUC in return for the TUC's support of its policy). "The government" in the present analysis has t he power of intelligence, i.e. "the government is regarded as an intelligent agent. But how effective "the government's" manipulation might be appraised to be is likely to depend on the individual's evaluation of "the government". Thus, assuming that the individual has a favourable evaluation of "the government" within his identity structure, then, in the absence of conclusive evidence to the contrary, the favourable evaluation will be projected on to the agent "the government" in the volitional appraisal plane as an expression of confidence in the agent's power. The favourable evaluation becomes projected as a favourable characteristic of the agent in relation to the agent's intention and the individual's identification (here, with respect to "a voluntary incomes policy"). Had "the government" been unfavourably evaluated

within the psychological matrix of the individual, the unfavourable evaluation would have been projected on to the agent in the volitional plane as the unfavourable characteristic of ineffectiveness in respect of themanipulation of the "TUC" in support of "a voluntary incomes policy".

The projection of evaluations on to entities in the volitional plane when "intelligent actions" (such as the manipulation of intermediaries) are construed during appraisal in the volitional mode is more complex than similar projections in the modal plane. This is because of the interaction of the evaluation of an intermediary with that of the agent. A more detailed discussion with the same example used here is given in Chapter 11.

The contents of the volitional appraisal plane for the individual who identifies with "a voluntary incomes policy", and who has favourable evaluations of such a policy, "the government", and the "TUC", are summarised in table 6.3. (Compare with table 6.2 for the corresponding modal appraisal with the same evaluations.)

TABLE 6.3

IDENTITY STRUCTURE	VOLITIONAL APPRAISAL PLANE
Referent for the projected evaluations in the volitional appraisal plane:	projected evaluations:
	(1) "directional association" with the referent (agent: "the government") (compatible evaluation)
identification with "a voluntary incomes policy"	
	(2) "directional dissociation" from the referent (agent: the "Trades Union Congress") (incompatible evaluation)
	(3) face value indirect "directional dissociation" from the referent (agent: "the government" - intermediary: "TUC") (incompatible evaluation)
other referent evaluations:	
"the government" (favourable evaluation)	
"TUC" (favourable evaluation)	(4) manipulated indirect "directional association" with the referent (agent: "the government" - intermediary: "TUC") (compatible evaluation)
"a voluntary incomes policy" (favourable evaluation)	

As with the analysis of the contents of the modal appraisal plane, those projected evaluations which are incompatible with respect to the corresponding referent are defined as dissonant elements, and those compatible with the referent are defined as consonant. In table 6.3 for the volitional mode of appraisal two projected evaluations are dissonant with respect to the individual's identification with "a voluntary incomes policy" and two are consonant. The dissonant elements are (2) the intention of the TUC not to support the policy, and (3) the negation of the government's avowed support for the policy by its support for the TUC. The consonant elements are (1) the government's support for the policy, and (4) the government's intentional manipulation of the TUC in order to gain the latter's support. Ambiguity of the appraisal situation would allow construal of element (3). Ambiguity and the projection of favourable characteristics on to the government would allow construal of element (4). Both these apparently contradictory elements may coexist during appraisal, given the ambiguity of the situation in respect of "the government's overall aims" and in respect of "the ability of the government to manipulate the TUC". Once again, it is emphasized that the cognitive construal of the situation may not be as explicit as the above analysis would suggest - much would depend on the construct system of the particular individual and on the semantic labelling or lack of labelling of the constructs.

Also, as for the modal mode of appraisal, the disturbances to the identity structure which follow from the incompatibility of a projected evaluation with a referent within the structure derive ultimately from affective states activated in respect of the referent during appraisal. Thus, the affective states associated, by way of the evaluative characteristics and the construct system, with "a voluntary incomes policy" (i.e. an identification with the policy) are negated by the "directional dissociation" from that policy by the "TUC". The "policy" is the focus of the disturbance arising from this ultimately emotive incompatibility.

The disturbance to the identity structure in the volitional mode is defined as volitional dissonance. The energetics of volitional dissonance are considered to derive from emotive sources in a way analogous to modal dissonance. Both volitional and modal dissonance are therefore regarded as affective dissonance, the one in respect of the volitional mode, the other in respect of the modal mode of appraisal. As with modal dissonance, Festinger's cognitive terminology is regarded as inappropriate for volitional dissonance. However, for the individual appraising the situation the reason for the experienced unease will in all probability be the cognition of the "TUC's intention not to support a voluntary incomes policy" - a policy with which he identifies. But another individual may dissociate himself from the policy and for him the reason for dissatisfaction when appraising the same situation would be the

(different) cognition of "the government's intention to support a voluntary incomes policy". Clearly, therefore, it cannot be the cognition per se that results in the disturbance, but the association aroused through the appraisal process of incompatible self-referring affective states.

Volitional dissonance depends (as does modal dissonance) on the individual's ego-involvement in the referent identification or intention and also on the perceived relevance of the referent within the context of the situation being appraised. The higher the ego-involvement and the greater the perceived relevance, the more disturbing would be any incompatibility between a particular projected evaluation and the referent.

In Chapter 11 a more detailed analysis of the mode of appraisal with respect to the volitional aspect of the identity is given. The TUC-government-voluntary incomes policy example is further elaborated using a mathematical notation and considering different permutations of referent evaluations.

COMPARISON BETWEEN MODAL AND VOLITIONAL MODES OF APPRAISAL

A comparison of the analysis of the appraisal of the same situation by way of the modal and volitional modes may be made by referring to tables 6.2 and 6.3. These tables summarise the contents of the respective appraisal planes for an individual: with favourable overall evaluations of the referents within his psychological matrix, the referents being "the government", "a voluntary incomes policy" and

"the Trades Union Congress"; and with a referent identification with the promotion of "a voluntary incomes policy".

The major differences may be summarised as follows:

(1) modal appraisal is appraisal with respect to the individual's values, beliefs, past experiences making up the modal self aspect of the individual's identity,

volitional appraisal is appraisal with respect to identifications and intentions of the volitional aspect of the individual's identity;

(2) modal appraisal is the appraisal of associations and dissociations between entities in which reciprocity of relationship holds by fact of the existence of a relationship (i.e. A is associated with B, therefore B is associated with A),

volitional appraisal is the appraisal of non-reciprocal directional associations and dissociations (i.e. effects and outcomes) in relation to identifications and intentions and includes appraisal of "agents" as being the source of actions or influence and "intelligent agents" as being sources with the power of manipulation of intermediaries;

in the particular example of tables 6.2 and 6.3,

(3) there are three referent evaluations which are relevant in the modal mode of appraisal compared with one referent identification in the volitional mode;

(4) the nature and the number of projected evaluations differ according to the two modes of appraisal.

Appraisal of the kind of situation used in the example would in general operate in both modes simultaneously, though it also seems probable that some individuals might operate predominantly in the one mode and some predominantly in the other. It is conceivable that personality characteristics may determine the extent to which one or the other mode predominates. The effects of the interaction of the two modes are considered more fully later, especially in Chapter 11.

DEFINITIONS OF DISSONANT AND CONSONANT ELEMENTS

Modal dissonance

Modal dissonance may arise as a result of appraisal with respect to the modal aspect of the individual's identity.

Definition 6.1: A referent evaluation is defined as an evaluation within the identity structure which is activated during appraisal (e.g. overall evaluation of another person, an object, an issue, or any entity that features in the context of an

appraisal*).

Definition 6.2: A projected evaluation is defined as the resultant evaluation of an entity in the appraisal plane, together with its relationship (association or dissociation) with respect to the referent.

Definition 6.3: A dissonant element is defined as a projected evaluation which is incompatible with respect to the referent.

Definition 6.4: A consonant element is defined as a projected evaluation which is compatible with respect to the referent.

Volitional dissonance

Volitional dissonance may arise as a result of appraisal with respect to the volitional aspect of the individual's identity.

Definition 6.5: A referent is defined as an identification (or the contrary of an identification, a dissociation) or an intention on the part of the individual which features in the context of an appraisal.

* as well as overall evaluations referents may be certain characteristics only of entities which might be perceived as being particularly relevant in the context of an appraisal.

Definition 6.6: A projected evaluation is defined as the resultant evaluation of an effect or outcome (actual or potential)* in the appraisal plane in relation to the referent.

Definition 6.7: A dissonant element is defined as a projected evaluation which is incompatible with respect to the referent.

Definition 6.8: A consonant element is defined as a projected evaluation which is compatible with respect to the referent.

Definition and magnitude of dissonance

Definition 6.9: In general terms, dissonance is defined as the degree of disturbance in some relevant portion of the identity structure as the result of an appraisal.

Hypothesis 6.10: The magnitude of dissonance is taken to depend on:

a direct relation to the degree of ego-involvement in, or importance to the individual of, the referent; a direct relation to the perceived relevance or

* actual if the effect or outcome is certain, potential if the effect or outcome is uncertain.

salience of the referent in the context of the appraisal; a direct relation to the number and strength of dissonant elements with respect to the referent; an inverse relation to the number and strength of consonant elements with respect to the referent.

The present definitions differ from those of Festinger in a number of important ways. Festinger refers in a universal way to non-fitting cognitions and a general notion of inconsistency and dissonance, whereas the present analysis rejects the consistency principle and distinguishes between different modes of appraisal resulting in different modes of dissonance arousal.

In Chapter 3 Festinger's definition of dissonance was critically examined and found deficient in that it omitted to specify <u>with respect to what an element should be considered dissonant or consonant</u>. In the present formulation elements are always specified as being dissonant or consonant with respect to a particular referent evaluation or referent identification or intention. Hence, in complex situations (most situations will involve more than one referent) any number of elements can be delineated as dissonant or consonant with respect to their appropriate referents. The present definitions enable the analysis of complex situations in terms of

elements and referents in an unambiguous way.*

The distinction between referents and projected evaluations is of fundamental importance since it is basic to the definitions of dissonant and consonant elements in the present formulation. A referent is an aspect of the individual's identity - it is contained within the psychological matrix (or identity structure) of the individual; its evaluative and affective (including ambivalent) connotations and characteristics are derived from the individual's direct or indirect experiences associated with it. A projected evaluation, on the other hand, is dependent both on the individual's psychological matrix and the particular situation or environment being appraised. It is a fusion of the interpretation of the distal stimuli (against the construct system) and the projection of evaluative characteristics on to the delineated stimuli. Thus for different individuals the configuration of a situation may be the same, but the projected evaluations quite different. And for the same individual projected evaluations will, of course, vary from situation to situation even when the same referents are involved.

It is the incompatibility or compatibility between a projected evaluation and a referent that defines whether it is a dissonant or consonant element in contrast to the somewhat vague notion of non-fitting or fitting relationships between cognitions of the

* see experimental situations in Chapters 12 and 13.

previous definitions. The incompatibility or compatibility refers to one which derives from self-referring emotive states. In the present formulation it is this essentially affective (as opposed to cognitive) incompatibility that characterises modal and volitional dissonance*, which is to say that the cognitions and cognitive elements of Festinger's formulation are abandoned in favour of projected evaluations in the appraisal plane**.

The statement of the magnitude of dissonance incorporates the variables of ego-involvement in the referent and salience of the referent within the context of the appraisal in a more explicit way contrasted with the notions of importance and relevance of elements in Festinger's statement.

From the theoretical statements of the definitions of consonant and dissonant elements, and the statement of the magnitude of dissonance, estimates of the magnitude of dissonance for an individual appraising a complex situation can be ascertained. Two experiments are reported in Chapters 12 and 13 in which this is done so that changes in dissonance could be examined.

* Discrepancy dissonance examined later in the chapter is regarded as essentially cognitive dissonance.

** As emphasized previously, a particular cognition may for the individual be regarded as responsible for tension experienced - however, the tension is due to evaluative incompatibility.

DISSONANCE AND PSYCHOLOGICAL EFFICIENCY

In general terms dissonance is defined as the degree of disturbance in some relevant portion of the identity structure as a result of an appraisal. Depending on the mode of appraisal the loci of the disturbance will be referent evaluations, identifications or intentions. More than one mode may be in operation simultaneously with consequent interaction. In general terms, however, dissonance, whatever the mode of appraisal, will be seen to decrease psychological efficiency.

Psychological efficiency expresses the state of affairs concerning the efficiency with which connections, intentions and identifications are maintained with respect to some part of the identity structure suffering a disturbance. According to hypothesis 5.2 (Chapter 5), when any part of the identity structure suffers a disturbance additional mobilization of energy accompanies the inhibition of disintegrating tendencies affecting connections, intentions and identifications within the part of the structure affected. The additional mobilization of energy tends to counteract the disturbance suffered by the structure.

The definition of psychological efficiency is (see Chapter 5):

the ratio

$$\frac{\text{influx of energy to part structure under optimal conditions}}{\text{total influx of energy to same part structure under conditions of disturbance}}$$

This may be rewritten thus:

$$\frac{\text{influx of energy to part structure under optimal conditions}}{\text{influx of energy to same part structure under optimal condns. } \underline{\text{plus}} \text{ additional influx of energy under condns. of disturbance}} \qquad 6.11$$

The latter part of the denominator of expression 6.11 is equated to the magnitude of dissonance to give:

Psychological efficiency is the ratio:

$$\frac{\text{influx of energy to part structure under optimal conditions}}{\text{influx of energy to same part structure under optimal condns. } \underline{\text{plus}} \text{ dissonance}} \qquad 6.12$$

The justification for this step is as follows. The energetics of the disturbance arising as a consequence of the modal or volitional mode of appraisal derive from emotive sources. Dissonance represents the magnitude of the disturbance and is a function of the number and strength of projected evaluations incompatible with appropriate referents, together with ego-involvement in the referents and

salience of the referents in the context of appraisal. For there to be no deformation of the fine structure suffering the disturbance, the additional mobilization of energy would have to be sufficient to counter the disturbance, so that the greater the disturbance the greater would the quantity of energy mobilized have to be. Since dissonance represents the magnitude of the disturbance, the quantity of additional energy mobilized can be equated with the magnitude of dissonance*.

Examining expression 6.12 it is clear that the psychological efficiency for maintaining the fine structure suffering disturbance intact will decrease with increasing dissonance (i.e. the greater the disturbance) resulting from appraisal. The greater the dissonance the lower will be the psychological efficiency with respect to the part structure disturbed during the appraisal process. Hypotheses 5.3 and 5.4 concerning the efficient operation with respect to energy resources of the control processes maintaining the organization of the identity structure (see Chapter 5) are relevant here. Hypothesis 5.3 states that, in general, processes operate tending to maximize psychological efficiency. There are essentially two ways in which maximizing psychological efficiency can occur; the first is by distorting the appraisal that would otherwise occur against the system of constructs, so that dissonance arising during the

* due regard being given to the question of compatibility of units between energy mobilization and dissonance.

appraisal is minimized - this would depend on there being sufficient ambiguity or lack of resilience on the part of theconstructs in question to allow such distortion to take place; if the pressure of the construct system is such that distortion cannot operate to a substantial degree, the second way of maximizing psychological efficiency might follow in which the organization of the fine structure accommodates to the disturbance such that dissonance becomes reduced. However, if the fine structure is so stably bound that it does not accommodate to any great extant, and if distortion of appraisal cannot occur due to the resilience of the construct system, then substantial dissonance reduction cannot occur and psychological efficiency would remain low.

Hypothesis 5.4, which states that if alternatives exist for the individual a decision process will operate at maximal psychological efficiency, enables a theory of the decision process to be formulated by considering the relationship between dissonance and psychological efficiency. The decision theory is expounded in Chapter 8.

DISTORTION OF APPRAISAL

Of the two main consequences of processes tending to maximize psychological efficiency, that in which the organization of the fine structure accommodates to the disturbance is elaborated in the following chapter on reappraisal (Chapter 7), and the other in which

distortion of appraisal occurs receives immediate attention.

The distortion of appraisal which is linked to the processes maximizing psychological efficiency involves a distortion of the appraisal as it would occur against the system of constructs in the absence of these processes. As a consequence of the processes tending to maximize psychological efficiency, dissonance would tend to be minimized and, if sufficient latitude of interpretation of the distal stimuli by way of the construct system exists, appraisal would be distorted. Such distortion might occur: if the situation being appraised were ambiguous and allowed several interpretations; if the constructs featuring during appraisal were themselves ambiguous; or if the constructs lacked resilience and were unable to withstand the pressures arising from internal processes*.

Since the disturbance (and accompanying low psychological efficiency) to the identity structure in the modal and volitional modes of appraisal depends on the transactions between the psychological matrix and the environment, the distortion of appraisal (a consequence of maximizing psychological efficiency) is seen to be as much a consequence of the individual's psychological matrix as is the disturbance to the identity structure a consequence of the external

* Note that the distortion described here is not one of the projection of the individual's evaluations on to the distal stimuli, nor one of lack of veridicality of any of the relevant constructs. The fusion of the interpretation of the distal stimuli and projection on to them has been examined in this chapter. Lack of veridicality of constructs would lead to bizarre appraisals.

configuration existing between evaluated entities. The tendency toward distortion of appraisal as a consequence of processes tending to maximise psychological efficiency and the disturbance to the identity structure arising during appraisal is therefore a two-way interaction. Which effect would be the stronger will depend on the degree of ambiguity and resilience of the relevant constructs. If the situation is unambiguous and if the constructs are unambiguous and resilient as well, then (given incompatible projected evaluations) there will be little distortion of appraisal but instead disturbance to the identity structure. If these conditions do not hold then there will be less disturbance to the identity structure, but greater distortion of appraisal.

The example previously used to examine the modal and volitional modes of appraisal will serve to illustrate the way the processes of maximising psychological efficiency might interact with the process of appraisal. Consider the individual whose psychological matrix includes favourable evaluations of "the government", "the TUC", and "a voluntary incomes policy", and who also identifies with the promotion of such a policy. Tables 6.2 and 6.3 give the contents of the modal and volitional appraisal planes for the individual on appraising a news broadcast to the effect that the government intends to promote a voluntary incomes policy and raise the bargaining status of the TUC, whilst the TUC does not intend to support a voluntary incomes policy. For this example the incompatible projected evaluations

in both appraisal planes contain the dissociation of the TUC from the incomes policy. These dissonant elements give rise to dissonance with respect to both modes, hence to decreases in psychological efficiency with respect to both modes.

The processes tending to maximize psychological efficiency, provided latitude of interpretation of the distal stimuli exists, would tend to counter the dissonances and to distort the appraisal. In the present example the processes operating to counter both modal and volitional dissonances operate together and in such a way that the (actual) dissociation between the TUC and a voluntary incomes policy would tend to be distorted to become minimized. In this case the TUC, despite the news broadcast, would be interpreted as being only mildly against a voluntary incomes policy or perhaps not at all against it. How great the distortion might be would depend on the ambiguity of the situation and the relevant constructs, and is therefore dependent on the characteristics of both the particular environment and the particular individual. If distortion of appraisal does occur, the contents of the appraisal planes (tables 6.2 and 6.3) would be modified according to the attenuation of the projected evaluations. The resultant disturbances to the identity structure in the modal and volitional modes would be correspondingly attenuated.

The above example, in which the distorting pressures from both modes are operating in conjunction with each other, demonstrates

the utility of separating out the modal and volitional modes of appraisal for analysis. In other cases the pressures from the two modes would be antagonistic, and in yet other cases the pressures would be operating in conjunction but in the opposite direction - the direction of over-accepting the dissociation between the TUC and a voluntary incomes policy. The interaction of modes of appraisal receives further analysis in Chapters 10 and 11, and experimental examination in Chapter 13.

THE COMPARISON APPRAISAL PLANE

The comparison mode of appraisal is altogether different from the modal and volitional modes. Whereas the latter are concerned with the configuration of entities and relationships, effects and outcomes, the former is concerned with the comparison of expectations and beliefs and the corresponding actualities existing in the situation being appraised. For example, an individual may have an expectation that a particular event will occur when in actuality it is appraised as not occurring, or he may have a belief that another person possesses a certain characteristic but discovers that the belief is mistaken.

The discrepancies between expectations and beliefs on the part of an individual and corresponding actualities are conceptualised as occurring in the comparison appraisal plane. The recognition of such discrepancies and an assessment of the extent of them provide the defining attributes of the comparison mode of appraisal. During

appraisal the expectation or belief may become activated (projected on to thecomparison appraisal plane - "projected on to the environment") and the corresponding appraisal, by way of the construct system, of the distal stimulus (the actuality) provide for the comparison and the assessment of any discrepancy. The contents of the comparison appraisal plane (again as an abstraction) will therefore be regarded as made up of an identity projection of the referent belief or expectation, together with the assessed discrepancy with respect to the referent.

Since the evaluation of an entity is regarded as the resultant of the beliefs* (hence also expectations) that certain evaluative attributes characterise that entity, another point of view expressed by another person about the same entity is likewise regarded as the resultant of different beliefs about evaluative attributes characterising that entity. Hence the discrepancy between another's opinion and the individual's own opinion may be regarded in the same way as the discrepancy between an "overall" belief and a corresponding "actuality" except that the "actuality" is merely the other's opinion.

In this way the comparison mode of appraisal is seen to include the assessment of discrepancies between stands taken by another and the individual's own stand on an issue - in other words,

* strength of projections from the system of constructs on to the entity/action system - see section on construct system, Chapter 5.

the assessment of communications. In Chapter 9 an examination of communication discrepancy (the discrepancy between the stand taken on an issue in a communication and the individual's own stand) is given which takes into consideration the social judgment approach of Sherif, Sherif and Nebergall (1965).

The disturbance to the referent in the identity structure as a consequence of the comparison mode of appraisal is defined as discrepancy dissonance. When no discrepancy exists between an expectation or belief and actuality, or between a stand taken in a communication or by another and the individual's own stand, then there is no disturbance to the referent and no discrepancy dissonance. The comparison mode of appraisal can cut across both the modal and the volitional modes of appraisal. Returning to the government-TUC-voluntary incomes policy example, the statement that the government intends to promote a voluntary incomes policy may be discrepant with the individual's belief that the government has no such intention, hence give rise to discrepancy dissonance whatever the outcome of the modal and volitional modes of appraisal. The possibility of interaction of all three modes of appraisal is examined in Chapter 11 and an experiment in which all three modes operate discussed in Chapter 13.

Unlike the affective qualities of modal and volitional dissonances with their energetics deriving ultimately from emotive

sources, discrepancy dissonance is regarded as essentially cognitive, deriving its energetics from the cognition of discrepancy between the actuality assessed by way of the construct system and the corresponding referent belief or expectation residing within the identity structure. Without the cognition* there would be no realization of discrepancy and no discrepancy dissonance. This is in contrast with the modal and volitional dissonances in which it is the incompatibility of evaluations (and their derivative self-referring affective states) that results in disturbances. Thus discrepancy dissonance is regarded as cognitive dissonance in contrast with the affective dissonances of the modal and volitional modes. In so far as the discrepancies do not involve affective characteristics, discrepancy dissonance provides the means for adjustment and correction of false beliefs and expectations with respect to actuality. However, when it comes to opinions which are based on beliefs and expectations about evaluative attributes, other factors such as tolerance on the issue in question and the credibility of the source of communication become important and intertwine with the cognitive nature of discrepancy dissonance (see Chapter 9 for an examination of these factors).

* Again, with the limits imposed on "cognition" - see discussion of cognitive components in Chapter 5.

DEFINITIONS: COMPARISON APPRAISAL PLANE

Discrepancy dissonance

Discrepancy dissonance may arise as a result of appraisal in the comparison mode.

The magnitude of dissonance has been given as depending on (hypothesis 6.10):

> a direct relation to the degree of ego-involvement in the referent;
> a direct relation to the perceived relevance of the referent in the context of the appraisal;
> a direct relation to the number and strength of dissonant elements with respect to the referent;
> an inverse relation to the number and strength of consonant elements with respect to the referent.

Discrepancy dissonance may be regarded as a limiting case of the general statement above such that there is only one dissonant element, the discrepancy, with respect to the referent and only one consonant element, the identity projected evaluation of the referent. Otherwise, the factors of ego-involvement in and perceived relevance of the referent in the context of the appraisal feature as above.

Definition 6.13: A referent evaluation is defined as an evaluation of a belief, an expectation, or an opinion within the identity structure which is activated during appraisal.

Definition 6.14: A dissonant element with respect to the referent is defined as the resultant discrepancy between the projected evaluation of the distal stimulus and the projected evaluation of the activated referent.

Definition 6.15: A consonant element with respect to the referent is defined as the identity projected evaluation of the referent.

As with modal and volitional dissonance, discrepancy dissonance would lead to a decrease in the psychological efficiency with respect to the disturbed part structure. The processes of maximizing psychological efficiency may likewise counter dissonance pressures and distort appraisal, especially in the case of discrepancies of opinion. Such distortion may take the form of attenuation of the perceived relevance of the referent and hence the perceived relevance of the discrepancy* by such devices as

* The perceived relevance of the referent in the context of appraisal is equivalent to the perceived relevance of the discrepancy to the referent as far as discrepancy dissonance is concerned.

derogation of the source of communication (see Chapter 9 for an extended treatment). In the extreme case it is possible that reality in theguise of a non-occurrence of an expected event may be denied. The degree of distortion possible, as with the modal and volitional modes, will depend on the nature of the relevant constructs and the degree of ambiguity inherent in the situation being appraised.

The decreased psychological efficiency that may be the outcome of the resultant dissonance due to the comparison mode of appraisal (after any possible distortion) might be maximized by the accommodation of the referent in the direction of decreasing the discrepancy, but will depend on the strength of binding and the stability of the referent. The possible resultant change in belief, expectation, or opinion is discussed in Chapter 9.

THE APPRAISAL PROCESS AND PSYCHOLOGICAL EFFICIENCY

In any confrontation between a particular environment and an individual with a particular identity structure, the individual's appraisal of the environment may be by way of any of the three modes identified in the discussion or by way of a combination of them. Which mode, if any, predominates will depend on the idiosyncracies of both the particular situation and the particular individual. As a consequence of appraisal dissonance in one or more modes may result and the corresponding psychological efficiences be decreased. The relationship between psychological efficiency and dissonance is such that processes operating to <u>maximize</u> psychological efficiency

will tend to lead to dissonance reduction, although other processes such as distortion of appraisal and decision making are also related to psychological efficiency.

The relationship between dissonance and psychological efficiency provides an explanation of dissonance reduction processes in terms of the theory of psychological efficiency. As demonstrated in Chapter 5 the process of maximizing psychological efficiency is not a homeostatic process in which a steady or equilibrium state is specified towards which deviations are returned by various correcting devices, but one of efficient use of energy resources in the conservation and elaboration of the identity structure. Dissonance reduction processes, therefore, are not the consequence of a homeostatic motivational principle as has been previously argued by others*, nor is dissonance reduction a consequence of the operation of a consistency principle. It will be demonstrated theoretically and experimentally that the interaction of modes of appraisal and dissonance reduction processes in those modes can actively mitigate against any kind of consistency.**

In relation to the three issues stated in Chapter 5 as demonstrating the necessity for a reformulation of the original exposition of dissonance theory, an assessment can now be made of the

* See Chapter 2.

** Theoretically, Chapters 10 and 11; experimentally, Chapter 13.

strategy adopted to explicate these issues. The strategy adopted was that of examining the appraisal process which itself necessitated consideration of the psychological matrix within which that process operates.

The first issue was that the homeostatic notion of the consistency-motivational principle is an inadequate explanation of dissonance reduction processes. This principle is here replaced by an explanation in terms of the theory of psychological efficiency which does not make use of the notions of homeostasis or consistency. The identification of three modes of appraisal and consequent interaction of corresponding modes of dissonance reduction demonstrates conclusively the fallacy of the consistency principle explanation.

The second issue was that the definitions of consonance and dissonance are ambiguous so that, in experimental situations, it is impossible to use them to delineate consonant and dissonant elements rigorously. New definitions have been given for each of the three modes of appraisal which eliminate the main sources of ambiguity in the original definitions by specifying the referent with respect to which elements are dissonant or consonant and by specifying the delineation of elements with respect to the appropriate mode of appraisal.

The third issue was that there exists no theoretical statement by the implementation of which an estimate of the magnitude of dissonance can be ascertained. The theoretical statement of the magnitude of dissonance presented in this chapter (hypothesis 6.10), together with the new definitions of dissonant and consonant elements according to the mode of appraisal, enables estimates of dissonances with respect to the appropriate modes to be ascertained and the processes of dissonance reduction to be followed through*.

In addition, the theory of psychological efficiency indicates that distortion of appraisal is likely to occur in potentially dissonance-arousing situations. It also provides the basic hypothesis for an explanation of the psychological decision process.

Explanation of the distortion of appraisal and the decision process would be impossible in terms of dissonance regarded as a drive or a motivating state of affairs, since in neither case does dissonance reduction (qua drive reduction) occur. In distortion of appraisal the arousal of dissonance is minimized, and in the decision process the alternative that arouses the least dissonance becomes the chosen one (anticipating Chapter 8 on the theory of the decision process). In neither case can dissonance be regarded as an antecedent state of affairs which motivates the individual to reduce dissonance. Dissonance reduction can follow only after the arousal of dissonance, that is, as a result of an appraisal or as a result

* see Chapter 12 where dissonance reduction is followed through in an experimental decision situation; see also Chapter 13 concerning dissonance reduction in a complex experimental attitude change situation

of a decision. The theory of psychological efficiency provides an explanation of dissonance processes and extends the province of dissonance considerations to include distortion of appraisal and the decision process.

It would seem that consideration of the appraisal process, together with the psychological matrix (identity structure) within which it operates and the processes maintaining that matrix, allows for clarification of certain issues and extension to other concerns not originally considered the province of dissonance theory.

NOTE ON THE THREE MODES OF APPRAISAL

It is possible to discern rough parallels between the three modes of appraisal distinguished in this chapter and the theoretical and experimental approaches of various investigators. The modal mode of appraisal, giving rise possibly to modal dissonance, finds its closest parallel in the work of the balance theorists (as represented by Cartwright and Harary, 1956 and Rosenberg and Abelson, 1960 - see Chapter 2 of this thesis) - the parallel has been examined in the section of this chapter on the modal appraisal plane and is further clarified in Chapter 10. The modal mode of appraisal also has kinship with the congruity model of Osgood and Tannenbaum (1955 - see Chapter 2 of this thesis) which is also examined in Chapter 10.

The volitional mode of appraisal, which may give rise to volitional dissonance, fits roughly in the mainstream of the

Festinger (1957, 1964), Brehm and Cohen (1962) school of investigators which tends to emphasize commitment and volition - see Chapters 1, 2 and 3. In the decision theory of Chapter 8 it is the volitional mode of appraisal that operates during the decision process. The dissonance reduction that follows a decision is identified as volitional dissonance. Post-decision dissonance reduction has been a major concern of the "dissonance theorists".

The comparison mode of appraisal and discrepancy dissonance is related to the communication discrepancy studies represented by Sherif et al. (1965) using the ego-involvement and social judgment approach (see Chapter 3 of this thesis) and by Aronson, Turner and Carlsmith (1963) using the dissonance approach (see Chapter 1). The relationship between the social judgment approach and discrepancy dissonance is examined in Chapter 9.

However, despite the possibility a posteriori of discerning distinguishing characteristics, no explicit differentiation is made by previous investigators so that there is much overlap, witness the widespread use of the consistency principle (Chapter 2), and parallels can be only very roughly drawn. As Roger Brown (1965, p.595) says "... the combination of ideas that would usually be considered inconsistent by the one analysis would usually also be considered inconsistent by the other analysis.....For the most part balance models and dissonance theory are operating in the same domain."

Given also that frequently more than one mode of appraisal may be in operation simultaneously, it cannot be expected that previous investigations be necessarily cited as illustrating one or another mode of appraisal.

The next chapter (Chapter 7) is concerned in a general way with the process of reappraisal and dissonance reduction with respect to the three modes of dissonance. Chapter 8 examines volitional appraisal with respect to the individual's intentions and formulates a theory of the decision process. The comparison mode of appraisal and reappraisal consequent upon discrepancy dissonance receives attention in Chapter 9. The modal mode of appraisal and modal dissonance reduction is the subject of Chapter 10. The concern of Chapter 11 is the volitional mode of appraisal and volitional dissonance reduction.

SUMMARY

Following on the conceptualization in the previous chapter of the psychological matrix (the identity structure) within which the appraisal process operates, the chapter opens with the examination of the appraisal process itself. The appraisal process is conceived as involving transactions between the individual and the environment occurring during the excited state of the identity structure. The excited states of appraisal are regarded as transient states of awareness involving certain portions only of the identity structure.

These are contrasted with the ground and subexcited states which refer to "resting" or "dormant" states of the identity structure in which some portions are optimal with respect to dissipative tendencies (ground states) and other portions contain bound disturbances (subexcited states).

The appraisal process is envisaged as a process in which the environmental configuration is delineated against the construct system and in which evaluative characteristics are projected on to the delineated elements.

An abstraction is formed to differentiate sharply between the excited states of appraisal and the dormant states. The abstraction is named the appraisal plane; it is considered to represent the loci of transactions between the psychological matrix of the individual and the particular environment encountered. The configurations deriving from immediate appraisal are regarded as contents of the appraisal plane to contrast them with the continuing configurations of the dormant states of the identity structure.

Conceptually, and for the sake of analysis, the appraisal plane is separated into overlapping aspects which correspond to the separation of three modes of appraisal. They are named the modal appraisal plane, the volitional appraisal plane, and the comparison appraisal plane.

The modal appraisal plane represents the loci of transactions between the modal self aspect of the identity structure and the

environment. The contents of the modal plane are considered to be the result of appraisal with respect to the values, beliefs, and past experiences of the individual (the modal self aspect of identity). Modal appraisal is the appraisal of reciprocal associations and dissociations between entities.

The volitional appraisal plane likewise represents the loci of transactions between the volitional self aspect of the identity structure and the environment, with the contents of the volitional plane considered to be the result of appraisal with respect to the individual's identifications and intentions. Volitional appraisal is the appraisal of non-reciprocal directional associations and dissociations (i.e. effects and outcomes) in relation to identifications and intentions. A feature of the volitional appraisal plane is the differentiation between the terms agent, used to denote any entity appraised as having the power to affect some other entity, and intelligent agent, used to denote any entity appraised as having the power to pursue intentions and make decisions.

The comparison appraisal plane is regarded as being quite different from the other two, which are concerned with configurations of entities and relationships, effects and outcomes and their relationships to identifications and intentions. It is concerned with discrepancies between expectations and beliefs, and corresponding actualities in the environment being appraised. Through the association of opinions with beliefs and expectations, the comparison

plane is also concerned with discrepancies between the individual's own opinion on an issue and any other opinion expressed on the same issue (i.e. communication discrepancy).

Which mode, if any, might predominate during appraisal will probably depend on the idiosyncracies of appraisal situation and of the individual. Interaction between modes of appraisal is expected to occur frequently.

For the purpose of considering the effect of the appraisal process on the organization of the identity structure, all relevant evaluations in the appraisal plane that bear a relation to evaluations within the identity structure are termed projected evaluations, whilst those within the identity structure to which they are referred are termed referent evaluations.

Each mode of appraisal may result in disturbances to activated portions of the identity structure. The disturbances are defined as modal, volitional, and discrepancy dissonances corresponding to the modal, volitional and comparison modes of appraisal respectively.

Modal and volitional dissonance are regarded as essentially affective in nature, with the energetics of the corresponding disturbances to the identity structure deriving ultimately from emotive sources due to derivative incompatibilities between self-referri affective states. Cognitive aspects are regarded as possibly providing for the individual the reason for the states of tension. (In the

section on modal dissonance certain similarities with the balance formulation of Rosenberg and Abelson, 1960, are noted and differences also indicated.) Discrepancy dissonance is regarded, in contrast, as essentially cognitive, and able to provide means for adjustment and correction of false beliefs and expectations with respect to actuality, though when it comes to opinions based on beliefs and expectations about evaluative attributes, factors such as tolerance on an issue and credibility of the source of communication intertwine with its cognitive nature.

New definitions of dissonant and consonant elements are given which are held to eliminate the main sources of ambiguity in the original definitions by specifying the referent with respect to which elements are dissonant or consonant and by specifying the delineation of elements with respect to the appropriate mode of appraisal. A theoretical statement of dissonance is given which enables estimates of dissonances to be ascertained.

Dissonance is related to the theory of psychological efficiency presented in the previous chapter. Processes that maximize psychological efficiency are regarded as providing an explanation for processes of dissonance reduction. The theory of psychological efficiency indicates that distortion of appraisal is likely to occur in potentially dissonance arousing situations, and provides the basic hypothesis for a decision theory.

The theoretical constructs associated with psychological efficiency provide an explanation of dissonance reduction which does not depend on the inadequate homeostatic notion of the consistency-motivational principle, as well as extending the province of dissonance theory to (a) distortion of appraisal, and (b) decisions, which cannot be explained in terms of dissonance reduction (qua drive reduction) following upon antecedent motivational states of dissonance arousal.

Finally, very rough parallels are noted between the three modes of appraisal distinguished here and certain theoretical and experimental approaches of other investigators.

SECTION II : NEW THEORY

A THEORY OF APPRAISAL AND REAPPRAISAL: AN EXTENDED REFORMULATION OF DISSONANCE THEORY

CHAPTER 7 THE PROCESSES OF REAPPRAISAL

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INTRODUCTION

This chapter is concerned with the manifestation of dissonance reduction, and with a concept of bound dissonance. The latter concept refers to disturbances within the identity structure, which may be due to ambivalent feelings about some entity or the pursuit of a certain intention, and which continue as part of the individual's identity.

Both dissonance reduction and bound dissonance are held to be related to the processes of reappraisal, in a way shortly to be described. Reappraisal, as used here, refers to the re-evaluation of past experiences, and to the incorporation of new experiences that may have a bearing on old ones; it may also include the re-evaluation of present intentions and, perhaps, identifications in the light of present circumstances. The term "reappraisal" is considered to refer to the processes whereby the identity structure becomes modified or further elaborated, as it might become, for example, following the appraisal of the circumstances in which the individual finds himself, or following upon a decision he has made.

Two types of reappraisal are distinguished. The first is assimilative reappraisal, and refers to the process whereby new experiences become incorporated into some part of the identity structure; the experiences thus incorporated may involve both consonant and dissonant elements with respect to certain referent evaluations or identifications already existing within the identity

structure. The second is accommodative reappraisal, and refers to the process whereby re-evaluations occur of certain attributed characteristics of entities and actions, or certain beliefs and expectations, these being previously established contents of the identity structure. The essential distinction between assimilative and accommodative reappraisal is that the former refers to the incorporation of new elements into the identity structure, whereas the latter refers to the modification of elements already existing within the identity structure. Thus, new elements (from new experiences) may become assimilated (incorporated) into the existing configuration within the identity structure, and existing elements (from old experiences) within the identity structure may become accommodated (modified) as a consequence of present transactions with the environment*.

Assimilative reappraisal may give rise to bound dissonance, as when a newly appraised situation confronting the individual results in an incompatible evaluation (dissonant element) with respect to the referent evaluation of some entity within the identity structure, which becomes incorporated into the identity structure as an

* The terms assimilation and accommodation owe much to Piaget's use of these terms. However, as noted in the discussion on the system of affective states in Chapter 5, the emphasis here is on the "emotional knowledge" of the world in contrast with cognitive-epistemological concerns of Piaget. It is, of course, recognised that assimilative and accommodative reappraisal involve the assimilation and accommodation of cognitive aspects as well.

additional and dissonant characteristic of that entity. Accommodative reappraisal may result in dissonance reduction, as when a referent belief existing within the identity structure becomes accommodated to an appraised actuality and discrepancy dissonance is thereby reduced. Since the examination of the processes of reappraisal entails consideration being given to the effects of the outcomes of the appraisal process on the identity structure, it may be helpful to restate the essential features of that structure before examining further the distinctionbetween the appraisal and reappraisl processes.

The identity structure has been described as consisting of three major systems of interest to the discussion of dissonance processes. The entity-action system is regarded as being a function of the person's direct or indirect experiences of various entities and actions, and is a system that represents, within the identity structure, the characteristics attributed to all entities and actions experienced by the individual. The construct system is described as a system of bipolar constructs (cf. Kelly) that is a function of the person's categorising processes in conjunction with his experiences; it is the system whereby entities and events within various situations are construed. The system of affective states is regarded as being a function of the person's self-referring emotional experiences; it is the system that represents all those experienced states of an emotional nature with which the individual

would wish to identify or possess on the one hand, and all those from which he would wish to dissociate on the other hand. Together, the three systems represent the psychological matrix within which the appraisal process operates and which itself becomes modified during reappraisal.

Appraisal has been described as the process whereby meaning and evaluation is given to the object or situation being appraised. It refers to the transactions between the psychological matrix (of past experiences, identifications, intentions, etc.) and the environment encountered by the individual. The appraisal process consists of the delineation of the distal stimuli (by way of the construct system) and the projection of evaluative characteristics on to the delineated elements. The outcome of this fusion provides the contents of the appraisal plane which is defined as the loci of transactions between the psychological matrix (the identity structure) and the environment.

Appraisals are regarded as excited states of the identity structure, when certain portions only are activated - these being the portions that feature during the appraisal of a certain situation. These excited states, during which transactions occur between the activated portions of the psychological matrix and the particular environment in question, are transient. The rest of the identity structure, comprising all the other experiences, intentions and identifications making up the individual's identity, remains and continues dormant.

Three modes of appraisal have been distinguished. The modal mode operates with respect to the modal self aspect of the individual's identity, and is concerned with the appraisal of configuration of associations and dissociations between entities. The volitional mode operates with respect to the volitional self aspect, and is concerned with the appraisal of effects and outcomes in relation to his identifications and intentions. Affective disturbances may result as a consequence of appraisal in both the modal and volitional modes. The comparison mode of appraisal is essentially cognitive in nature, and is concerned with the recognition of concordance or discrepancy between belief and actuality, between expectation and actuality, or between an opinion held by the self and an opinion held by another.

REAPPRAISAL

Reappraisal refers to the re-evaluation (that is, the modification and elaboration) of certain previous experiences, or present intentions and identifications as a consequence, for example, of the appraisal of a current situation or the making of a decision. Reappraisal does not always occur after the appraisal of a situation, as when, for instance, new experiences simply confirm old ones, or old experiences are so rigidly bound that they are impervious to later reinterpretation and the objects of these experiences are closed to reassessment, or unbiased appraisals of available

alternatives occur prior a decision, only after which reappraisal might occur (with regard to the latter, see Festinger, 1964, and Chapter 1 of this thesis).

In terms of the identity structure, reappraisal is the modification and elaboration of that structure, that is: the modification of old experiences and the incorporation of new ones, the modification of previously attributed characteristics of entities and the assimilation to them of new characteristics, the modification of old associations and dissociations between entities and the incorporation of further relationships, the reassessment of experienced effects and outcomes and the incorporation of further effects and outcomes, and, in general, the reassessment of beliefs and expectations in the light of further evidence or further arguments.

Reappraisal refers to the processes whereby the identity structure becomes modified such that, after reappraisal, its organization is different in some respect from what it was before. But the modification is one which occurs in a controlled and selective way. Consequently the overall configuration of the identity structure continues much as it was before. This kind of modification is in line with the definition of identity - being all that whereby the individual continues to be the same being as he was in the past, and as he anticipates his becoming in the future. The

conservation and control within the identity structure has been identified with the inhibitive energy system of the processes postulated to account for the stability of that structure (see Chapter 5). Further consideration of these processes, as they operate during the modification and elaboration of the identity structure, is given in the present chapter.

The abstraction "the appraisal plane" was formulated (see Chapter 6) to facilitate the examination of the effects of appraisal on the organization of the identity structure. Thus, the contents of the appraisal plane, considered to be the result of transactions between the psychological matrix and the environment, provide the elements for evaluative assessment against the ongoing configurations within the identity structure. All relevant evaluations in the appraisal plane that bear a relation to evaluations within the identity structure have been termed projected evaluations. Those evaluations within the identity structure to which the projected evaluations are referred, have been named referent evaluations.

Projected evaluations, being representations of the transient states of appraisal, are themselves transient, whereas the referent evaluations refer to ongoing configurations of evaluative attributes within the identity structure. The ongoing configurations may become further elaborated on the assimilation of projected evaluations into the identity fine structure*, or become modified as a consequence of

* Fine structure refers to the detailed organisation of elements within the identity structure.

the evaluative incompatibilities between the projected and referent evaluations. Such processes would be processes of reappraisal, with the former (the assimilation of projected evaluations) being referred to as assimilative reappraisal and the latter (the modification of the fine structure due to evaluative incompatibilities) being referred to as accommodative reappraisal. Both processes may, of course, operate simultaneously.

Evaluative incompatibilities between projected evaluations in the appraisal plane and referents within the identity structure will now be considered in terms of the relationships between the postulated systems of the identity structure.

Referent entity structures in the modal aspect of the identity structure have been considered in terms of their relationship to the system of affective states in Chapter 5. The attributed characteristics of such entities have been regarded as projections from the construct system. The relationship between the construct system and the system of affective states has been formalized such that the poles of the evaluative components of the bipolar constructs are conceptualized as being the loci of experienced affective states. Referent structures (made up of evaluative attributes) and corresponding referent evaluations are thereby related to the system of affective states. Similarly, referent identifications and intentions are related by way of their attributed evaluative characteristics.

Projected evaluations in the modal and volitional modes, through the projection of evaluative characteristics on to the delineated elements of the distal stimuli during appraisal, are likewise related to the system of affective states. Hence, any incompatibilities between projected and referent evaluations in the modal and volitional modes will result in affective disturbances, which have been defined as modal and volitional dissonances respectively (see Chapter 6).

Discrepancy dissonance refers to an essentially cognitive disturbance. It has been defined (Chapter 6) as the disturbance, by way of the comparison mode of appraisal, due to the cognition of the discrepancy between an expectation or belief and actuality, or the discrepancy between an opinion held by the self and the opinion held by another. In terms of the postulated systems of the identity structure, referent expectations and beliefs are represented by the strengths of the projections from the construct system on to, for example, a particular entity within the entity-action system when they are about attributed characteristics of that entity or, in general, by the strengths of the relationships between one item and another in the identity structure*.

* See the section in Chapter 5 on the construct system.

ASSIMILATIVE REAPPRAISAL

Before considering the effects of disturbances (i.e. dissonances) to portions of the identity structure, attention will be given to the assimilation into that structure of new experiences. The term "experience" is used in a broad sense to refer to any event or characteristic, arising during an encounter with the environment*, appraised as being significant by the individual.

For the modal and volitional modes of appraisal, the projected evaluations in the respective appraisal planes (the loci of transactions between the respective aspects of the identity structure and the environment) may be dissonant or consonant with respect to the referents in the identity structure. Irrespective of the nature of these projected evaluations arising during appraisal, they will become assimilated into the identity structure provided sufficient pressures exist to overcome the binding thresholds for new connections and possible internal resisting pressures**. The assimilation of new elements into portions of the identity structure is, of course, a process of further elaboration of its fine structure.

* The environment may, of course, be symbolic. The characteristic or the event may be related to the self or any other person, object, or issue.

** It will be shown shortly that the pressures for binding would have to be greater for the assimilation of dissonant compared with consonant elements.

The pressures for the assimilation of projected evaluations from the appraisal planes arise from the constructs against which the elements of the distal stimuli are delineated during appraisal. A clear and unambiguous delineation of a highly significant element against resilient constructs will result in considerable pressure for the assimilation of that element. Thus, an individual may possess the construct aggressive-unaggressive within his construct system, and another person may be appraised against this construct. Should the resulting delineation be an unambiguous projected evaluation of "aggressive", sufficient pressure is likely to derive from the construct system for the assimilation of the characteristic "aggressive" into the entity structure appertaining to the person in question, where it then features as an attribute of him, for the individual*.

The assimilation of new elements from the appraisal plane into the identity structure is defined as assimilative reappraisal. The reason for using the term reappraisal for the incorporation of new elements is that it is an ongoing configuration within the identity structure which is being further elaborated. A new element

* If sufficient pressures derive from the construct system for the binding of elements delineated during appraisal, these elements may be regarded as significant for the individual. Clearly many trivial aspects of situations encountered do not become assimilated into the identity structure and are, therefore, not significant for the individual. However, it is possible that many aspects, though insignificant at the time of original appraisal, are stored inmemory as percepts. These percepts may subsequently become appraised and assimilated as significant features into the identity structure.

assimilated into the fine structure appertaining to some entity or event, will be an extension in the number of evaluative characteristics attributed to that item, and may give rise to a change in the overall evaluation of it. Such an extension in evaluative characteristics is equivalent to a further differentiation of that item, in the sense that an additional facet of it becomes recognized (cf. object differentiation: Smith, Bruner and White, 1955), hence the assimilation of a new element is regarded as a process of reappraisal. Assimilative reappraisal, leading to further object differentiation, may involve the incorporation of dissonant elements into the referent structure of that object, and result in the establishment of continuing ambivalent feelings with respect to the entity in question.

Assimilative reappraisal may result in a change in overall evaluation of some entity, hence attitude change towards it, as when evaluatively incompatible elements become assimilated to the entity structure in question. In a similar way the process may lead to attitude formation, as when evaluative elements become assimilated to a previously unevaluated entity and an attitude is newly formed towards that entity. Assimilative reappraisal may, however, simply result in an hardening of an attitude to an entity in terms of its overall evaluation, as when the continual assimilation of evaluatively compatible elements to its structure results in

strengthening the individual's ego-involvement in it.*

ACCOMMODATIVE REAPPRAISAL

The discussion of the assimilation of new evaluative elements into the identity fine structure has so far not taken into account accommodative evaluative changes of elements already existing within the identity structure, that may occur in conjunction with the assimilative process. It will be seen that assimilative and accommodative changes in the identity fine structure are frequently very closely associated. However, the accommodative process does not necessarily occur as a counterpart of the assimilative process. Under various circumstances the assimilation of new evaluative elements into the identity fine structure is not accompanied by accommodative evaluative changes in elements already existing within the fine structure**.

* The evaluatively compatible elements may all be ones with which the individual would wish to associate, so that the overall evaluation (hence, attitude) would be a favourable one, or they may be ones from which he would wish to dissociate, so that the attitude would be an unfavourable one.

** For example, this is the case when the new elements are evaluatively compatible with the referent elements within the fine structure, also when referent elements are so internally constrained that accommodative changes in their evaluations cannot occur despite the incompatible nature of the new elements.

In general, accommodative evaluative changes of existing elements within the identity structure, are regarded as being due to the existence of dissonance. Dissonance, as defined in Chapter 6, refers to the degree of disturbance in some relevant portion of the identity structure as the result of an appraisal (definition 6.9). It is due to the disturbing effects of evaluative incompatibilities between projected evaluations in the appraisal plane and referent evaluations within the identity structure. These disturbances may be the result of affective incompatibilities in the modal and volitional modes of appraisal, or of cognitive discrepancies in the comparison mode. Clearly, then, appraisal is regarded as the process that can, though not necessarily does, arouse dissonance, and is, therefore, the process that may result in accommodative changes within the identity structure. In particular, such accommodative changes may be the consequence of the arousal of modal, volitional or discrepancy dissonances.

How accommodative changes in existing elements of the identity fine structure come about is the concern of the present section. It will be argued that the manifestation of dissonance reduction is closely associated with such accommodative changes. At this stage, appeal is made to the inhibitive energy system postulated in Chapter 5 to account for the stability of the identity structure, and to the

associated processes of conservation and control within that structure.

Thus, in the absence of appraisal, the following hypothesis was stated which refers to the processes that conserve the organization of the identity structure in its dormant states:

> The inhibition of dissipating tendencies affecting connections, intentions and identifications within the identity structure is accompanied by the continuing influx of energy under optimal conditions. The energy in question counteracts the dissipating tendencies due to pervasive general activity, maintains the organized state of the structure and sustains intentions and identifications within that structure. (Hypothesis 5.1)

In the presence of a disturbance to the identity fine structure, such that might occur during the process of appraisal as when dissonance becomes aroused, the further mobilization of energy is postulated to conserve the organization of that fine structure:

> When any part of the identity structure suffers a disturbance, additional mobilisation of energy accompanies the inhibition of disintegrating tendencies affecting

connections, intentions and identifications within the part of the structure affected. The additional mobilization of energy counteracts the disturbance suffered by the structure. (Hypothesis 5.2)

Thus, the effect of the disturbance (dissonance) is counteracted and controlled; established connections do not simply disintegrate and entity fine structures do not simply disrupt, when these are affected by disturbances. However, a change in the utilization of energy resources does occur and psychological efficiency, defined as the ratio:

$$\frac{\text{influx of energy to part structure under optimal conditions}}{\text{total influx of energy to same part structure under conditions of disturbance}}$$

(see Chapter 5), becomes decreased.

A decreased psychological efficiency denotes a less than optimally efficient use of energy resources. According to the rationale presented in Chapter 5, in particular considering the efficient operation of the control of disturbances with respect to the energy resources available, processes will operate tending to maximize psychological efficiency (hypothesis 5.3).

The definition of psychological efficiency may be rewritten as the ratio:

$$\frac{\text{influx of energy to part structure under optimal conditions}}{\text{influx of energy to same part structure under optimal condns. } \underline{\text{plus}} \text{ additional influx of energy under condns. of disturbance}}$$

(i.e. expression 6.11)

In addition, the magnitude of dissonance associated with the disturbance may be equated with the quantity of additional energy mobilized (see Chapter 6), so that psychological efficiency may be expressed as the ratio:

$$\frac{\text{influx of energy to part structure under optimal conditions}}{\text{influx of energy to same part structure under optimal condns. } \underline{\text{plus}} \text{ dissonance}}$$

(i.e. expression 6.12)

From the latter ratio it follows that the operation of the processes tending to maximize psychological efficiency would tend to decrease the relative proportion of dissonance to energy mobilized under optimal conditions. In other words, these processes will tend to

minimize the existence of dissonance*.

The magnitude of dissonance can be minimized by way of essentially two distinct, though not independent, processes. One process involves the attenuation of dissonant projected evaluations in the appraisal plane. Thus, processes operating to maximize psychological efficiency during appraisal, would tend to minimize the arousal of dissonance, by attenuating or, perhaps, eliminating the magnitude of dissonant projected evaluations. Attenuation of these projected evaluations would, of course, entail the distortion of the situation being appraised, as compared with what its appraisal would be in the absence of such attenuation. The distortion that minimizing the arousal of dissonance entails, has been examined in Chapter 6.

The other process, which will tend to operate when the arousal of dissonance cannot be eliminated**, is one of accommodation of the referent evaluations, within the identity structure, with respect to which the projected evaluations in the appraisal plane are dissonant. The referent elements in question are the loci of the

* It does not necessarily follow from expression 6.12 that the processes tending to maximize psychological efficiency will result in a decrease in dissonance, since psychological efficiency can also be maximized, by way of an increased influx of energy to the part structure in question that will continue under "optimal conditions", without any decrement in the magnitude of dissonance (see Chapters 8 and 12).

** As pointed out in Chapter 6, whether or not the arousal of dissonance can be diminished or eliminated, depends on the extent to which the situation being appraised is inherently ambiguous, and on the extent to which the constructs, against which the appraisal operates, are ambiguous and lack resilience.

disturbing effects within the identity structure and, should the constraints on them permit, evaluative changes in them will occur, such that the evaluative incompatibilities between them and the relevant projected evaluations in the appraisal plane become diminished. Thus, the operation of the processes maximising psychological efficiency will tend to lead to accommodative changes in these referents and concomitant dissonance reduction. Such a process of accommodative evaluative change in elements within the identity structure is defined as accommodative reappraisal. Dissonance reduction is seen to be closely related to this process of accommodative reappraisal.

From the above considerations, it is evident that accommodative reappraisal is a process of controlled modification of the organization of a portion of the identity fine structure, following a disturbance to that portion arising from the arousal of dissonance during appraisal. It should be noted that, though the organization of the identity structure may become modified in this sense, conservation of that organization remains, and is to be contrasted with the non-conservation that would be the result of its disintegration or dissipation in the presence of a disturbance. It is, of course, this absence of non-conservation that has required an explanation, and to which the rationale behind the concept of psychological efficiency is directed (see Chapter 5).

Though dissonance reduction tends to accompany the processes operating to maximize psychological efficiency when accommodative reappraisal occurs, the degree of accommodative evaluative changes possible will in most cases be limited by the existence of internal constraints, hence the degree of dissonance reduction will also tend to be limited and may, perhaps, be non-existent. Two types of internal constraints on elements within the identity structure may be readily distinguished. The first is simply that due to the energy invested in the established connections (i.e. binding energies), which is assumed to be the result of the original transactions with the external environment that were responsible for their establishment. It follows that the greater the binding energies, the stronger are the connections and the greater are the constraints against accommodative changes*.

The second type of internal constraint against accommodative reappraisal may arise as a consequence of certain selective predisposing pressures within the identity structure, that are associated with the concept of bound dissonance to be discussed in the following section. However, these selective pressures, as well as acting as additional constraining pressures in certain circumstances, may be ones that, in other circumstances, actually predispose certain elements within the identity structure to accommodative re-evaluation. The constraining or predisposing nature of these pressures will be discussed in the next section on "bound dissonance".

* It should be remembered from Chapter 5 that the binding energies or

(contd.)

It is evident that accommodative reappraisal, when it occurs, is a direct process of attitude change. It is a direct change in evaluation of existing beliefs, expectations, or evaluative attributes within the identity structure. It is to be contrasted with the possible indirect attitude change that would be associated with changes in overall evaluation of certain entities, that might occur on the assimilation of certain new attributes during the process of assimilative reappraisal. In the latter case, the change in overall evaluation of a certain entity would be the result of the assimilation of new evaluatively incompatible elements to the existing attributes of that entity within the identity structure. Thus, though all the previously existing attributes may be constrained against accommodative reappraisal (i.e. constrained against changes in their evaluations), the resultant overall evaluation of the entity would change on the assimilation of new dissonant elements. However, the two processes are generally not totally independent and, if constraints permit, the evaluations of certain existing elements may accommodate to some degree to the newly assimilated dissonant elements.

(contd.) the strengths of connections are themselves postulated to be maintained by the continual influx of energy, even under optimal conditions, and that the constraints depend on this. However, the strengths of the constraints depend on the magnitude of the binding energies.

ASSIMILATION OF DISSONANT ELEMENTS: BOUND DISSONANCE

The effects of dissonance on the organization of the identity fine structure have been considered following its arousal during appraisal. The arousal of dissonance is seen to result when the transactions between the psychological matrix of the individual and the environment during the appraisal process, give rise to projected evaluations in the appraisal plane that are evaluatively incompatible with their referents within the identity structure. Aroused dissonance is considered to decrease the psychological efficiency of maintaining the affected portion of the identity structure. The operation of the processes maximizing psychological efficiency, it is argued, may result in the accommodative reappraisal, internal constraints permitting, of the referent evaluations that are the loci of the disturbing effects of the aroused dissonance.

However, should the constraints be so great that accommodative reappraisal of elements within the identity structure cannot occur to any marked degree, then the decreased psychological efficiency will not be substantially maximized, but will continue for the duration of the appraisal. If, in addition, the pressures arising during the appraisal process are sufficiently great for the assimilation of the dissonant elements from the appraisal plane into the identity fine structure, the accompanying dissonance will become bound within that fine structure, and the corresponding psychological efficiency will remain low.

The assimilation, in this way, of a dissonant element (i.e. an incompatible evaluation with respect to some referent entity) is an elaboration of the identity structure, such as has been defined as assimilative reappraisal. It is also the incorporation of a disturbance under pressure of appraisal, which has not been substantially reduced, and which becomes retained within the identity structure. Thus, the dissonance, originally aroused during appraisal with respect to relevant referents, continues bound within the identity fine structure. Such continuing dissonance, that has become an established feature of that structure, is defined as bound dissonance.

It is evident that the binding of dissonance corresponds to the development of ambivalence with respect to the entity that is the locus of the dissonance. That is to say, the entity in question becomes the locus of evaluative attributes, certain of which are ones related to affective states with which the individual would wish to associate, others being related to affective states from which the individual would wish to dissociate*.

Thus, bound dissonances within the modd and volitional aspects of the identitystructure are associated with continuing affective ambivalences appertaining to certain entities, identifications and intentions. It follows that the energetics for the continuing

* It must be emphasized that such "binding of dissonance" is not necessarily permanent, and that "bound dissonance" may be subsequently reduced during reappraisals that resolve the ambivalence responsible for the dissonance.

disturbing effects of the bound dissonance to the identity fine structure containing them, derive ultimately from emotive sources. The conservation of the disturbed parts of the identity fine structure is considered to be maintained by a continuing additional influx of energy, which is dissipated in counteracting the disintegrating tendencies of the bound dissonance (i.e. applying the rationale concerning the conservation of the identity structure, developed in Chapter 5).

The continuing low psychological efficiency that the extra mobilization of energy entails, remains despite the operation of the processes tending to maximize psychological efficiency, because of the constraints that prevent the accommodative reappraisal of the relevant elements within the identity structure. (The relevant elements include those newly assimilated ones that are responsible for the establishment of bound dissonance.) It will be remembered that the constraints in question are, in the main, due to the strength of binding of the various evaluative attributes associated with the various entities, and that this applies also to the newly assimilated attributes responsible for the ambivalences*.

*It is possible that some bound dissonances may be of traumatic intensities. Thiswould be especially soif the magnitude of dissonance were large with respect to strongly ego-involved aspects of the identity structure. Such disturbed aspects would be the loci of extreme mobilizations of energy, which could well result in low psychological efficiency for the identity structure <u>taken as a whole</u>. The intense sub-excited states of such bound dissonances in the identity structure may erupt into excited states and dominate current appraisals. Such domination may, perhaps, be autistic thinking, hallucinatory appraisals, etc. (The distinction between <u>sub-excited</u> and excited states has been given in Chapter 5.)

Bound dissonances, then, continue within the identity structure and are responsible for continuing low psychological efficiencies with respect to maintaining affected fine structures and sustaining affected intentions or identifications (dissonance can be bound in both the modal and volitional aspects of the identity structure). The effects of bound dissonance have a bearing on future appraisals, where such appraisals involve the activation of elements within the fine structure containing the bound dissonances, and on the assimilation of new elements to affected portions of the fine structure during assimilative reappraisal. Bound dissonance may also interact with dissonance aroused during an appraisal, and have constraining or predisposing effects on the extent of possible consequent accommodative reappraisal of existing elements within the fine structure. These various possible effects of bound dissonance receive consideration in the following section.

EFFECTS OF BOUND DISSONANCE ON FUTURE APPRAISALS AND REAPPRAISALS

In general, bound dissonances within an individual's identity structure will correspond to all the various experienced affective incompatibilities, or continuing ambivalences, with respect to a whole host of persons, issues, events, identifications and intentions. Incompatibilities between projected evaluations in the appraisal plane and referent evaluations within the identity structure, will

be everyday occurrences, and, on their assimilation, many will continue to feature as bound dissonances corresponding to internalized ambivalent feelings towards the referent entities or identifications, etc.

The presence of bound dissonance associated with referent evaluations that become activated during some future appraisal, may have the effect of distorting that appraisal. Thus, if a referent to a projected evaluation during appraisal is already the locus of bound dissonance, the operation of the processes tending to maximize psychological efficiency will tend to minimize the arousal of additional dissonance or, if possible, to reduce the bound dissonance that is already present. Since the presence of additional dissonant projected evaluations with respect to the referent in question, would give rise to the arousal of additional dissonance, there will be a tendency for their strengths to be attenuated. In other words, these dissonant projected evaluations of aspects of the situation will tend to be under-evaluated. On the other hand, should the projected evaluations be consonant ones, they will enable the bound dissonance already present to be decreased, and, hence, will tend to become over-evaluated.

Such under- and over-evaluations would, of course, be selective distortions of the various aspects of the situation being appraised, in accordance with the operation of the processes tending to

maximise the psychological efficiency associated with the ongoing configuration within the identity fine structure. The extent of such distortions would naturally depend on the extent to which the relevant constructs, against which the situation is delineated, would constrain the appraisal against misrepresentation*.

* It is important to remember that dissonant projected evaluations refer to ones which are evaluatively incompatible with respect to the referent within the identity structure. Thus, many dissonant projected evaluations with respect to unfavourably evaluated referent entities, will be ones that would be highly acceptable to the individual if they were projected evaluations with respect to some other favourably evaluated referent. In other words, the distortion of certain aspects of some situations, will involve the under-evaluations of what, in other circumstances, would be desirable aspects. More concretely for example, if the "Nigger" is disliked (referent evaluation: unfavourable), but the normal appraisal of him in a particular situation wouldbe that he is intelligent (projected evaluation: favourable), then the dissonant projected evaluation of "intelligent" with respect to the referent evaluation, would tend to be attenuated such that it is under-evaluated; unless to do this were impossible, in which case the attenuation might take the form of a different delineation of the situation, such that the projected evaluation becomes one of an unfavourably evaluated "deviousness". It is in these ways that the distortion of appraisal is a selective one.

As well as the distortion of appraisal, in which certain aspects of the appraised situation might be under-evaluated and certain others might be over-evaluated, there is also likely to be a selective bias in the assimilation of newly appraised elements into the fine structure appertaining to an entity that is the locus of bound dissonance. Thus, new projected evaluations that arise during appraisal, which are consonant with respect to the referent evaluation of that entity, would, if assimilated, reduce the magnitude of the bound dissonance. The operation of the processes tending to maximize psychological efficiency, with the associated pressure to reduce bound dissonance, will evidently predispose the identity fine structure to assimilate such consonant elements. The pressures arising from the processes maximizing psychological efficiency are, therefore, such that new consonant elements will tend to become over-assimilated into the relevant fine structure containing the bound dissonance. On the other hand, since the assimilation of new additional dissonant elements would increase the magnitude of bound dissonance, the psychological efficiency pressures would tend to resist such assimilation, and new dissonant elements would tend to be under-assimilated to the fine structure in question. The predisposing or resisting pressures, whichever the case may be, are, of course, ones that are additional to those that would give rise to the assimilation of new elements in the absence of bound dissonance.

EFFECTS OF BOUND DISSONANCE ON ACCOMMODATIVE REAPPRAISAL FOLLOWING THE AROUSAL OF DISCREPANCY DISSONANCE

Certain beliefs and expectations, as elements within the identity fine structure, may contribute to the compatibility or incompatibility of evaluative characteristics associated with a particular entity. If that entity is the locus of bound dissonance, these beliefs and expectations are likely to contribute to the dissonant and consonant nature of the elements associated with it (the dissonant elements being the ones responsible for the bound dissonance).

It is quite probable that, in the context of future appraisals, some of these beliefs and expectations may feature as referents in the comparison mode, against which actuality or some other opinion is appraised. Should discrepancies exist between these referent beliefs or expectations, and the actuality or other opinion, then discrepancy dissonance will be aroused. It has been argued that the arousal of dissonance will tend to be followed by the accommodative reappraisal of the relevant referents, which, in this case, would be the referent beliefs or expectations.

The degree of accommodative reappraisal of a particular referent belief or expectation will be a function of the pressures arising during appraisal, and a function also of the internal constraints, and possibly predisposing pressures, acting upon that belief or expectation. The extent of the pressures arising from

the appraisal will depend on the situation, and on the constructs against which the distal stimuli are delineated. The internal pressures will be of two kinds, the first being the constraint of the strength of binding of the existing referent belief or expectation, and the second being a consequence of the presence of bound dissonance in the entity fine structure to which the referent in question is associated. Thus, with regard to the latter, beliefs and expectations which contribute to consonant elements, associated with bound dissonance, will suffer internal pressures that tend to resist the effects of discrepancy dissonances, if the discrepancies are in the direction of reducing the contributions to consonance. Thus, my belief that Jo, whom I admire, is able to solve most problems resists re-evaluation towards disbelief when Jo is discovered not to be able to solve problems in a particular instance. Here, discrepancy dissonance is aroused by the discrepancy between my belief and the actuality of the particular instance. The accommodative reappraisal of my belief to the discrepancy is resisted by the contribution to modal consonance of the association (the belief) between "Jo" and "the ability to solve most problems".

Conversely, those beliefs and expectations which contribute to dissonant elements will suffer internal pressures that tend to assist the effects of discrepancy dissonances, if the discrepancies are in the direction of reducing the contributions to bound dissonance. Thus, my belief that Jo, whom I admire, is disliked by my friends is

more than readily re-evaluated when I discover that Jo is liked by another of my friends. Discrepancy dissonance is again aroused by the discrepancy between my belief and the actuality of the particular instance. However, in this case, the accommodative reappraisal of my belief to the discrepancy is assisted by the contribution to modal dissonance of the dissociation (the belief) between "Jo" and "my friends".

The internal pressures in both cases derive from the processes tending to maximize psychological efficiency with respect to the entity structure ("Jo") which is the locus of bound dissonance.

The outcome, in the presence of bound dissonance, of these internal pressures will be: a tendency for beliefs and expectations to become <u>under-accommodated</u> when they contribute to <u>consonant</u> elements and the discrepancies are such as would lessen their contribution; or for them to become <u>over-accommodated</u> when they contribute to dissonant elements and the discrepancies are such as would reduce the bound dissonance.

<u>CONFLICTING PRESSURES DUE TO THE INTERACTION BETWEEN DISCREPANCY, MODAL, AND VOLITIONAL DISSONANCES</u>

In so far as modal and volitional aspects of an individual's identity are related in the same expectation or belief, <u>conflicting</u> internal pressures due to bound dissonance may interact with discrepancy dissonance.

For example, I hold the belief that Bill, whom I dislike, is wrecking my chances for promotion. I identify with and evaluate favourably "promotion". With respect to the volitional aspect of my identity, my belief about Bill's effects on my promotion is incompatible with my identification with promotion. Dissonance is bound in the volitional mode. With respect to the modal aspect of my identity on the other hand, the dissociation (belief) between "promotion" and "Bill" is compatible with my favourable evaluation of promotion and with my unfavourable evaluation of Bill.

One day I am given a report that Bill has been observed to speak in favour of my promotion. The discrepancy between my belief and this actuality gives rise to discrepancy dissonance and pressures to accommodate my belief towards the actuality.

That belief, which contributes to a dissonant element, suffers internal pressures that assist the effect of discrepancy dissonance, if the discrepancy is in the direction of reducing the contribution to bound dissonance. This is true for the dissonance bound in the volitional mode. The report that Bill has been observed to speak in favour of my promotion is a discrepancy between belief and actuality that is in the direction of reducing the dissonance with respect to my identification with promotion. In the <u>volitional mode</u>, therefore, pressures <u>assist</u> the accommodation of my belief towards the actuality.

In the modal mode, however, the original belief contributes to consonant elements - Bill, whom I dislike, is dissociated from my promotion. A belief which contributes to consonant elements will suffer internal pressures that will resist the effects of discrepancy dissonance, if the discrepancy is in the direction of reducing the contribution to consonance. Therefore, in the modal mode pressures resist the accommodation of my belief towards the actuality.

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In this particular example the internal pressures arising in the volitional mode assist, but those arising in the modal mode resist, the pressures to minimize discrepancy dissonance. Such interaction between three modes of dissonance (discrepancy, volitional and modal dissonances) would here actively mitigate against any kind of consistency - the pressures to reduce discrepancy dissonance are assisted and resisted at the same time; the pressure to reduce volitional dissonance is resisted by the pressure operating against the arousal of additional dissonance in the modal mode. As stated previously, this kind of conflict undermines any explanation of dissonance phenomena in terms of a consistency principle.

Evidence that such interaction does occur will be examined in Chapter 11 when examples from the literature willbe interpreted according to the present analysis. One example is interpreted as an interaction between the modal and volitional modes. The other is interpreted as an interaction between the comparison and volitional modes. Chapter 13 describes an experiment performed to test predictions in a situation where the three modes would be interacting.

Chapters 9, 10 and 11 are concerned with an explicit analysis, using mathematical notation, of the arousal and reduction of discrepancy dissonance, modal dissonance and volitional dissonance.

It will be seen that conflicts between modes of dissonance reduction, in addition to the constraints of binding energies, can mitigate against actual dissonance reduction in one or another mode. Under certain circumstances, reduction of dissonance in one mode will lead to an increase in dissonance in another. Thus volitional dissonance with respect to an individual's intention may become reduced at the expense of an increase in modal dissonance with respect to his past evaluations of certain entities. For modal dissonance to be reduced these entities would have to be re-evaluated. Whether they are or not would depend on the constraints associated with them (e.g. how many strongly evaluated characteristics attributed to them, etc.). If they do become re-evaluated this would be an example of accommodative reappraisal and attitude change brought about through the individual's future orientation and pursuit of his intention.

SUMMARY

Reappraisal is distinguished as a process that may, but does not necessarily, follow on the process of appraisal. It refers to the modification and elaboration of the identity structure and to the associated re-evaluation of previous experiences or present intentions and identifications that might follow the process of appraisal.

The modification of the identity structure, it is argued, proceeds in a controlled and selective way in accordance with the conservation of the structure maintained by the processes operating in conjunction with the inhibitive energy system postulated in Chapter 5. Projected evaluations, the contents of the appraisal plane which represent the excited and transient states of appraisal, may become incorporated into or lead to modification of aspects of the identity structure. Such changes in the identity fine structure would be processes of reappraisal.

Disturbances to the identity structure may be volitional or modal (affective) dissonances due to the incompatibilities between projected and referent evaluations arising during the volitional or modal modes of appraisal, or they may be due to discrepancy dissonances arising from the cognition of discrepancies between belief or expectation and actuality or between the self's opinion and some other's opinion.

Provided that the pressures of appraisal are sufficient to overcome binding thresholds, new elements (projected evaluations), whether consonant or dissonant, may become incorporated into the identity structure. The incorporation of elements from the appraisal plane into the identity structure is defined as <u>assimilative reappraisal</u>.

Appraisal may give rise to projected evaluations that are dissonant with respect to their referents within the identity

structure. The associated disturbances to the identity structure are considered in relation to the processes that conserve the organization of the fine structure against the dissipative or disintegrative tendencies arising from the disturbances. Such disturbances are related to decreased psychological efficiencies of the affected portions of the fine structure. The arousal of dissonance is thereby related to lowered psychological efficiency.

The control and reduction of dissonance achieved by way of accommodation of the fine structure to the disturbance is associated with the process of maximizing psychological efficiency. The accompanying change in evaluation of an affected referent within the identity structure is defined as <u>accommodative reappraisal</u>.

When substantial accommodative reappraisal cannot immediately occur following the arousal of dissonance, psychological efficiency will be low. If, in addition, pressures arising during appraisal are great enough for the incorporation of the responsible dissonant elements into the identity fine structure, then the dissonance continues and psychological efficiency with respect to the affected fine structure remains low. The continuing dissonance associated with the assimilation of a dissonant element is defined as <u>bound</u> dissonance.

Bound dissonance is held to have certain consequences for future appraisals, which are due to the processes operating to

maximize psychological efficiency during appraisal in the presence of bound dissonance. Possible distortions of appraisal might be the over-evaluation of projected evaluations that are consonant with respect to the referent which is the locus of bound dissonance, conversely the under-evaluation of dissonant projected evaluations. Assimilative reappraisal would be affected in a like manner, with over-assimilation of consonant elements and under-assimilation of dissonant elements.

With respect to the pressures of discrepancy dissonance in the presence of bound dissonance, there will be a tendency for beliefs and expectations to be under-accommodated when they contribute to consonant elements and the discrepancies are such as would lessen their contribution, or for them to become over-accommodated when they contribute to dissonant elements and the discrepancies are such as would reduce the bound dissonance.

The conflicting pressures that may arise due to the interaction between discrepancy, modal, and volitional dissonances are discussed. Such conflicting pressures derived on theoretical grounds are considered to undermine any explanation of dissonance phenomena in terms of a consistency principle. Finally, it is noted that, under certain circumstances, dissonance reduction in one mode may lead to an increase in dissonance in another mode.

PLAN OF THE FOLLOWING CHAPTERS

Chapters 8, 9, 10 and 11 elaborate the contents of Chapters 5, 6 and 7 and introduce algebraic notation in an effort to make as explicit as possible the previous analysis. Chapters 12 and 13 report experiments which have been performed to test predictions derived from the theoretical considerations of the previous chapters.

Chapter 8 goes on to consider dissonance processes concerning decisions and choice alternatives, and examines the process of post-decision dissonance reduction. The experimental test of the theoretical propositions in that chapter is reported in Chapter 12.

Chapters 9, 10 and 11, however, are concerned with processes of appraisal and reappraisal that have nothing to do with choice alternatives and decisions. These chapters consider the three modes of appraisal (modal, volitional, and comparison) and their interaction. Chapter 13 reports the experimental testing of theoretical predictions derived from the theory contained in these chapters.

Since the analysis of Chapter 8 does not overlap with the analysis of Chapters 9, 10 and 11, continuity in reading this thesis may be maintained by either reading Chapter 8 then Chapter 12, or by omitting Chapter 8 at this stage, going on directly to Chapters 9, 10 and 11, and then on to Chapter 13.

SECTION II: NEW THEORY

A THEORY OF APPRAISAL AND REAPPRAISAL: AN EXTENDED REFORMULATION OF DISSONANCE THEORY

CHAPTER 8 DECISION PROCESSES

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INTRODUCTION

In Chapter 3 note is taken of the way in which the traditional approach of dissonance theory to the decision situation is limited to dissonance arousal as a consequence of making a decision. The pre-decision state of affairs, according to Festinger (1964, see also Chapter 3 of this thesis), is one of conflict which is resolved by the act of decision, only after which do dissonance processes operate (in the form of dissonance reduction).

In this chapter the decision situation is considered in terms of the appraisal process prior to the act of decision, the decision process itself, and the subsequent process of reappraisal. According to the theory of the decision process outlined here, the act of decision is dependent on the arousal of dissonance, which occurs during the pre-decision appraisal, with respect to each available alternative.

During the course of the exposition given here, the process of "decision reversal" (see Chapter 1 of this thesis) is given a firmer theoretical status within the context of dissonance processes, and two necessary conditions for "decision reversal" are postulated. The possibility of post-decision dissonance reduction, as a consequence of the process operating to maximize psychological efficiency, is also considered and, although this is held to be a frequent consequence, it is demonstrated that, under certain conditions, the maximizing of psychological efficiency can result in increases in post-decision dissonance.

The following is an outline of the sequence of psychological processes postulated as occurring from the time of the individual's encounter with the possible alternatives, through the moment of his decision, to the time of possible post-decision reappraisal of the alternatives.

It is assumed that the individual approaches a decision situation with certain aims or intentions, and that the decision to be taken depends on the appraisal of possible effects and outcomes in relation to the pursuit of these intentions, that would result from following one course of action rather than another. For example, an individual who is faced with finding a new job may have two basic aims or intentions (1) of obtaining a high salary, and (2) of pursuing his own interests. He may come across two posts, A and B, that he might choose between. Post A offers a high salary, good promotion prospects, convenient hours, and is in a desirable locality, but does not offer any opportunity for him to pursue his own interests. Post B, on the other hand, provides plenty of opportunity for the individual's interests but the salary offered is low, the hours inconvenient, and the locality unpleasant, though promotion prospects are good. Together, these alternative posts provide the context in which the appraisal of possible effects and outcomes with respect to the individual's intentions takes place. Appraisal of post A with respect to the intention of obtaining a high salary would result in the delineation of certain

possible outcomes associated with that post. Similarly for post B with respect to the intention of pursuing his own interests.

Since the individual has various desires about these possible outcomes, such that certain ones would be desirable whilst others would be undesirable, each alternative would be appraised as consisting of both desirable and undesirable possible outcomes in relation to the specific intention associated with each. Thus, in appraising post A associated with the individual's intention to obtain a high salary, the desirable outcomes would be: the high salary offered, the good promotion prospects, the convenient hours, and the desirable locality; the undesirable outcome would be the lack of any opportunity to pursue interests. In appraising post B the desirable outcomes associated with the intention of pursuing own interests would be: plenty of opportunity for the individual's interests and good promotion prospects; the undesirable outcomes would be low salary, inconvenient hours, and the unpleasant locality. The possible outcomes listed are, of course, imposed by the external environment consisting, here, of the two alternative posts. The desirable or undesirable nature of the outcome is, however, dependent on the individual's evaluation of them (e.g. inconvenient hours for one person may be quite convenient for another, etc.).

Appraisal of the possible outcomes of <u>not</u> pursuing the one intention (say, own interests) would, it is postulated, occur in conjunction with the appraisal of the possible outcomes related to

the pursuit of the other intention (high salary). Appraisal in relation to not pursuing own interests in the context of post B, would result in the desirable outcomes of not having to work inconvenient hours, not working for a low salary, and not living in an unpleasant locality. In the present example, the appraisal of one choice (i.e. following one course of action and rejecting the other) would therefore entail, within the context of the two posts, appraisal with respect to the pursuit of the one intention and with respect to the negation of the other. Appraisal of the second choice would entail appraisal with respect to the second intention and with respect to the negation of the first.

Given the alternative courses of action, either accepting post A and rejecting post B or accepting post B and rejecting A, the pre-decision appraisal of each choice would result in incompatibilities between the pursuit of a particular intention and the appraised effects that this would entail. Following the analysis of Chapter 6, the incompatibilities between appraised outcomes and referent intentions would result in the arousal of dissonance. Since the appraisal is in the volitional mode (i.e. with respect to the pursuit of intentions and the future orientation of identity), it is volitional dissonance that is aroused.

According to the relationship (6.12) between psychological efficiency and dissonance, the arousal of volitional dissonance results in a decrease in psychological efficiency with respect to

the volitional aspect of the identity structure associated with the referent intentions. A decrease in psychological efficiency is, therefore, associated with the disturbance to the identity structure due to the appraisal of each choice, for the duration of the appraisal.

In general, the decreases in psychological efficiency associated with the appraisal of each choice (i.e. the potential acceptance of one course of action and the rejection of others) would differ, such that the appraisal of one choice would result in a decrease less than the decreases resulting from the appraisal of the others. According to hypothesis 5.4, given the existence of alternatives confronting the individual, a decision process will operate at maximal psychological efficiency. In other words, that choice, the appraisal of which results in the least decrease in psychological efficiency and hence, which is maximally psychologically efficient compared with the other choices, becomes by the decision process the individual's actual choice.

After the decision, appraisal of the actual choice differs from the pre-decision appraisal. Whereas before the act of decision, the appraised possible effects and outcomes associated with each choice were anticipated ones, after the decision certain desirable and undesirable ones become actually associated with the resultant choice. The resulting incompatibilities therefore give rise to post-decision dissonance bound to the actual choice. It is during

the assimilation of these incompatible attributes of the decision into the identity structure, that the process of maximizing psychological efficiency may operate resulting, possibly, in post-decision reappraisal and dissonance reduction.

In all, there are three main phases of the decision process: the pre-decision appraisal of the alternatives, the act of decision, and the post-decision reappraisal of the alternatives. The decision process will now be examined in greater detail in terms of the dissonant or consonant nature of the projected evaluations resulting from the appraisal process with respect to the referent intentions.

PRE-DECISION APPRAISAL

The pre-decision appraisal process is regarded as the excited state of the identity structure, during which transactions occur between certain postions of that structure and the environmental situation providing the decision alternatives. It is dependent on the construct sytem for the delineation of the distal stimuli (i.e. the component aspects of the decision alternatives that confront the individual), and also on the activation of the evaluative relationships between the self and the delineated possible outcomes, which become projected on to the delineated distal stimuli. The "projected evaluations" which are the result of these transactions are regarded, in abstraction, as occurring in the

"appraisal plane" which represents the loci of transactions between the identity structure and the environment. Since the pre-decision appraisal occurs in relation to the pursuit of certain intentions, and is concerned with effects and outcomes with respect to them, it is the volitional mode of appraisal which is in operation during the decision processes.

For the volitional mode a referent intention is defined (6.5) as an intention on the part of the individual which features in the context of an appraisal (e.g. the intention of obtaining a high salary for the individual faced with finding a new job), and a projected evaluation is defined (6.6) as the resultant evaluation of an effect or outcome (actual or potential) in the appraisal plane in relation to the referent (e.g. the evaluation of the potential outcome "good promotion prospects" in relation to the intention of obtaining a high salary).

The notation $\underline{u}(a_1 p)'$ is introduced to express the delineation of the relationship between an entity, a_1, associated with a decision alternative and the referent intention, p. The relationship may be associative or dissociative, and is taken to range in value from +1, representing complete association, to -1, representing complete dissociation.

As an example, a_1 might be the entity "convenient hours" and p the referent intention "to obtain a high salary" associated with post A. In this case, given that the relationship is completely

associative, $\underline{u}(a_1p)'$ would equal plus one.

Since the relationship is imposed by the context of the decision alternative, $\underline{u}(a_1p)'$ is regarded as a directional (i.e. non-reciprocal) relationship in which a_1 would result in an outcome imposed by the context of the situation in relation to the referent intention p, but in which p would have no effect in relation to a_1. (Thus, post A imposes the outcome "convenient hours" in relation to the referent intention"to obtain a high salary", but that intention does not affect the "convenient hours" associated with postA). The (') in $\underline{u}(a_1p)'$ indicates that the directional relationship is from a_1 to p*.

In an appraisal of a decision alternative various relationships may be delineated between a number of entities a_1, a_2, a_3, ...and a particular referent intention p associated with that alternative, i.e.

$\underline{u}(a_1p)'$, $\underline{u}(a_2p)'$, $\underline{u}(a_3p)'$, ...

Some of these may be associative, others dissociative. Clearly, the degree or probability of association or dissociation may vary from entity to entity.

* The peculiarities of the notation introduced here conform to the usage in Chapter 12 on volitionalappraisal. For the purpose of this chapter the relationships may be regarded as simply associative and dissociative, since in the analysis of the decision processes the directional aspect has little practical importance.

The appraisal of the elements is completed by the activation, and projection from the identity structure, of the relationships between the self and the entities, which are delineated as being in associative or dissociative relationship with the referent intention. The resultant projected evaluations in the appraisal plane may be dissonant or consonant with respect to the referent intention. Using the same notation as above and indicating the self by a_0, the activated relationships between the self and the delineated entities are represented as follows:

$\underline{u}(a_0a_1)'$, $\underline{u}(a_0a_2)'$, $\underline{u}(a_0a_3)'$, ...

The resultant projected evaluations of the potential effects and outcomes in relation to the referent intention, imposed by a decision alternative would therefore be given by:

$\underline{u}(a_0a_1)'\underline{u}(a_1p)'$, $\underline{u}(a_0a_2)'\underline{u}(a_2p)'$,

$\underline{u}(a_0a_3)'\underline{u}(a_3p)'$, ...

For example, let $\underline{u}(a_1p)'$ represent the association of "convenient hours", a_1, with the intention "to obtain a high salary", p, imposed by the appraisal of post A, and let $\underline{u}(a_0a_1)'$ represent the activation of the associative relationship (i.e. a relationship that is desired by the individual) between the self and "convenient hours", then the projected evaluation of the potential outcome "convenient hours" associated with post A would be $\underline{u}(a_0a_1)'\underline{u}(a_1p)'$, a favourable one in relation to the referent intention.

A disturbance to the volitional aspect of the identity structure will result if there are incompatibilities between the activated projected evaluations of the appraisal plane and the referents within the identity structure. The magnitude of dissonance aroused is postulated as depending on (hypothesis 6.10):

a direct relation to the degree of ego-involvement in, or importance to the individual of, the referent;

a direct relation to the perceived relevance or salience of the referent in the context of the appraisal;

a direct relation to the number and strength of dissonance elements with respect to the referent;

an inverse relation to the number and strength of consonant elements with respect to the referent.

Denoting the strength of ego-involvement in the referent p by G(p), the perceived relevance of the referent in the context of the situation by r(p), the strength of the i-th. dissonant element by d_i, and the strength of the j-th. consonant element by c_j, the following expression for the magnitude of aroused dissonance conforms with the hypothesis stated above:

$$D(p) = G(p)r(p) \frac{\text{Sigma}_i \; d_i}{\text{Sigma}_j \; c_j} \qquad 8.1$$

where D(p) denotes that the locus of aroused dissonance is the referent p.

From definition 6.7, a dissonant element is defined as a projected evaluation which is incompatible with respect to the referent. In the context of the pre-decision appraisal, an unfavourable projected evaluation $\underline{u}(a_0a_i)'\underline{u}(a_ip)'$ is one which is incompatible with the favourable evaluation of the referent intention, and is therefore dissonant with respect to the referent.

Similarly, a consonant element (definition 6.8) is defined as a projected evaluation which is compatible with respect to the referent, hence, a favourable projected evaluation $\underline{u}(a_0a_j)'\underline{u}(a_jp)'$ is one which is compatible with the favourable evaluation of the referent intention and is, therefore, consonant with respect to the referent.

In the example of the individual faced with finding a new job, the following would be the projected evaluations with respect to the intention"to obtain a high salary" (referent intention p) associated with post A:

Table 8.1

delineated entity: a_k	activation of self's relationship to the delineated entity*: $\underline{u}(a_0a_k)'$	relationship of delineated entity to referent p imposed by decision alternative+ (post A): $\underline{u}(a_kp)'$	projected evaluation $\underline{u}(a_0a_k)'\underline{u}(a_kp)'$ dissonant or consonant with respect to the referent p**.
high salary	$\underline{u}(a_0a_1)'$ (+)	$\underline{u}(a_1p)'$ (+)	(+) consonant
promotion prospects	$\underline{u}(a_0a_2)'$ (+)	$\underline{u}(a_2p)'$ (+)	(+) consonant
convenient hours	$\underline{u}(a_0a_3)'$ (+)	$\underline{u}(a_3p)'$ (+)	(+) consonant
desirable locality	$\underline{u}(a_0a_4)'$ (+)	$\underline{u}(a_4p)'$ (+)	(+) consonant
own interests	$\underline{u}(a_0a_5)'$ (+)	$\underline{u}(a_5p)'$ (-)	(-) dissonant

* (+) represents an association, (-) a dissociation; the strength of a relationship is indicated by the magnitude of $\underline{u}(\quad)'$.

** (+) represents a favourable projected evaluation, (-) an unfavourable projected evaluation; the strength of the dissonant or consonant elements is indicated by the magnitude of $/\underline{u}(\quad)'\underline{u}(\quad)'/$.

With the strength of ego-involvement in the referent intention "to obtain a high salary" given by G(p) and the perceived relevance of that intention to the decision alternative (post A) given by r(p), the magnitude of the aroused dissonance would be (from expression 8.1):

$$D(p) = G(p)r(p)\frac{/\underline{u}(a_0a_5)'\underline{u}(a_5p)'/}{/\underline{u}(a_0a_1)'\underline{u}(a_1p)'/+/\underline{u}(a_0a_2)'\underline{u}(a_2p)'/ + /\underline{u}(a_0a_3)'\underline{u}(a_3p)'/+/\underline{u}(a_0a_4)'\underline{u}(a_4p)'/} \qquad 8.2$$

For convenience this is written as:

$$D(p) = G(p)r(p)Q(p) \qquad 8.3$$

in which Q(p) refers to the ratio of dissonant to consonant elements in expression 8.2.

A similar table (Table 8.2) may be given for the projected evaluations in relation to the intention "to pursue own interests" (referent intention q) associated with the decision alternative, post B.

Table 8.2 (appraisal of decision alternative: post B)

delineated entity: a_k	activation of self's relationship to the delineated entity: $\underline{u}(a_0a_k)'$	relationship of delineated entity to referent q imposed by decision alternative (post B): $\underline{u}(a_kq)'$	projected evaluation $\underline{u}(a_0a_k)'\underline{u}(a_kq)'$ dissonant or consonant with respect to the referent q
high salary	$\underline{u}(a_0a_1)'$ (+)	$\underline{u}(a_1q)'$ (-)	(-) dissonant
promotion prospects	$\underline{u}(a_0a_2)'$ (+)	$\underline{u}(a_2q)'$ (+)	(+) consonant
convenient hours	$\underline{u}(a_0a_3)'$ (+)	$\underline{u}(a_3q)'$ (-)	(-) dissonant
desirable locality	$\underline{u}(a_0a_4)'$ (+)	$\underline{u}(a_4q)'$ (-)	(-) dissonant
own interests	$\underline{u}(a_0a_5)'$ (+)	$\underline{u}(a_5q)'$ (+)	(+) consonant

The magnitude of aroused dissonance associated with the appraisal of the second decision alternative (post B) would be (from expression 8.1)

$$D(q)=G(q)r(q)\ \frac{/\underline{u}(a_0a_1)'\underline{u}(a_1q)'/+/\underline{u}(a_0a_3)'\underline{u}(a_3q)'/+/\underline{u}(a_0a_4)'\underline{u}(a_4q)'/}{/\underline{u}(a_0a_2)'\underline{u}(a_2q)'/+/\underline{u}(a_0a_5)'\underline{u}(a_5q)'/} \qquad 8.4$$

in which G(q) is the strength of ego-involvement in the referent intention "to pursue own interests", and r(q) is the perceived relevance of the referent to the decision alternative, post B. Again, for convenience this is abbreviated to:

$$D(q) = G(q)r(q)Q(q) \qquad 8.5$$

in which Q(q) refers to the ratio of dissonant to consonant elements in expression 8.4.

Expressions 8.3 and 8.5 refer to the magnitudes of dissonance aroused during the appraisal of the possible outcomes, given the context of the decision alternatives, with respect to the referent intentions "to obtain a high salary" and "to pursue own interests" respectively. In addition, it is held that dissonance will be aroused as a consequence of the appraisal of the possible outcomes resulting from the <u>rejection</u> (or negation) of the intention that the pursuit of the other would entail. Thus, the favourable projected evaluations of outcomes "high salary", "promotion prospects", etc. would be incompatible with the unfavourable referent evaluation of <u>negating</u> the intention "to obtain a high salary" associated with the decision alternative, post A. On the other hand, the unfavourable projected evaluation of "no opportunity for own interests" would be compatible with that negation.

By reference to Table 8.1, it is seen that projected evaluations which are consonant with respect to the referent intention "to obtain a high salary" become dissonant with respect to the negation of that intention, whilst the dissonant element becomes consonant, given the constraints of the decision alternative, post A. The magnitude of dissonance aroused with respect to the negation of the referent intention p is therefore given by

$$D(-p) = G(p)r(p)\frac{1}{Q(p)} \qquad 8.6$$

where $D(-p)$ denotes that the locus of aroused dissonance is the negation of intention p, and in which $1/Q(p)$ is the reciprocal of the ratio of dissonant to consonant elements appearing in expression 8.3.

Likewise, the magnitude of dissonance aroused as a consequence of appraisal with respect to the negation of the referent intention q ("to pursue own interests" - see Table 8.2) is given by:

$$D(-q) = G(q)r(q)\frac{1}{Q(q)} \qquad 8.7$$

in which $1/Q(q)$ is the reciprocal of the ratio of dissonant to consonant elements appearing in expression 8.5.

It follows from expressions 8.3 and 8.7 that the total dissonance aroused during the appraisal of the choice:- acceptance of post A and rejection of post B, would be:

$$D(p, -q) = D(p) + D(-q)$$

$$= G(p)r(p)Q(p) + G(q)r(q)\frac{1}{Q(q)} \qquad 8.8$$

where $D(p, -q)$ denotes that the locus of aroused dissonance is that portion of the identity structure containing the intention p, and the negation of intention q.

The total dissonance aroused during the appraisal of the choice:- acceptance of post B and rejection of post A is obtained by summing expressions 8.5 and 8.6, i.e.

$$D(q, -p) = D(q) + D(-p)$$
$$= C(q)r(q)Q(q) + C(p)r(p)\frac{1}{Q(p)} \qquad 8.9$$

THE DECISION PROCESS

The arousal of dissonance with respect to one referent intention and with respect to the negation of the other, consequent upon the appraisal of each choice, results in decreased psychological efficiency of the portion of the identity structure associated with the referents. This follows from expression 6.12 in which psychological efficiency is given as the ratio:

$$\frac{\text{influx of energy to part structure under optimal conditions}}{\text{influx of energy to same part structure plus dissonance under optimal condns.}} \qquad (6.12)$$

in which dissonance is equated with the quantity of additional energy mobilized to counter the disturbance to the identity structure.

It is now further assumed that the magnitude of ego-involvement in a referent is equivalent to the amount of energy invested in that referent*, in other words, that the degree of ego-involvement in an intention corresponds to the energy invested in maintaining that intention. (From which it would follow that the greater the energy invested in maintaining a particular intention, the greater would be the ego-involvement in it, or the more important it would be to the individual.)

Since the part structure which is the locus of the disturbance arising from the pre-decision appraisal consists of the referent intentions, the influx of energy maintaining that part structure under optimal conditions is the energy invested in maintaining those intentions. Thus, the influx of energy to the part structure under optimal conditions, assuming the equivalence with ego-involvement, is given by:

$$G(p) + G(q) \qquad 8.10$$

which is the sum of the ego-involvements of the two referent intentions.

The resulting psychological efficiency due to the pre-decision appraisal of the first choice:- <u>acceptance of post A and rejection of post B</u> would therefore be given by: (substituting in 6.12):

$$\frac{G(p) + G(q)}{(G(p) + G(q)) + D(p, -q)} \qquad 8.11$$

* Due regard should be given to the consideration of units.

where the dissonance aroused is given by expression 8.8 ($D(p, -q) = D(p) + D(-q)$).

Pre-decision appraisal of the other choice:- acceptance of post B and rejection of post A would result in a psychological efficiency of:

$$\frac{G(p) + G(q)}{(G(p) + G(q)) + D(q, -p)} \qquad 8.12$$

where the dissonance aroused during the appraisal is given by expression 8.9 ($D(q, -p) = D(q) + D(p)$).

The decision process, according to hypothesis 5.4, operates at maximal psychological efficiency, which means that that choice, the appraisal of which results in the maximum psychological efficiency compared with any other available choice, becomes, by the decision process, the actual choice.

Thus, according to the present analysis, for the example of the individual looking for a new job and faced with the alternative posts A and B, the actual choice made by him would be determined by whichever of the expressions 8.11 and 8.12 (for psychological efficiency) were the greater.

It is at once clear from inspection of 8.11 and 8.12 that the expressions for psychological efficiency differ only in the dissonance term (i.e. $D(p, -q)$ as compared with $D(q, -p)$), and that it is the appraisal of that choice which results in the least aroused dissonance that corresponds to the maximum psychological efficiency in

the decision situation. In other words, the decision principle may be stated as:

that choice, the predecision appraisal of which results in the arousal of the least magnitude of dissonance compared with any other available choice, becomes, by the operation of the decision process, the actual choice made by the individual.

EXAMPLES OF DECISION SITUATIONS

In order to illustrate some of the features of the preceding analysis, a few examples are now given in which values are assumed for the elements of appraisal of imaginary choices, from which the magnitudes of aroused dissonances corresponding to those choices are calculated, and in which the decision principle is applied.

(1) A decision between alternatives with favourable and unfavourable attributes, in which the common attributes are differentially associated with or dissociated from the alternatives.

An example of this type of situation would be the one in which two alternative posts, A and B, confront the individual seeking a new job. The individual whose basic intentions are: to obtain a high salary (referent p); and to pursue own interests (referent q), is confronted with two posts which offer the following:-

post A: a high salary,
good promotion prospects,
convenient hours,
a desirable locality,
no opportunity for own interests;

post B: a low salary,
good promotion prospects,
inconvenient hours,
an unpleasant locality,
plenty of opportunity for own interests.

Table 8.3 summarizes the state of affairs for the individual, and gives assumed values for the ego-involvements in the referent intentions and for the self's relationships to the delineated entities. The relationships of the delineated entities to their respective referents are given in terms of complete association (+1) or complete dissociation (-1) corresponding to the descriptions of the two posts.

Table 8.3 Decision example (1) (compare with tables 8.1 and 8.2)

delineated entity: a_k	activation of self's relationship to the delineated entity: $\underline{u}(a_0 a_k)'$	relationship of delineated entity to: referent p imposed by decision alternative, post A: $\underline{u}(a_k p)'$	referent q imposed by decision alternative, post B: $\underline{u}(a_k q)'$
high salary	+ 0.5	+ 1.0	- 1.0
promotion prospects	+ 0.5	+ 1.0	+ 1.0
convenient hours	+ 0.3	+ 1.0	- 1.0
desirable locality	+ 0.2	+ 1.0	- 1.0
own interests	+ 1.0	- 1.0	+ 1.0

ego-involvement in referent intention (p)
"to obtain a high salary": $G(p) = 5$ units

ego-involvement in referent intention (q)
"to pursue own interests": $G(q) = 10$ units

From the expression for aroused dissonance, and in particular from expression 8.2 which has been given for post A, together with the assumed values given in Table 8.3, the magnitude of aroused dissonance with respect to the referent intention p becomes:

$$D(p) = S(p)r(p)Q(p) \qquad (8.3)$$

$$= (5)\,(1.0)\frac{(1.0)(1.0)}{(0.5)(1.0) + (0.5)(1.0) + (0.3)(1.0) + (0.2)(1.0)}$$

$$= (5)(0.667)$$

$$= 3.3 \quad \text{dissonance units} \qquad 8.13$$

Note that r(p), the perceived relevance of the referent intention to the decision alternative is taken to be unity (i.e. completely relevant). Note also that the magnitude of the ratio of dissonant to consonant elements is:

$$Q(p) = 0.667 \qquad 8.14$$

Dissonance aroused by the pre-decision appraisal with respect to the <u>negation</u> of the referent p is given by expression 8.6:

i.e. $$D(-p) = S(p)r(p)\frac{1}{Q(p)}$$

$$= (5)(1.0)\frac{1}{0.667} \qquad \text{(from 8.14)}$$

$$= 7.5 \quad \text{dissonance units} \qquad 8.15$$

By substituting from table 8.3 into expression 8.4, the magnitude of aroused dissonance with respect to the referent intention q associated with the decision alternative, post B, is:

$$D(q) = C(q)r(q)Q(q) \qquad (8.5)$$

$$= (10)(1.0)\,\frac{(0.5)(1.0) + (0.3)(1.0) + (0.2)(1.0)}{(0.5)(1.0) + (1.0)(1.0)}$$

$$= (10)(0.667)$$

$$= 6.7 \text{ dissonance units} \qquad 8.16$$

In the above, the perceived relevance of the referent intention q to the decision alternative istaken to be unity, and the ratio of dissonant to consonant elements with respect to the referent q is:

$$Q(q) = 0.667 \qquad 8.17$$

Dissonance aroused by the pre-decision appraisal with respect to the negation of the referent q is given by the expression 8.7, i.e.

$$D(-q) = C(q)r(q)\frac{1}{Q(q)}$$

$$= (10)(1.0)\frac{1}{0.667} \qquad \text{(from 8.17)}$$

$$= 15.0 \text{ dissonance units} \qquad 8.18$$

It follows from expressions 8.13 and 8.18 that the total dissonance aroused during the pre-decision appraisal of the choice:- acceptance of post A and rejection of post B would be (c.f. expression 8.8):

$$D(p, -q) = D(p) + D(-q)$$

$$= 3.3 + 15.0$$

$$= 18.3 \text{ dissonance units} \qquad 8.19$$

The total dissonance aroused during the pre-decision appraisal of the choice:- acceptance of post B and rejection of post A would be from 8.16 and 8.15 (c.f. expression 8.9):

$$D(q, -p) = D(q) + D(-p)$$
$$= 6.7 + 7.5$$
$$= 14.2 \text{ dissonance units} \qquad 8.20$$

At this point the decision principle may be applied, in which that choice, the pre-decision appraisal of which results in the arousal of the least magnitude of dissonance compared with any other choice, becomes, by the operation of the decision process, the actual choice made by the individual. By comparing the result 8.19 with 8.20 it is seen that the magnitude of $D(q, -p)$ is less than the magnitude of $D(p, -q)$, and that therefore the choice made, consistent with the decision process, would be: acceptance of post B and rejection of post A. That is, the accepted post would be the one offering plenty of opportunity for own interests, good promotion prospects, but a low salary, inconvenient hours and an unpleasant locality.

It should be noted that the prediction of the decision, by being based on the dissonances aroused both with respect to a possible accepted alternative as well as with respect to the corresponding possible rejected alternative, depends on the degree of ego-involvement in the referent intentions in addition to the magnitude of dissonant and consonant elements. Thus, it may be thought that predictions could just as well be based on a simple

summation of the positive and negative attributes of each decision alternative but, in practice, such predictions would differ quite often from those based on the decision theory presented here.

For example, in the above case, the summated value of the positive attributes of alternative A is: 0.5 + 0.5 + 0.3 + 0.2 = 1.5 (values from table 8.3), and that of the single negative attribute is -1.0. The resultant value of alternative A, on the basis of a simple summation, would therefore be: 1.5 - 1.0 = 0.5.

Likewise, on this basis, the summated value of the positive attributes of alternative B, is 0.5 + 1.0 = 1.5 (values again from table 8.3), whilst that of the negative attributes is -0.5 -0.3 -0.2=-1.0, from which the resultant value of alternative B would work out to be: 1.5 - 1.0 = 0.5.

Thus, while the analysis according to the dissonance approach predicted that alternative A would be chosen, that based on simple summation would predict that both alternatives should be equally acceptable, since the resultant values of both work out to be identical. Clearly, this is one case in which a prediction based on summated values differs from that based on the proposed decision theory.

(2) A decision between alternatives with favourable and unfavourable attributes, in which the attributes are not all common to both alternatives.

Decision alternatives need not necessarily have any attributes in common, but frequently it will be the case that certain common

attributes exist, though they may be differentially associated with or dissociated from the alternatives and that, in addition, certain other attributes may be related to one alternative but not to the other. Such would be the case if, in the previous example, good promotion prospects were related to post A, but no information about promotion prospects existed in relation to post B. Thus, conforming to the present kind of example is the case in which the two alternative posts confronting the individual seeking a new job are:-

post A: a high salary,
good promotion prospects,
convenient hours,
a desirable locality,
no opportunity for own interests;

post B: a low salary,
inconvenient hours,
an unpleasant locality,
plenty of opportunity for own interests.

Using the same assumed values as before, the situation is again summarized by table 8.3 (for decision example (1)), except for one modification, which is that the $\underline{u}(a_k q)'$ for "promotion prospects" is zero, instead of +1 as in the previous example.

The magnitude of pre-decision aroused dissonance with respect to the referent intention p related to post A, is the same as for example (1), and is given by result 8.13, i.e.

$$D(p) = G(p)r(p)Q(p)$$

$$= (5)(0.667)$$

$$= 3.3 \text{ dissonance units} \qquad 8.21$$

Similarly, the magnitude of dissonance aroused with respect to the negation of the referent p, is given by the result 8.15, i.e.

$$D(-p) = G(p)r(p)\frac{1}{Q(p)}$$

$$= (5)\frac{1}{0.667}$$

$$= 7.5 \text{ dissonance units} \qquad 8.22$$

The magnitude of dissonance with respect to intention q resulting from the appraisal of post B, is not the same as for example (1), but is given by:

$$D(q) = G(q)r(q)Q(q)$$

$$= (10)(1.0)\frac{(0.5)(1.0) + (0.3)(1.0) + (0.2)(1.0)}{(1.0)(1.0)}$$

$$= (10)(1.000)$$

$$= 10.0 \text{ dissonance units} \qquad 8.23$$

Dissonance aroused by the pre-decision appraisal with respect to the negation of the referent q, is given by:

$$D(-q) = G(q)r(q)\frac{1}{Q(q)}$$

$$= (10)\frac{1}{1.000}$$

$$= 10.0 \text{ dissonance units} \qquad 8.24$$

The total dissonance aroused during the pre-decision appraisal of the choice:- acceptance of post A and rejection of post B becomes:

$D(p, -q) = D(p) + D(-q)$ (from 8.21 and 8.24)

$= 3.3 + 10.0$

$=$ 13.3 dissonance units 8.25

The summation of the results 8.23 and 8.22, gives the total dissonance aroused during the pre-decision appraisal of the choice:- acceptance of post B and rejection of post A:

$D(q, -p) = D(q) + D(-p)$

$= 10.0 + 7.5$

$=$ 17.5 dissonance units 8.26

In this example, the choice made in conformity with the decision principle would be: acceptance of post A and rejection of post B, since the magnitude of $D(p, -q)$ (result 8.25) is less than the magnitude of $D(q, -p)$ (result 8.26).

(3) A decision between alternatives involving simple preferences only, in which no additional attributes exist.

This is the case in which the alternatives available correspond to the individual's preferences, uncomplicated by any additional attributes. The decision would be such that the individual, naturally, chooses that alternative which corresponds to his greatest preference. This kind of case would usually be regarded as trivial, but the example is included here to illustrate that, for

this limiting case of simple preferences, the present analysis results in conclusions identical with those based on simple preferences.

Given the assumed values of the previous examples for ego-involvement in the referent intentions "to obtain a high salary" ($G(p) = 5$ units) and "to pursue own interests" ($G(q) = 10$ units), the individual's simple preference would be for a post offering plenty of opportunity for own interests (but lacking a high salary), compared with one offering a high salary (but with no opportunity for own interests), if no other attributes were appraised in relation to either post. This situation is summarized in table 8.4.

In this example, the reasonable assumption is made of proportionality between the strength of the activated relationship of the self to a delineated entity, and the degree of ego-involvement in the intention corresponding to that entity, i.e.

(1) the strength of the activated relationship of the self to "high salary", is proportional to the degree of ego-involvement in the intention"to obtain a high salary",

(2) the strength of the activated relationship of the self to "own interests" is proportional to the degree of ego-involvement in the intention "to pursue own interests".

Table 8.4 Decision example (3)

delineated entity: a_k	activation of self's relationship to the delineated entity: $\underline{u}(a_0a_k)'$	relationship of delineated entity to: referent p imposed by decision alternative, post A: $\underline{u}(a_kp)'$	referent q imposed by decision alternative, post B: $\underline{u}(a_kq)'$
a_1: high salary	$\underline{u}(a_0a_1)'$ + 0.5	$\underline{u}(a_1p)'$ + 1.0	$\underline{u}(a_1q)'$ - 1.0
a_2: own interests	$\underline{u}(a_0a_2)'$ + 1.0	$\underline{u}(a_2p)'$ - 1.0	$\underline{u}(a_2q)'$ + 1.0

ego-involvement in referent intention (p) "to obtain a high salary": G(p) = 5 units

ego-involvement in referent intention (q) "to pursue own interests": G(q) = 10 units

For post A the magnitude of aroused dissonance withrespect to the referent p is:

$D(p) = G(p)r(p)Q(p)$ (in which Q(p) is the ratio of dissonant to consonant elements with respect to the referent p)

$$= G(p)r(p)\frac{/\underline{u}(a_0a_2)'\underline{u}(a_2p)'/}{/\underline{u}(a_0a_1)'\underline{u}(a_1p)'/}$$

$$= G(p)\cdot\frac{/\underline{u}(a_0a_2)'/}{/\underline{u}(a_0a_1)'/} \qquad 8.27$$

(since the magnitudes of $\underline{u}(a_2p)'$ and $\underline{u}(a_1p)'$ are both unity,

and r(p), the perceived relevance of the referent intention to the decision alternative, is taken to be unity.)

Dissonance aroused by the pre-decision appraisal withrespect to the negation of the referent p, is therefore given by:

$$D(-p) = C(p)r(p)\frac{1}{Q(p)}$$

$$= C(p)\frac{/\underline{u}(a_0a_1)'/}{/\underline{u}(a_0a_2)'/} \qquad \text{(where Q(p) is the ratio in expression 8.27)} \qquad 8.28$$

For post B the magnitude of dissonance aroused by the pre-decision appraisal with respect to the referent q is:

$$D(q) = C(q)r(q)Q(q)$$

$$= C(q)r(q)\frac{/\underline{u}(a_0a_1)'\underline{u}(a_1q)'/}{/\underline{u}(a_0a_2)'\underline{u}(a_2q)'/}$$

$$= C(q)\frac{/\underline{u}(a_0a_1)'/}{/\underline{u}(a_0a_2)'/} \qquad 8.29$$

With respect to the negation of referent q the pre-decision dissonance is:

$$D(-q) = C(q)r(q)\frac{1}{Q(q)}$$

$$= C(q)\frac{/\underline{u}(a_0a_2)'/}{/\underline{u}(a_0a_1)'/} \qquad 8.30$$

Total dissonance aroused during the pre-decision appraisal of the choice:- acceptance of post A and rejection of post B, is given by:

$$D(p, -q) = D(p) + D(-q)$$

$$= C(p)\frac{/\underline{u}(a_0a_2)'/}{/\underline{u}(a_0a_1)'/} + C(q)\frac{/\underline{u}(a_0a_2)'/}{/\underline{u}(a_0a_1)'/}$$

(from 8.27 and 8.30)

$$= \frac{/\underline{u}(a_0a_2)'/}{/\underline{u}(a_0a_1)'/}\ (\ C(p) + C(q)\ ) \qquad 8.31$$

Total dissonance aroused during the pre-decision appraisal of the choice;- <u>acceptance of post B and rejection of post A</u>, is given by:

$$D(q, -p) = D(q) + D(-p)$$

$$= C(q)\frac{/\underline{u}(a_0a_1)'/}{/\underline{u}(a_0a_2)'/} + C(p)\frac{/\underline{u}(a_0a_1)'/}{/\underline{u}(a_0a_2)'/}$$

(from 8.29 and 8.28)

$$= \frac{/\underline{u}(a_0a_1)'/}{/\underline{u}(a_0a_2)'/}\ (\ C(q) + C(p)\ ) \qquad 8.32$$

Whichever of the expressions 8.31 and 8.32 is less than the other, corresponds to the actual choice, following the operation of the decision process according to the decision principle. Thus, if $D(p, -q)$ is <u>less than</u> $D(q, -p)$ then the actual choice would be: <u>acceptance of post A and rejection of post B</u>. This would be the case if

$$\frac{/\underline{u}(a_0a_2)'/}{/\underline{u}(a_0a_1)'/}\ (C(p) + C(q))\ \underline{\text{is less than}}\ \frac{/\underline{u}(a_0a_1)'/}{/\underline{u}(a_0a_2)'/}\ (C(q) + C(p))$$

that is, if

$$\frac{/\underline{u}(a_0a_2)'/}{/\underline{u}(a_0a_1)'/} \quad \underline{\text{is less than}} \quad \frac{/\underline{u}(a_0a_1)'/}{/\underline{u}(a_0a_2)'/}$$

that is, if

$$/\underline{u}(a_0a_2)'/^2 \quad \underline{\text{is less than}} \quad /\underline{u}(a_0a_1)'/^2$$

that is, if

$$/\underline{u}(a_0a_2)'/ \quad \underline{\text{is less than}} \quad /\underline{u}(a_0a_1)'/ \qquad 8.33$$

Similarly the choice would be: <u>acceptance of post B and rejection of post A</u>, if

$$/\underline{u}(a_0a_1)'/ \quad \underline{\text{is less than}} \quad /\underline{u}(a_0a_2)'/ \qquad 8.34$$

In the example condition 8.34 holds, thus post B offering plenty of opportunity for own interest (but lacking a high salary) would be the one accepted by the individual.

Since the strength of the activated relationship of the self to "high salary" ($/\underline{u}(a_0a_1)'/$) is proportional to the degree of ego-involvement in the intention to "obtain a high salary" (G(p)), and the strength of the activated relationship of the self to "own interests" ($/\underline{u}(a_0a_2)'/$) is proportional to the degree of ego-involvement in the intention to "pursue own interests" (G(q)), condition 8.34 is equivalent to the condition

$$G(p) \quad \underline{\text{less than}} \quad G(q), \qquad 8.35$$

that is, post B is chosen in accordance with simple preferences.

(The corresponding magnitudes of dissonance aroused during pre-decision appraisal are: 30 dissonance units for the choice:-

acceptance of post A and rejection of post B; and 7.5 dissonance units for the choice:- acceptance of post B and rejection of post A. These are calculated from expressions 8.31 and 8.32 respectively, using the values in table 8.4).

(4) A decision between negative alternatives (i.e. alternatives which the individual would wish to avoid), involving simple preferences of avoidance only.

An example of a choice between negative alternatives would be one in which an individual has the choice of paying up a large debt or going to gaol. It is assumed that the individual has the referent intentions:

(p) to avoid paying a large debt,

(q) to avoid going to gaol.

The referent evaluations of these intentions are, of course, favourable corresponding to the desirable state of affairs that would result from the fulfilment of them.

The decision to be made would be between:

alternative A: non-payment of debt and going to gaol; and

alternative B: not going to gaol and payment of debt.

Table 8.5 summarizes the situation and indicates the dissonant and consonant elements associated with each alternative with respect to the appropriate referent intention.

Table 8.5 Decision example (4)

delineated entity:	activation of self's relationship to the delineated entity:	relationship of delineated entity to:	projected evaluation:
a_k	$\underline{u}(a_0 a_k)'$	referent p imposed by decision alternative A: $\underline{u}(a_k p)'$	$\underline{u}(a_0 a_k)'\underline{u}(a_k p)'$ dissonant or consonant with respect to the referent p
debt	$\underline{u}(a_0 a_1)'$ (-)	$\underline{u}(a_1 p)'$ (-)	(+) consonant
gaol	$\underline{u}(a_0 a_2)'$ (-)	$\underline{u}(a_2 p)'$ (+)	(-) dissonant
a_k	$\underline{u}(a_0 a_k)'$	referent q imposed by decision alternative B: $\underline{u}(a_k q)'$	$\underline{u}(a_0 a_k)'\underline{u}(a_k q)'$ dissonant of consonant with respect to the referent q
debt	$\underline{u}(a_0 a_1)'$ (-)	$\underline{u}(a_1 q)'$ (+)	(-) dissonant
gaol	$\underline{u}(a_0 a_2)'$ (-)	$\underline{u}(a_2 q)'$ (-)	(+) consonant

ego-involvement in referent intention (p)
"to avoid paying a large debt": G(p)

ego-involvement in referent intention (q)
"to avoid going to gaol": G(q)

The magnitude of aroused dissonance with respect to the referent intention p during the pre-decision appraisal of alternative A, is given by

$$D(p) = G(p)r(p)Q(p)$$

in which Q(p) is the ratio of dissonant to consonant elements indicated in the upper portion of table 8.5, i.e.

$$D(p) = G(p)r(p)\ \frac{/\underline{u}(a_0a_2)'\underline{u}(a_2p)'/}{/\underline{u}(a_0a_1)'\underline{u}(a_1p)'/}$$

Assuming that the perceived relevance of the referent to alternative A, r(p), has the value unity, and that $\underline{u}(a_1p)'$ and $\underline{u}(a_2p)'$ refer to complete dissociation and complete association respectively, the above becomes:

$$D(p) = G(p)\ \frac{/\underline{u}(a_0a_2)'/}{/\underline{u}(a_0a_1)'/} \qquad 8.35$$

In a like manner, it will be seen that the magnitude of aroused dissonance with respect to the referent intention q during the pre-decision appraisal of alternative B, is given by (referring to the lower portion of table 8.5):

$$D(q) = G(q)\ \frac{/\underline{u}(a_0a_1)'/}{/\underline{u}(a_0a_2)'/} \qquad 8.36$$

It will be noted that expressions 8.35 and 8.36, for the present example of a decision involving simple preferences of avoidance, are algebraically identical with the corresponding expressions 8.27 and 8.29 of the previous example for a decision involving

simple (favourable) preferences. Continuing the algebraic analysis, it follows that the total dissonances aroused during the pre-decision appraisal of the choices available, will be given by expressions 8.31 and 8.32, i.e.

for the choice:- acceptance of alternative A and rejection of alternative B

$$D(p, -q) = D(p) + D(-q)$$

$$= \frac{/\underline{u}(a_0a_2)'/}{/\underline{u}(a_0a_1)'/} \left(G(p) + G(q) \right) \qquad (8.31)$$

for the choice:- acceptance of alternative B and rejection of alternative A

$$D(q, -p) = D(q) + D(-p)$$

$$= \frac{/\underline{u}(a_0a_1)'/}{/\underline{u}(a_0a_2)'/} \left(G(q) + G(p) \right) \qquad (8.32)$$

Assuming the following values:

ego-involvement in the referent intention p

"to avoid paying a large debt" $G(p) = 10$ units;

ego-involvement in the referent intention q

"to avoid going to gaol" $G(q) = 7$ units;

and the corresponding proportionalities of the activated relationship of:

self to "debt" - a dissociation $\underline{u}(a_0a_1)' = -1.0$,

self to "gaol" - a dissociation $\underline{u}(a_0a_2)' = -0.7$;

then $D(p, -q) = 11.9$ dissonance units

and D(q, -p) = 24.2 dissonance units.

For these values the choice made, according to the decision principle of least dissonance, would be: acceptance of alternative A, that is, the non-payment of debt and going to gaol. This decision, as expected, is in line with the simple preferences of avoidance, the preference "to avoid paying a large debt" being greater than the preference "to avoid going to gaol".

(5) A decision between negative alternatives in which additional attributes feature.

To illustrate this case it will be sufficient to consider a modification of one of the decision alternatives of the previous example by way of an additional attribute. Thus, it is assumed that the individual with referent intentions:

(p) to avoid paying a large debt,

(q) to avoid going to gaol,

is confronted by a choice between:

alternative A: non-payment of debt,
going to gaol, and
losing job; and

alternative B: not going to gaol, and
payment of debt.

The situation is summarized in table 8.6; dissonant and consonant elements associated with each alternative with respect to the appropriate referent intention are indicated, and assumed values for the delineated and activated relationships are given.

Table 8.6 Decision example (5)

delineated entity:	activation of self's relationship to the delineated entity:	relationship of delineated entity to:	projected evaluation:
a_k	$\underline{u}(a_0 a_k)'$	referent p imposed by decision alternative A: $\underline{u}(a_k p)'$	$\underline{u}(a_0 a_k)' \underline{u}(a_k p)'$ dissonant or consonant with respect to the referent p
debt	- 1.0	- 1.0	+ 1.0 consonant
gaol	- 0.7	+ 1.0	- 0.7 dissonant
job	+ 0.7	- 1.0	-0.7 dissonant
a_k	$\underline{u}(a_0 a_k)'$	referent q imposed by decision alternative B: $\underline{u}(a_k q)'$	$\underline{u}(a_0 a_k)' \underline{u}(a_k q)'$ dissonant or consonant with respect to the referent q
debt	- 1.0	+ 1.0	- 1.0 dissonant
gaol	- 0.7	- 1.0	+ 0.7 consonant

ego-involvement in referent intention (p)

"to avoid paying a large debt": $G(p) = 10$ units

ego-involvement in referent intention (q)

"to avoid going to gaol": $G(q) = 7$ units

Dissonance aroused by the pre-decision appraisal of alternative A with respect to the referent intention p, is given by

$$D(p) = G(p)r(p)Q(p)$$

$$= (10)(1.0)\ \frac{(0.7 + 0.7)}{(1.0)} \qquad \text{(from upper portion of Table 8.6)}$$

$$= (10)(1.40)$$

$$= 14.0 \text{ dissonance units} \qquad 8.37$$

Dissonance aroused by the pre-decision appraisal with respect to the negation of the referent p, is given by:

$$D(-p) = G(p)r(p)\ \frac{1}{Q(p)}$$

$$= (10)(1.0)\ \frac{1}{1.40}$$

$$= 7.1 \text{ dissonance units} \qquad 8.38$$

Dissonance aroused by the pre-decision appraisal of alternative B with respect to the referent intention q, is given by:

$$D(q) = G(q)r(q)Q(q)$$

$$= (7)(1.0)\ \frac{(1.0)}{(0.7)} \qquad \text{(from lower portion of Table 8.6)}$$

$$= (7)(1.43)$$

$$= 10.0 \text{ dissonance units} \qquad 8.39$$

Dissonance aroused by the pre-decision appraisal with respect to the negation of the referent q, is given by:

$$D(-q) = G(q)r(q)\frac{1}{Q(q)}$$

$$= (7)(1.0)\frac{1}{1.43}$$

$$= 4.9 \text{ dissonance units} \qquad 8.40$$

Therefore, summing result 8.37 and result 8.40, the total dissonance aroused during the pre-decision appraisal of the choice:- acceptance of alternative A andrejection of alternative B is:

$$D(p, -q) = D(p) + D(-q)$$

$$= 14.0 + 4.9$$

$$= \underline{18.9 \text{ dissonance units}} \qquad 8.41$$

The total dissonance aroused during the pre-decision appraisal of the choice:- acceptance of alternative B and rejection of alternative A is obtained by summing results 8.39 and 8.38:

$$D(q, -p) = D(q) + D(-p)$$

$$= 10.0 + 7.1$$

$$= \underline{17.1 \text{ dissonance units}} \qquad 8.42$$

By comparing the results 8.41 and 8.42, and applying the decision principle of least dissonance, it is seen that by a small margin the choice made would be: acceptance of alternative B, that is, not going to gaol, and payment of the debt.

THE DECISION PROCESS WHEN MORE THAN TWO AVAILABLE ALTERNATIVES CONFRONT THE INDIVIDUAL

The preceeding analysis was made and the illustrative examples were given for situations involving two decision alternatives. The analysis may be readily generalized to situations comprising any number of possible alternatives.

Thus, let the referent intentions with respect to the appraisal of <u>three</u> alternatives, A, B and C, be denoted by p, q and r*.

The dissonance aroused during the pre-decision appraisal of alternative A with respect to the referent p, is given by:

$D(p) = G(p)r(p)Q(p)$ (i.e. expression 8.3)

where G(p) is the ego-involvement in the referent p, r(p) is the perceived relevance of the referent to the decision alternative A, and Q(p) is the ratio of dissonant to consonant elements associated with alternative A with respect to the referent p.

The dissonance aroused during the pre-decision appraisal with respect to the negation of the referent intention p is given by:

$$D(-p) = G(p)r(p)\frac{1}{Q(p)}$$ (i.e. expression 8.6)

Pre-decision dissonances aroused with respect to the remaining intentions (i.e. D(q), D(r)) and their negation (i.e.D(-q), D(-r)) in association with the corresponding decision alternatives may be similarly expressed.

* The analysis is here extended to <u>three</u> alternatives and demonstrates how it can be extended to include further alternatives.

The total dissonance aroused during the pre-decision appraisal of the choice (A):- acceptance of alternative A, rejection of alternatives B and C, is therefore given by (c.f. expression 8.8):

$$D(p, -q, -r) = D(p) + D(-q) + D(-r) \qquad 8.42$$

$$= G(p)r(p)Q(p) + G(q)r(q)\frac{1}{Q(q)} + G(r)r(r)\frac{1}{Q(r)} \qquad 8.43$$

For the choice (B):- acceptance of alternative B, rejection of alternatives A and C, the total aroused pre-decision dissonance is likewise given by:

$$D(q, -p, -r) = D(q) + D(-p) + D(-r) \qquad 8.44$$

And for the choice (C):- acceptance of alternative C, rejection of alternatives A and B, the total aroused pre-decision dissonance is given by:

$$D(r, -p, -q) = D(r) + D(-p) + D(-q) \qquad 8.45$$

The corresponding psychological efficiencies due to the pre-decision appraisal of the available choices are (c.f. expressions 8.11 and 8.12):

for choice A (using result 8.42)

$$\text{psychological efficiency} = \frac{G(p) + G(q) + G(r)}{G(p) + G(q) + G(r) + D(q, -p, -r)} \qquad 8.46$$

For choice B (using result 8.44)

$$\text{psychological efficiency} = \frac{G(p) + G(q) + G(r)}{G(p) + G(q) + G(r) + D(p, -q, -r)} \qquad 8.47$$

for choice C (using result 8.45)

$$\text{psychological efficiency} = \frac{G(p) + G(q) + G(r)}{G(p) + G(q) + G(r) + D(r, -p, -q)} \qquad 8.48$$

The decision process operates at maximal psychological efficiency, that is, that choice, the pre-decision appraisal of which results in the maximum psychological efficiency compared with any other available choice becomes, by the decision process, the actual choice.

As with the two alternative decision situations, the expressions for psychological efficiency (8.46, 8.47, and 8.48) differ only in the dissonance term (i.e. $D(p, -q, -r)$, $D(q, -p, -r)$, $D(r, -p, -q)$), therefore the decision principle remains the same as before, i.e.

that choice, the pre-decision appraisal of which results in the arousal of the least magnitude of dissonance compared with any other available choice becomes, by the operation of the decision process, the actual choice made by the individual.

"POST DECISION REGRET" AND DECISION REVERSAL

In an experiment by Festinger and Walster (in Festinger 1964: see also Chapter 1 of the thesis) evidence is produced of the phenomenon of decision reversal, in which a definite choice is made between two alternatives, immediately after a decision in essence* is made between them, which goes counter to the evaluations of those two alternatives. According to Festinger the possibility of "decision reversal" is a consequence of "post decision regret" due

* In the experiment, the "decision in essence" is achieved by getting (contd.)

to the salience, immediately the decision is made, of all the negative aspects of the chosen alternative and all the positive aspects of the rejected alternative.

The view taken in the present formulation is that, under certain conditions, the pre-decision appraisal of the total decision situation may break down and that this will result in "decision reversal". These conditions have to do with the dissonances aroused as a consequence of the pre-decision appraisal of the component possible accepted alternative, and of the corresponding possible rejected alternatives of a choice.

Following through the analysis of the previous section, the pre-decision appraisal of one choice would, on the operation of the decision process, lead to the acceptance of that choice, if the aroused dissonance associated with it were less than that for the other choices. During the operation of the decision process the nature of the available alternatives undergoes change, such that one of them tends towards actual acceptance, and the others tend towards actual rejection. It follows, therefore, that aroused dissonances with respect to the acceptance of the one and the rejection of the others, becomes salient for the particular choice in question.

Since the aroused dissonance is a disturbance to the identity structure, it follows that the greater the dissonance (i.e. the greater the disturbance) the greater would be the experienced tension and, it is assumed, the greater would be the salience of the

(contd.) the subject to rank the relevant alternatives in the knowledge that he will subsequently choose between them.

component of the appraisal giving rise to that dissonance.

It may be that, for the choice tending towards actuality during the operation of the decision process, the dissonance aroused with respect to one of the alternatives tending toward rejection is greater than the dissonance aroused with respect to the alternative tending towards acceptance. For example, in a three-alternative decision situation, the total pre-decision dissonance for the choice tending towards actuality, D(p, -q, -r), may be made up of component dissonances such that D(-q) is greater than D(p), where "p" corresponds to the potentially accepted alternative and "q" to one of the potentially rejected alternatives.

The greater dissonance associated with the potential rejection of the one alternative (due to the rejection of the desirable attributes of that alternative), would result in that alternative becoming relatively high in salience, in which case appraisal may become fixated upon it to the momentary exclusion of the other alternatives. In such a state of affairs, the continuing appraisal of the total decision context may break down. Following such breakdown, the appraisal of the alternative in question may vacillate between one of possible rejection and one of possible acceptance.

If the dissonance aroused by the appraisal of its possible acceptance D(q) is less than the dissonance aroused by its possible rejection D(-q), then the decision process may operate within the limited context of the one component of the decision situation, and the

alternative become actually accepted. The consequent decision would therefore be a "decision reversal", that is, a decision in which an alternative that, in the context of pre-decision appraisal of the total decision situation would have been rejected, is instead accepted on the basis of appraisal with respect to that alternative alone.

The two necessary conditions for "decision reversal" that would have to be satisfied may be formally stated as:

(1) $D(-q)$ greater than $D(p)$

(2) $D(-q)$ greater than $D(q)$

in which $D(p)$ is the dissonance aroused with respect to a potentially accepted alternative in a choice, $D(-q)$ is the dissonance aroused with respect to a corresponding potentially rejected alternative, and $D(q)$ is the dissonance aroused with respect to the potential acceptance of that alternative featuring as potentially rejected in the choice*.

* In decision example (1) of this chapter, the pre-decision dissonance of the choice:- acceptance of post A and rejection of post B, using assumed values, was given as:

$$D(p, -q) = D(p) + D(-q)$$
$$= 3.3 + 15.0$$
$$= 18.3 \text{ dissonance units} \qquad (8.19)$$

The pre-decision dissonance of the choice:- acceptance of post B and rejection of post A was given as:

$$D(q, -p) = D(q) + D(-p)$$
$$= 6.7 + 7.5$$
$$= 14.2 \text{ dissonance units} \qquad (8.20)$$

In addition, the degree to which the decision alternatives are thought through by the individual is also likely to be a major factor affecting decision reversal (as is stressed by Festinger), since the breakdown in the appraisal of the total context of the decision situation, which gives rise to the possibility of decision reversal, is much less likely when considerable thought has been given to all aspects of the situation.

POST-DECISION REAPPRAISAL

The state of affairs existing after the operation of the decision process, is quite different from that of the pre-decision appraisal. Pre-decision appraisal involves the projection of evaluations on to the delineated elements of the decision situation, and the arousal of dissonance with respect to the referent intentions and their negation. The accompanying decreases in psychological efficiency associated with each appraised choice are regarded as being sampled during the operation of the decision process, such that the maximally psychological efficient choice is favoured. The operation of the process of maximizing psychological efficiency (hypothesis 5.3) during the pre-decision appraisal would be incompatible with this sampling process,

(contd.) According to the decision principle, the latter choice would normally become the actual choice. Here, it is seen that for the pre-decision appraisal of the second choice,
(1) D(-p) is greater than D(q)
(2) D(-p) is greater than D(p)
hence that "decision reversal" is possible and post A might become accepted instead of post B. However, in this example, the discrepancy between D(-p) and D(q) is small, hence decision reversal is unlikely.

hence there would be an absence of distorting and accommodating pressures (Chapter 7) prior to the decision (i.e. whilst recognising the subjective nature of the projected evaluations, the pre-decision appraisal may nevertheless be regarded as "impartial", in that there is no distortion of the component aspects of the decision alternatives)*.

When the decision is made, however, the context of the appraised situation becomes structured in a different way. Alternative courses of action are no longer openly available; instead one alternative is now the course of action to be pursued (or is now the accepted alternative), and the others are rejected. Dissonance with respect to the choice made continues to be present, but its nature with respect to the psychological processes operating within the identity structure is different. It is now bound to the actuality of one particular choice, whereas prior to the decision it is aroused in conjunction with the pre-decision appraisal of other possible choices.

Post-decision dissonance does not feature in a sampling process for maximal psychological efficiency, during which distorting pressures are absent. Instead, it contributes to an ongoing decreased psychological efficiency of the portion of the identity

* This coincides with the view held by Festinger (1964) that the pre-decision process consists of the impartial evaluation of the available information.

structure associated with the referent intentions. It is therefore subject to the pressures of the processes operating to maximize psychological efficiency.

The existence of post-decision dissonance associated with the choice made is due to the effects and outcomes in relation to the chosen alternative, that are appraised as undesirable, and to the effects and outcomes in relation to the rejected alternatives, that are appraised as desirable. The corresponding psychological efficiency with respect to the choice, immediately it is made and before processes operate to maximize psychological efficiency, is the same as that resulting from the pre-decision appraisal of that choice.

For the two-alternative decision situation, the psychological efficiency in question is expressed as:

$$\text{psychological efficiency} = \frac{G(p) + G(q)}{G(p) + G(q) + D(p, -q)} \qquad (8.11)$$

in which $G(p)$ is the strength of ego-involvement in the referent intention associated with the chosen alternative,
$G(q)$ is the strength of ego-involvement in the referent intention associated with the rejected alternative,
and $D(p, -q)$ is the dissonance aroused with respect to the choice made.

The magnitude of the dissonance aroused is given by:

$$D(p, -q) = G(p)r(p)Q(p) + G(q)r(q)\frac{1}{Q(q)} \qquad (8.8)$$

$$= G(p)Q(p) + G(q)\frac{1}{Q(q)} \qquad 8.49$$

(assuming $r(p)$ and $r(q)$, the perceived relevances of the referent intentions to the respective alternatives, equal to unity), in which $Q(p)$ is the magnitude of the ratio of dissonant to consonant elements with respect to the referent p, and $Q(q)$ is the magnitude of the ratio of dissonant to consonant elements with respect to the referent q.

By substituting 8.49 into the expression for psychological efficiency above, the following is obtained:

$$\text{psychological efficiency} = \frac{G(p) + G(q)}{G(p) + G(q) + G(p)Q(p) + G(q)\frac{1}{Q(q)}} \qquad 8.50$$

Immediately the decision is made, processes operate to maximize psychological efficiency. It can be shown algebraically for expression 8.50 that there are several ways in which psychological efficiency may be increased. Analytically, these may be considered: (1) in terms of adjustments to the ego-involvements in the referent intentions (i.e. adjustments to $G(p)$ and $G(q)$), and (2) in terms of adjustments to the ratios of dissonant to consonant elements (i.e. adjustments to $Q(p)$ and $Q(q)$).

Type (1) consequence of the process maximizing psychological efficiency amounts to the accommodative reappraisal of the referent intentions. Thus, for example, it can be readily shown that, when the product of the two ratios of dissonant to consonant elements ($Q(p)Q(q)$) is less than unity, psychological efficiency is increased without any change in the magnitudes of the dissonant and consonant elements if the ratio:

$$\frac{\text{ego-involvement in referent } q}{\text{ego-involvement in referent } p} = \frac{Q(q)}{Q(p)}$$

is diminished, i.e. if the strength or importance of the referent intention p, associated with the chosen alternative, becomes comparatively greater than before, compared with the strength of the referent intention q, associated with the rejected alternative.

The second type of consequence of the process maximizing psychological efficiency, corresponds to the traditional notion of post-decision dissonance reduction, in which the magnitude of the ratio of dissonant to consonant elements with respect to the referent intention associated with the chosen alternative (i.e. $Q(p)$ in 8.50) may be diminished, and in which the magnitude of the ratio of dissonant to consonant elements with respect to the referent intention associated with the rejected alternative (i.e. $Q(q)$ in 8.50) may, in addition, be increased.

Both types of consequences may occur simultaneously, and the degree to which they occur would depend upon the strengths of the constraints which resist the pressures for re-evaluation. It should

be noted that, if both types of consequences occur at the same time, it is possible that dissonance with respect to the chosen alternative is not reduced, even though psychological efficiency is increased. This possibility may be readily demonstrated.

The dissonance aroused with respect to the chosen alternative is given by:

$D(p) = C(p)Q(p)$

Type (1) consequence of the process maximizing psychological efficiency may result in the strengthening of the ego-involvement in the referent intention p. Should the rate of strengthening in C(p) be greater than the rate of decrease in the ratio of dissonant to consonant elements with respect tothe referent p (i.e. Q(p)), then the magnitude of dissonance D(p) will increase.

It can alsobe demonstrated that maximizing psychological efficiency may result in an increase in dissonance aroused with respect to thechoice made. For example, if Q(p), Q(q), and C(q) in 8.50 are all constrained so that they remain unchanged, psychological efficiency can only be maximized by an increase in ego-involvement C(p) in the referent intention associated with the chosen alternative (given that the product Q(p)Q(q) is less than unity). Such an increase in ego-involvement in referent p results in greater dissonance with respect to the choice made, since

$$D(p, -q) = G(p)Q(p) + G(q)\frac{1}{Q(q)}$$

$$= a\,G(p) + b$$

where "a" and "b" would be constants, and an increase in G(p) would mean an increase in dissonance D(p, -q).

When the referent intentions are constrained and relatively stable, maximizing psychological efficiency is more likely to proceed by way of a reassessment of the projected evaluations making up the dissonant and consonant elements, especially if the constraints upon them are weaker. Such reassessment in the absence of accommodative reappraisal of referent intentions will result in dissonance reduction. In any situation, reappraisal of both referent intentions and the projected evaluations of effects and outcomes may occur but, with greater stability in the referents, the effect of such reappraisal is most likely to be dissonance reduction. However, from a theoretical point of view, such instances that might be empirically found in which dissonance is not reduced, or is increased, but in which psychological efficiency is maximized, would provide strong support for the "psychological efficiency" approach to dissonance processes as against the traditional "drive to reduce dissonance" approach.

It will be remembered that the projected evaluations of effects and outcomes with respect to a referent intention, have the form:

$\underline{u}(a_o a_i)'\underline{u}(a_i p)'$

in which $\underline{u}(a_i p)'$ is the delineated relationship between an entity, a_i,

associated with a decision alternative and the referent intention, p; and $\underline{u}(a_0a_i)'$ is the activated relationship between the self and the delineated entity.

Any reassessment of effects and outcomes associated with the decision alternatives may therefore occur in two ways, either as an accommodative reappraisal of the self's relationship to the delineated entity (i.e. a re-evaluation of $\underline{u}(a_0a_i)'$), or as a distortion of the delineated relationship between that entity and the referent in the context of the appropriate decision alternative (i.e. a re-evaluation of $\underline{u}(a_ip)'$). In the first case, the delineated entity may become more or less closely associated with the self (i.e. more or less desired by the individual), or it may become more or less dissociated from the self (more or less spurned by the individual). In the second case, the distortion may be such that, for example, an association between a particular undesirable outcome and the chosen alternative tends to be denied.

Unless the decision alternatives are ambiguous in their attributes, the relationships between effects and outcomes and the decision alternatives, are likely to be strongly constrained by appraisal of the actual context of the decision situation. If this is so, then the reassessment of the projected evaluations would most probably proceed by way of reappraisal of the self's relationships to the delineated entities. In other words, the process maximizing

psychological efficiency would most probably result in a reassessment in terms of the desirability or undesirability of effects and outcomes to the individual, rather than in terms of their relationships to the decision alternatives. The type of reassessment would naturally depend on whether the relevant projected evaluation is dissonant or consonant with respect to the referent intention associated with the chosen alternative (and likewise with respect to the negation of the referent intention associated with the rejected alternative). It would be such that the strength of dissonant elements would tend to become decreased, whilst the strength of consonant elements would tend to become increased.

A more detailed analysis of the processes of reappraisal in the absence of decision making, is given in the following three chapters. Chapter 12 reports an experimental evaluation of the theoretical propositions about the decision processes outlined in this chapter.

SUMMARY

It is postulated that the sequence of psychological processes associated with decision making is made up of three main phases. The first is the pre-decision appraisal of the available choices confronting the individual. The second is the decision process itself, which is held to operate at maximal psychological efficiency with respect to the result of the pre-decision appraisal. The third phase is the post-decision reappraisal, which is held to depend on the operation of processes maximizing psychological efficiency, following

the decision process.

Algebraic notation is introduced, and a typical decision situation is analysed in terms of the dissonant and consonant elements appraised in relation to the individual's referent intentions. The dissonance aroused during the pre-decision appraisal of each potential choice (i.e. a potentially accepted alternative together with the corresponding potentially rejected alternatives), is considered to be compounded of the dissonance aroused with respect to the referent intention associated with that alternative featuring as a potentially accepted one, and the dissonances aroused with respect to the negation of the referent intentions associated with those alternatives featuring as potentially rejected ones.

Corresponding expressions are derived for the (volitional) dissonances aroused with respect to the potential acceptance of the one alternative, and the potential rejection of the remaining alternatives, from which the expression for the dissonance aroused with respect to a potential choice is compounded. These expressions incorporate the degree of ego-involvement in the referent intentions, as well as the nature and magnitude of the appraised elements of the situation.

A decision principle is derived from the consideration of the decision process operating at maximal psychological efficiency. It states that:

that choice, the pre-decision appraisal of which results in the arousal of the least magnitude of dissonance compared with any other available choice, becomes, by the operation of the decision process, the actual choice made by the individual.

Worked examples, assuming artificial data, are given for decisions between two alternatives. The following five cases are considered:

(1) A decision between alternatives with favourable and unfavourable attributes, in which the common attributes are differentially associated with or dissociated from the alternatives.

(2) A decision between alternatives with favourable and unfavourable attributes, in which the attributes are not all common to both alternatives.

(3) A decision between alternatives involving simple preferences only, in which no additional attributes exist.

(4) A decision between negative alternatives (i.e. alternatives which the individual would wish to avoid), involving simple preferences of avoidance only.

(5) A decision between negative alternatives in which additional attributes feature.

The phenomenon of "decision reversal" is examined, and two necessary conditions (but not sufficient ones) to be satisfied for its occurrence are postulated. They are that, for the choice tending towards actuality,

(1) the dissonance aroused in relation to one of the alternatives tending towards rejection, is greater than the dissonance aroused in relation to the alternative tending towards acceptance (i.e. the salience of the former becomes greater than that of the latter),

(2) the dissonance aroused in relation to that alternative in question when tending towards rejection, is greater than it would be when tending towards acceptance (i.e. should the appraisal of the total situation break down into its components, the second condition to be satisfied is that the alternative in question arouses greater dissonance as a potentially rejected alternative, than as a potentially accepted alternative).

Should both of these conditions arise, then that alternative tending towards rejection may instead become the accepted one - that is "decision reversal" may occur.

Post-decision reappraisal is considered in terms of the processes operating to maximise psychological efficiency after a decision is made. Reappraisal that involves post-decision dissonance reduction is held to be a frequent consequence of maximising psychological efficiency. However, it is demonstrated that, under certain conditions, the process of maximising psychological efficiency may give rise to the accommodative reappraisal of the individual's referent intentions,

accompanied by increases in dissonance.

The results of an experimental evaluation of the theory presented in this chapter are given in Chapter 12.

SECTION II: NEW THEORY

A THEORY OF APPRAISAL AND REAPPRAISAL: AN EXTENDED REFORMULATION OF DISSONANCE THEORY

CHAPTER 9 PROCESSES OF ATTITUDE CHANGE - THE COMPARISON MODE AND DISCREPANCY DISSONANCE

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INTRODUCTION

This chapter and the following two chapters discuss the processes of attitude change in relation to dissonance considerations. They attempt to formulate algebraically and to elaborate the theory expounded in Chapter 5, 6 and 7. Again, for the purposes of analytical discussion the distinction is drawn between the comparison, the modal and the volitional modes of appraisal and reappraisal. It is again emphasized, however, that the three modes do not necessarily operate in isolation but that frequent interaction between them is probable. The effects of such interaction on attitude change will be considered after attitude change within each mode has been discussed separately.

The present chapter is devoted to the comparison mode and discrepancy dissonance. Chapter 10 is concerned with the modal mode and modal dissonance, and Chapter 11 with the volitional mode and volitional dissonance.

Attitude change as a possible consequence of the comparison mode of appraisal may follow from witnessing another's opinion about a person, object, event or issue which differs from one's own. Or it may follow from an attempt to influence, such as a communication arguing for a stand on a particular issue discrepant from one's own. Or it may follow from the recognition of a discrepancy between a belief or expectation and actuality.

A considerable amount of empirical work has been done on the degree of attitude change dependent on communication discrepancy (i.e. the discrepancy between a stand taken by a communication on an issue and the individual's own stand on that issue). The empirical work, reviewed by Insko et al (1966), tends to lead to conflicting conclusions. In some studies greater attitude change or influence results the greater the discrepancy between the subject's own stand and that expressed by the communication. Findings of other studies suggest that the greater the discrepancy the less is the influence. A couple of experiments find a curvilinear relationship of increasing influence with increasing discrepancy up to moderate discrepancies, then decreasing influence with further increases in discrepancy.

The relationship between attitude change and communication discrepancy has tended to be a controversial theoretical issue between the "social judgment" approach to attitudes (e.g. Sherif et al, 1965) and dissonance theory. According to the social judgment approach, the greater the commitment to a particular stand on an issue, the less is the individual likely to change his opinion in the face of a discrepant communication, and the greater the discrepancy of the advocated opinion the <u>less</u> would be the attitude change. On the other hand, dissonance theory suggests that the greater the discrepancy the more the dissonance, hence the <u>greater</u> would be the attitude change.

Insko et al (1966) interpret both the social judgment approach and dissonance theory in such a way that a curvilinear relationship between communication discrepancy and attitude change is predicted, but for different reasons.

Their interpretation of the social judgment approach is that with communications in the latitude of acceptance (i.e. up to moderate discrepancies) increasing discrepancies will produce increasing attitude change, but that communications in the more discrepant latitude of rejection will produce decreasing attitude change with increasing discrepancy.

Their interpretation of dissonance theory is as follows. Increasing discrepancy results in increasing dissonance which, in the typical experiment, can be reduced in two ways: one, by a change in attitude to conform to the communication; two, by disparaging the communicator. At moderate discrepancies, increasing discrepancy will result in increasing conformity, but at more extreme discrepancies, increasing discrepancy will result in increasing disparagement. Since conforming and disparaging are held to be largely alternative modes of dissonance reduction, increasing disparagement is associated with decreasing conformity.

The theory of the comparison mode of appraisal presented here attempts to reconcile the two approaches of social judgment and dissonance in a single formulation. It is a single formulation which attempts a genuine reconciliation and incorporates features from

both approaches, in contrast with the above interpretations of Insko et al who derive similar predictions from both approaches but for different reasons.

The present formulation, which is algebraically expressed, postulates a curvilinear relationship between communication discrepancy and attitude change under certain specific conditions. Apart from the communication discrepancy variable, it incorporates variables such as:

(1) natural tolerance on an issue (or flexibility - rigidity with respect to the issue), being an indication of the extent to which the individual will agree to stands on an issue close to his own in the absence of any attempt to influence him (i.e. in the absence of a communication;

(2) confidence in self's opinion on an issue, being an indication of the degree to which the individual is confident in his own opinion on an issue (confidence may be undermined in a communication situation by the use of various techniques, including rational arguments);

(3) credibility of the communicator, being an indication of the degree to which the communicator or source of communication is regarded as credible by the individual (which will depend on such factors as the credentials of the communicator, the references he uses, the arguments he presents, etc.).

As well as to discrepancies between opinionsheld by the individual and opinions argued by others, the theory of the comparison plane is applicable to the recognition of discrepancies between expectations or beliefs held by the individual and actualities. As will be seen the same algebraic expression may be applied to both instances with suitable modification in interpretation of the variables.

The reason that a discrepancy between a belief or expectation and actuality may be considered in the same general way as a discrepancy between opinion and opinion, is that opinions are themselves comprised of beliefs and expectations. The essential difference is, of course, that "actuality" (e.g. the non-occurrence of an expected event) has a quality of certainty which another's "opinion" does not. This may be incorporated in the above variables by considering the credibility of the "source of communication" (i.e. the actuality) to be very high or complete, and confidence in self's "opinion on the issue" (i.e. the belief or expectation) to be low. In this way the theory of the comparison mode is applicable to error-correcting functions* in the individual's cognitive interpretation of the environment, as well as to attitude change following the expression of opinions differing from the individual's own.

* See section in this chapter entitled: Discrepancies between expectations, beliefs and corresponding actualities.

DISCREPANCY DISSONANCE

From the analysis of Chapter 7, attitude change (including changes in belief and expectation) in the comparison mode is regarded as being the consequence of the process tending to maximise psychological efficiency following the arousal of discrepancy dissonance. This process would lead to accommodative reappraisal of the referent which became the locus of discrepancy dissonance. Such accommodative reappraisal or attitude change would be accompanied by the reduction of the dissonance.

However, the process tending to maximise psychological efficiency in the comparison mode (which is associated with the processes that conserve the organization of the identity structure) operates during appraisal to minimise the arousal of discrepancy dissonance. It is necessary, therefore, to give attention to the arousal of discrepancy dissonance during appraisal before considering the accommodative reappraisal that might follow.

The possible distortion of appraisal that minimising the arousal of dissonance entails will depend, as has been noted before, on the ambiguity of the situation, and on the ambiguity and resilience of the constructs involved in the appraisal. It will be assumed that in most cases the actual discrepancy cannot be denied because of the nature of the cognitive processes involved in the recognition of a discrepancy (e.g. if a person states an opinion different from one's own or if an expected event does not occur, the actual discrepancy is recognized), but that, instead, the

perceived relevance of the discrepancy may become attenuated or denied (e.g. what the other person says is wrong and therefore does not affect my opinion!).

That the possible attenuation of the perceived relevance of the discrepancy minimizes dissonance arousal, follows from hypothesis 6.10 in which the magnitude of dissonance is given as depending on:

> a direct relation to thedegree of ego-involvement in the referent; a direct relation to the perceived relevance of the referent in the context of the appraisal; a direct relation to the number and strength of dissonant elements with respect to the referent; an inverse relation to the number and strength of consonant elements with respect to the referent.

Discrepancy dissonance is regarded as a limiting case of the general statement of the magnitude of dissonance, in which there is only one dissonant and only one consonant element with respect to the referent. The referent evaluation is defined (6.13) as an evaluation of a belief, an expectation, or an opinion within the identity structure which is activated during appraisal. The dissonant element is defined (6.14) as the resultant discrepancy between the projected evaluation of the distal stimulus and the projected evaluation of the activated referent. The consonant

element is defined (6.15) as the identity projected evaluation of the referent. Discrepancy dissonance may therefore be algebraically expressed as:

$$D = G\ r\ \frac{d}{c} \qquad 9.1$$

where D is the discrepancy dissonance with respect to the referent belief, expectation, or opinion;
where G is the degree of ego-involvement in thereferent;
where r is the perceived relevance of the referent in the context of the appraisal;
where d, the dissonant element, is the appraised discrepancy;
and where c, the consonant element, is the identity evaluation of the referent.

In the comparison mode of appraisal r, the perceived relevance of the referent in the context of the appraisal, is equivalent to the perceived relevance of the discrepancy, since the perceived relevance of "my opinion to his discrepant opinion" is the same as the perceived relevance of "his opinion to mine" ("his opinion" being the context of the appraisal for the comparison mode)*.

Thus, from expression 9.1 it can be seen that the possible attenuation of the perceived relevance factor, r, during appraisal will minimise dissonance arousal. This will occur, to an extent

* Note that the same referent may be involved, in the modal or volitional modes of appraisal, and that for these modes the perceived relevance of the referent may be different. This does not affect the argument for the comparison mode.

depending on other factors to be examined, as a consequence of the process tending to maximize psychological efficiency operating during appraisal.

At this stage of considering the arousal of discrepancy dissonance, it becomes necessary to examine the "social judgment" approach (Sherif et al, 1965) of assessing features of the individual's own stand on an issue, which have a bearing on the perceived relevance of the discrepancy between another's stand on the issue and his own. The incorporation of these features into expression 9.1, provides for the reconciliation of the social judgment and dissonance approaches to attitude change following communication discrepancy.

THE "SOCIAL JUDGMENT" APPROACH

Sherif et al (1965) maintain that an attitude on an issue is more adequately represented as a range or latitude of acceptance, that is, a range of stands on the issue, adjacent to the individual's own, that are acceptable to him. Associated with the latitude of acceptance is a latitude of rejection (those stands unacceptable to the individual) and a latitude of noncommitment. The advantages of the concept of social attitude as Sherif et al see them are (p.vi):

"(1) It provides measurement concepts that define the positive and negative boundaries in the structure of an attitude

and their relative sizes.

(2) This conception of the structure of an attitude provides a more discriminating measurement device for the problems of attitude change and resistance to change and for the neglected problem of predicting susceptibility to change before any change is attempted.

(3) The expression of an attitude in terms of latitudes of acceptance, rejection, and noncommitment gives an operational index of the crucial problem - in degrees of ego-involvement. "

The features of the social judgment approach which are incorporated explicitly into the algebraic expression for the arousal of discrepancy dissonance are the first two listed above - the relative sizes of positive and negative boundaries in the structure of an attitude, and, following from this, one of the factors in predicting susceptibility of change before any change is attempted (other factors not explicitly considered by Sherif et al being confidence in self's opinion and credibility of the communicator).

The present approach disagrees in part with the third stated advantage of Sherif et al, that the expression of an attitude in terms of latitudes of acceptance, rejection and noncommitment gives an operational index of ego-involvement in an issue. Two variables instead are distinguished. They are

(1) ego-involvement in an issue, and

(2) commitment to a particular stand on that issue.

It is the latter variable (of commitment) that is here regarded as being given an operational index in terms of latitudes of acceptance, rejection and noncommitment.

Sherif et al consistently consider ego-involvement and commitment to be equivalent, that is, they regard a person who is highly ego-involved in an issue as having a strong commitment to a particular stand on that issue. It is probably true that a strong commitment to a particular stand will denote that the individual is highly ego-involved in the issue, but it is also possible that an individual highly ego-involved in an issue is not committed to a particular viewpoint on it. He may be very involved and caught up in an event or an issue of vital importance to him, yet not have committed himself to any point of view. He may remain highly tolerant of all options or he may be suffering ambivalent feelings - in either case ego-involvement may be high without strong commitment. In general, therefore, ego-involvement and commitment should not be considered as equivalent.

It is true that Sherif et al use "ego-involvement <u>in a stand</u>" as synonymous with "commitment <u>to a stand</u>" (e.g. p.184 - "high ego involvement in a stand results in resistance to change toward a communication on the issue"), and these two phrases would appear to be equivalent. But more often they use "ego involvement <u>with (or in) an issue</u>" as though it were synonymous with "commitment

to a stand" (e.g. p.20 - "...of the degree of the individual's personal commitment to his own stand...; that is, of the degree of his ego-involvement with the issue."), which it is not. From their discussion it is clear that, when Sherif et al use the term ego-involvement, they are in fact talking about matters of concern to the individual, that is about ego-involvement in issues (or objects, events, etc.). This is the meaning that is given ego-involvement in this thesis and as it is incorporated into the expressions for dissonance.

Since the phrase "ego involvement in a stand" can result in confusion, the expression "degree of commitment to a stand" is preferred when refering to the individual's own stand. It will be seen that "commitment to a particular stand" is associated with the variable of natural tolerance on an issue (i.e. flexibility - rigidity with respect to the issue).

As the work of Sherif et al shows, the latitude of acceptance is an important consideration in predicting how individuals will react to a specific event. As they put it (pp. 7/8): "Even if two individuals have the same position on an issue....they may differ with respect to the other stands each is willing to consider or tolerate and to the range of viewpoints each consigns to definitely objectionable categories. Such differences, even among persons espousing similar positions, should be considered in predicting how these individuals will react to a specific event,

to a discussion of the pros and cons of the issue, as well as to a communication aimed at persuading people to change." This is the most important aspect of the social judgment approach that is incorporated into the expression for the arousal of discrepancy dissonance.

The technique used by Sherif et al for assessing the latitudes of acceptance, rejection and noncommitment is as follows. The subject is presented with a set of alternative positions on a controversial social issue to which his attitude is to be assessed. He is asked to indicate the one position that best represents his own stand, then the one which he finds the most objectionable. In addition, he is asked to indicate any other positions that would be acceptable to him, and also those that would be unacceptable. Since the subject is not compelled to judge the remaining positions as acceptable or unacceptable to him, any positions unassessed by the subject indicate areas of noncommitment. The range of positions that are acceptable to the subject provide the measure of the latitude of acceptance for him on the issue. Likewise, the range of positions that are unacceptable to him give the measure of the latitude of rejection, and the range of positions that receive no response give the measure of the latitude of noncommitment.

Examples of alternative positions on a controversial social issue (the 1960 Presidential Campaign in the United States) that have been presented to subjects to assess their latitudes of acceptance,

rejection and noncommitment, are (Sherif et al, 1965, p.28):

A. The election of the Republican presidential and vice-presidential candidates in November is absolutely essential from all angles in the country's interests.

B. On the whole, the interests of the country will be served best by the election of the Republican candidates for president and vice-president in the coming election.

C. It seems that the country's interests would be better served if the presidential and vice-presidential candidates of the Republican party are elected this November.

D. Although it is hard to decide, it is probable that the country's interests may be better served if the Republican presidential and vice-presidential candidates are elected in November.

E. From the point of view of the country's interests, it is hard to decide whether it is preferable to vote for presidential and vice-presidential candidates of the Republican part or the Democratic party in November.

F. ... ...

G. ... ...

H. ... ...

I. The election of the Democratic presidential and vice-presidential candidates in November is absolutely essential from all angles in the country's interests.

For an extreme Republican subject endorsing position A as being most acceptable to him and position I as being the most objectionable, his latitude of acceptance may extend to include positions B and C, whereas his latitude of rejection may include all the positions E to I, with the single position D representing his latitude of noncommitment. For other subjects the positions that best represent their own views, and the ranges of the latitudes of acceptance, rejection and noncommitment will in general differ.

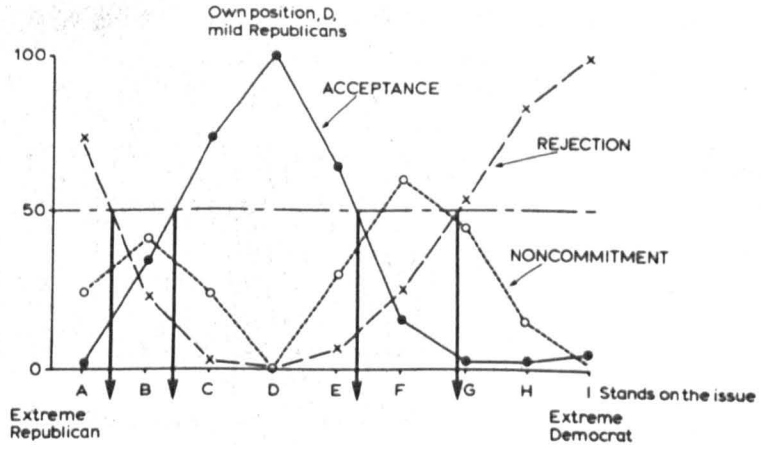
For all persons endorsing a particular stand (say D, above) as representing best their own viewpoint, the percentage of them that accept, reject or are noncommital about other positions may be determined from their responses to these positions. In this way the empirical graphs of acceptance, rejection and noncommitment may be obtained as in Figure 9.1(1). Figure 9.2(1) gives the corresponding graphs for all persons endorsing position A as their own. The latitudes of acceptance and rejection are indicated at the base of both figures. They are determined by including those positions found acceptable by more than 50% of the subjects for the latitude of acceptance, and those found objectionable by more than 50% of the subjects for the latitude of rejection. The remaining positions indicate regions of noncommitment.

Figure 9.1

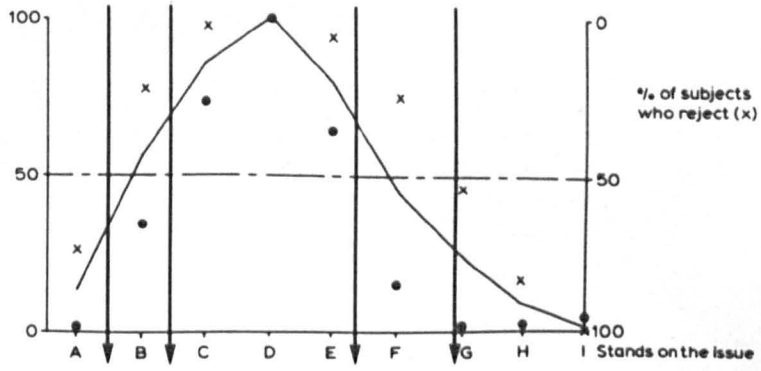
Transformation of degrees of acceptance and rejection of stands on an issue into attitudes held toward those stands

(1) Degrees of acceptance and rejection

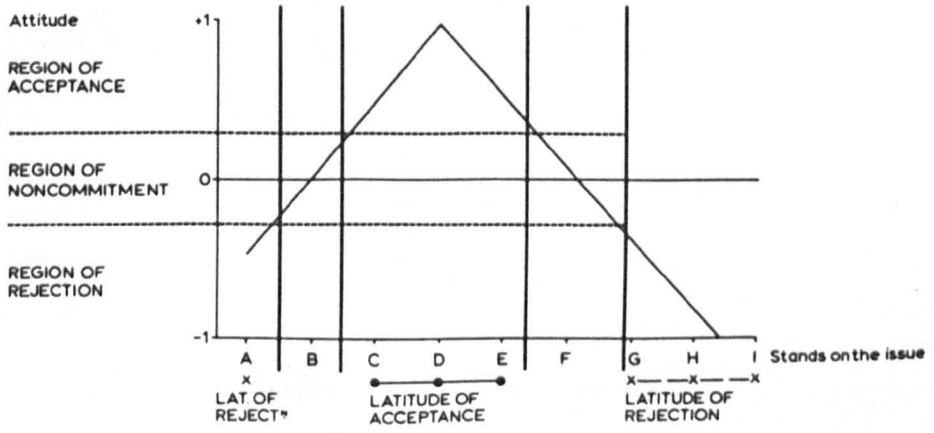
(1960 Election issue, U.S.A. — from Sherif et al, 1965 p.35)



(2) Graph of mean of degree of acceptance and of degree of non-rejection, derived from (1) above



(3) Approximated transformation into attitudes held toward stands, derived from (2) above



ATTITUDES TOWARDS OPINIONS OTHER THAN SELF'S OWN OPINION

For the purpose of indicating the individual's attitude to various stands on the issue, it is necessary to go beyond the work of Sherif et al. It follows from their operational technique for assessing attitudes that positive and negative boundaries of a particular attitude correspond to the latitudes of acceptance and rejection respectively. That position which is endorsed as the subject's own stand therefore indicates a wholly positive attitude to that stand. That other position which is regarded by the subject as the most objectionable indicates a wholly negative attitude towards it. Any position which is regarded as neither objectionable nor acceptable indicates a noncommital attitude towards it. The subject's attitudes to the remaining positions are positive or negative to varying degrees. For the purpose of assessing the discrepancy (for discrepancy dissonance) between the individual's opinion and some other's opinion on an issue, the individual's attitude to the other's stand is required.

Unfortunately, for any particular individual, the social judgment technique as it stands does not assess the degrees of acceptance or rejection of positions other than the most acceptable and the most objectionable. This poses a difficulty in determining how the individual's attitude to various stands varies with the discrepancies of those stands from his own. However, it is possible to obtain an indication of the profile of degrees of acceptance and

rejection inrelation to varying positions, by examining the empirical results for a group of subjects sharing a common "own stand".

For a group of subjects all endorsing one particular position the degrees of acceptance and rejection of other positions may be determined for the group as a whole. These degrees of acceptance and rejection will be indicated by the percentages of subjects in the group who endorse or reject each position (see Figures 9.1(1) and 9.2(1)). The resulting profile will therefore indicate, for the group, the variation in degree of acceptance or rejection of positions according to the discrepancies of these positions from the common position endorsed by all members of the group. For a particular individual endorsing the common position as his own, it may be assumed that the general shape of the profile of acceptance and rejection for him will approximate that for the group as a whole.

Figure 9.1(2) is a single graph (i.e. profile) of the degree of acceptance and rejection of each position for a group of subjects all endorsing position D. It is obtained from Figure 9.1(1) by superimposing the graph of acceptance (.) with the inverted graph of rejection (x) and taking the resultant mean curve. As can be seen, the profile of the curve may be approximated to straight lines.

Figure 9.1(3) is adapted from Figure 9.1(2) on the assumption that the shape of the profile for an individual will reflect the

profile for the group as a whole. It is expressed in terms of attitudes toward the various positions as shown by the axes of the graph. That position (D) which is the individual's own stand is defined as wholly positive (+1), that position which is completely unacceptable is defined as wholly negative (-1), and other positions fall in between.

That the attitudes to the various positions obtained by this transformation match the data obtained by Sherif et al, can be seen by comparing Figures 9.1(1) and 9.1(3) (likewise Figures 9.2(1) and 9.2(3)) where the latitudes of acceptance and rejection, indicated at the base of the graphs, are found to correspond well. In addition, as to be expected, it will be seen that positive attitudes correspond to the latitude of acceptance, that negative attitudes correspond to the latitude(s) of rejection, and that neutral attitudes correspond to the latitudes of noncommitment.

Other features of the transformation of degrees of acceptance and rejection into attitudes towards the corresponding positions are: that positions on either side of the individual's own stand may receive noncommital or negative attitudes (i.e. when two branches of the graph exist); and that several positions in the latitude of rejectionmay be completely rejected, in which case the corresponding attitude to each of these positions is wholly negative (e.g. Figure 9.2(3)).

The social judgment technique, together with the transformation outlined above, enables the individual's attitude towards stands other than his own on an issue to be estimated in the absence of the expression of such stands by another person or in any kind of communication. Thus, the individual's attitude towards an opinion to be expressed by another can be estimated before it is actually presented, which means that the individual's attitude towards that opinion can be assessed uncontaminated by the communication situation.

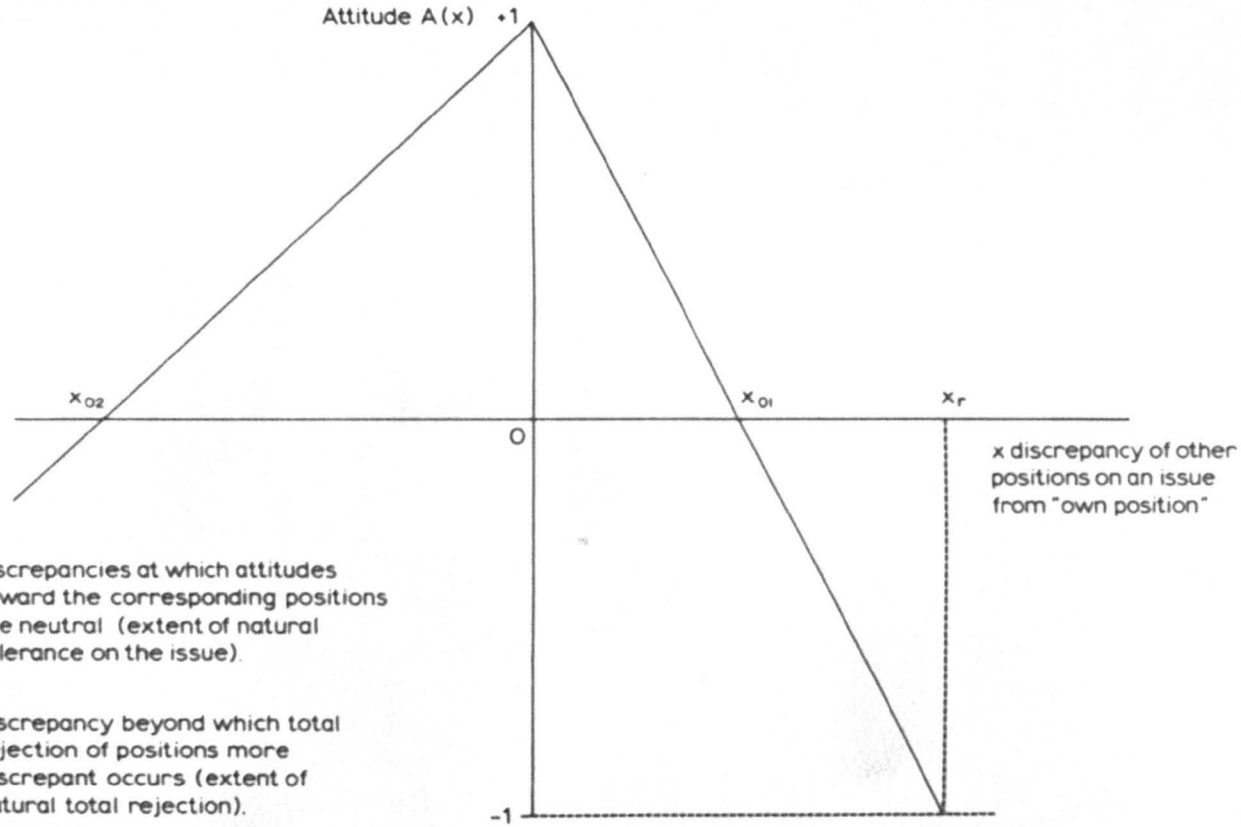
The individual's attitudes toward positions on an issue discrepant from his own may be readily obtained. The explicit relationship to be derived between discrepancy and attitude, incorporates a measure of the latitude of acceptance as a major parameter. The inclusion of this parameter opens the way for a reconciliation between the social judgment and dissonance approaches to the attitude change that might follow the expression of a discrepant stand in a communication.

In the absence of a communication the relationship between an individual's attitudes toward various positions on an issue and the discrepancies of these positions from his own, may be represented, in generalised form, graphically as in Figure 9.3. Figure 9.3 represents the general case of such relationships found in Figures 9.1(3) and 9.2(3).

The origin of the graph in Figure 9.3 is the intersection of the axis representing the individual's attitudes "A(x)" toward the various positions on an issue, with the axis representing the discrepancies "x" of these positions from his own. "x_{01}" and "x_{02}" are the discrepancies at which the individual's attitudes toward the corresponding positions on the issue are noncommital (neither for nor against). "x_r" is the discrepancy beyond which total rejection of positions more discrepant takes place.

Figure 9.3

Attitudes toward discrepant positions on an issue
in the absence of any communication



Algebraically, each branch of the graph is represented by the linear relationship of the form

$$y = m x + c \qquad 9.2$$

where "y" represents the individual's attitude "A(x)" towards the position on the issue discrepant by amount "x" from his own position;

where "m" represents the slope of the graph;

and where "c" represents a constant obtained by putting $x = 0$ in the above equation.

For each branch of the graph $c = A(0)$.

For the right hand branch (i.e. for positive x)

$$\text{slope } m_1 = -\frac{A(0)}{x_{01}}$$

For the left hand branch (i.e. for negative x)

$$\text{slope } m_2 = -\frac{A(0)}{x_{02}} \qquad \text{(nb. } x_{02} \text{ is negative).}$$

Hence the equation for the right hand branch of the graph is (by substituting in 9.2 above)

$$A(x) = -\frac{A(0)}{x_{01}} x + A(0)$$

$$A(x) = A(0)\left(1 - \frac{x}{x_{01}}\right) \text{ for positive x.} \qquad 9.3$$

Similarly, the equation for the left hand branch of the graph is

$$A(x) = A(0) \left(1 - \frac{x}{x_{02}} \right) \text{ for negative } x. \qquad 9.4$$

"A(x)" in equations 9.3 and 9.4 represents the individual's attitude towards the position (or opinion) on an issue discrepant by amount "x" from the individual's own position on that issue. The greater the discrepancy the less positive is the attitude. How much less positive the attitude is for a particular discrepancy, depends on the parameter x_{01} for the individual with respect to the issue in question (or parameter x_{02} for negative x). It is apparent from the graph (Figure 9.3) and the equation (9.3) that the smaller the parameter x_{01} is, the more rapidly does the attitude become less positive for increasing discrepancies.

By comparison with Figures 9.1(3) and 9.2(3), it is seen that the region between x_{01} and x_{02} is associated with the latitude of acceptance, and it will be noted that the narrower the region between x_{01} and x_{02} the narrower would be the latitude of acceptance. However, x_{01} and x_{02} are not quite equivalent to the extent of the latitude of acceptance since the region defined by them includes part of the latitude of noncommitment.

x_{01} and x_{02} are defined as the extents of natural tolerance for the individual in relation to the issue in question. They represent the extents of positions on either side of the individual's own position that are regarded by him as ranging from favourable to

neither favourable nor unfavourable. Positions beyond x_{01} and x_{02} are viewed unfavourably by the individual and would generally be rejected* (i.e. positions in the latitudes of rejection). The greater the extent of x_{01} and x_{02}, the greater will be the extent of the positions toward which the individual has favourable attitudes, that is, the more tolerant he will be of other opinions discrepant from his own, and the greater the discrepancy would have to be before he would begin to reject the corresponding opinion.

Earlier in the discussion it was briefly pointed out that Sherif et al (1965) considered "ego-involvement in an issue" to be equivalent to "commitment to a particular stand on the issue", whereas in the present formulation these are considered to be distinct variables. The parameters x_{01} and x_{02}, which represent the individual's natural tolerance on an issue, are regarded also as measures of the degree of commitment to his own particular stand. The smaller the x_{01} and x_{02} the less tolerant is he of other (discrepant) opinions, in other words, the more committed he is to his own.

Whether or not strong commitment is regarded as intolerance will depend on circumstances. When such commitment to a stand is not due to well-founded reasons, it will probably be regarded by others as intolerance. Strong commitment without well-founded reasons may be an indication of strong ego-involvement in the corresponding issue. However, strong commitment is not necessarily associated with

* In the absence of communications and attempts to influence.

high ego-involvement. For example, an individual who is not colourblind may be strongly committed to a particular stand (objectively correct) on the colour of light of a certain wavelength, stating that it is green, and not tolerate another's (false) opinion that it is blue. The individual is unlikely, despite the strong commitment to his stand, to be highly ego-involved in the issue, since colour does not feature prominantly as one of his most involving concerns. In addition, the individual's commitment to green is unlikely to be regarded by others as intolerance. Instead, the individual would be regarded as quite justified in describing the other person as colourblind and rejecting his opinion thatthe colour is blue.

THE AROUSAL OF DISCREPANCY DISSONANCE - THE DERIVATION OF A CURVILINEAR RELATIONSHIP BETWEEN "DISCREPANCY DISSONANCE" AND "COMMUNICATION DISCREPANCY"

Discrepancy dissonance may be aroused as the consequence of appraisal in the comparison mode when another's opinion, belief or expectation is appraised as discrepant from the individual's own (i.e. referent opinion, belief or expectation)*. The discrepant opinion will generally be expressed by some means of communication.

The algebraic expression for discrepancy dissonance (9.1) has been given as:

$$D = G\,r\,\frac{d}{c}$$

* Discrepancy between belief or expectation and actuality is considered later.

where G is the degree of ego-involvement in the referent, and r is the perceived relevance of the referent in the context of the appraisal.

The dissonant element (d) is defined (6.14) as the resultant discrepancy between the projected evaluation of the distal stimulus and the projected evaluation of the activated referent. The projected evaluation of the distal stimulus, A(x), is given by equation 9.3 (or equation 9.4, depending on the direction of the discrepancy), and the projected evaluation of the activated referent is A(0). The resultant discrepancy (the dissonant element) is therefore given by the difference between A(0) and A(x). The consonant element (c) is defined (6.15) as the identity projected evaluation of the referent, which is given by A(0).

Substituting the dissonant element

$$d = A(0) - A(x)$$

and the consonant element

$$c = A(0)$$

into the expression 9.1 above, discrepancy dissonance is given by:

$$D = G\,r\,\frac{A(0) - A(x)}{A(0)} \qquad 9.5$$

In the following, positive discrepancies (i.e. positive x) only will be considered since the arguments are identical for both positive and negative discrepancies.*

* Which discrepancies are to be considered positive or negative is an arbitrary matter and in no way affects the outcome.

From equation 9.3

$$A(x) = A(0) \left(1 - \frac{x}{x_{01}} \right)$$

and inserting this into 9.5 gives:

$$D = G\,r\,\frac{\left(A(0) - A(0) \left(1 - \frac{x}{x_{01}} \right) \right)}{A(0)}$$

$$D = G\,r\,\frac{x}{x_{01}} \qquad 9.6$$

Thus, in the absence of any possible attenuation of the dissonance, the greater the discrepancy, x, the greater would be the discrepancy dissonance; and the less the natural tolerance on the issue, x_{01}, the greater would be the discrepancy dissonance for a given discrepancy.

However, the process tending to maximize psychological efficiency will minimize the arousal of discrepancy dissonance if certain factors permit. As noted previously, in the absence of any possible distortion of the appraised discrepancy, the perceived relevance of the discrepancy with respect to the referent may become attenuated as a consequence of maximizing psychological efficiency. The extent to which this might happen and the factors upon which such attenuation might depend, will now be considered.

Assume, therefore, that the process of maximizing psychological efficiency during appraisal will tend to minimise the arousal of discrepancy dissonance by attenuating the factor of perceived relevance. Further, assume that there exists a relationship between this factor and the extent to which the credibility of the source of communication might be derogated, such that the greater the derogation the less would be the perceived relevance, that is, let

$$r = 1 - \frac{\text{Delta } q}{q} \qquad 9.7$$

where "q" represents the initial credibility of the source of communication;
and where "Delta q" represents the extent to which the credibility of the source is derogated.

The introduction, in this way, of the factor of derogation of the source or the disparagement of the communicator, resembles in some respects the dissonance approach to communication discrepancy of Brehm and Cohen (1962)* and Aronson, Turner, and Carlsmith (1963)**, or the interpretation of the dissonance approach given by Insko et al (1966) for predicting a curvilinear relationship between communication discrepancy and attitude change***. In these approaches the derogation of the source is regarded as an alternative mode of dissonance reduction.

In the present formulation derogation of the source is also related to "reduced" dissonance, but is regarded as a means by which

*, ** For both these references see Chapter 1 of the thesis.

*** See earlier in the present chapter.

the arousal of dissonance might be minimized. In this respect, the present approach has a closer affinity to that of Sherif etal. Sherif et al (1965, p.15), in arguing against the dissonance approach cited above, state that

"derogation of a communicator and his message - far from being an 'alternative' to attitude change - occurs when the communication is within the latitude of rejection and appraised as greatly discrepant".

When the communication is discrepant to such an extent, the individual's own position is not subject to any pressure according to Sherif et al, and attitude change does not follow. The communicator is derogated for holding such untenable opinions.

As will shortly be seen, the present approach does not hold that derogation necessarily occurs when a communication is in the latitude of rejection, but that derogation will depend on the factor of the individual's confidence in his own opinion on the issue, as well as on the extent of the discrepancy. Derogation will, however, also be seen to depend on the parameter x_{01} (i.e. the natural tolerance on an issue), and hence on the proximity of the latitude of rejection to the individual's own position.

Returning to the expression for perceived relevance (9.7)

$$r = 1 - \frac{\text{Delta } q}{q}$$

it is readily seen that there is no attenuation if Delta q is zero, that is, when there is no derogation of the credibility of the source

of communication. On the other hand, it is seen that the perceived relevance becomes zero when

$$\frac{\text{Delta } q}{q} = 1$$

that is, when the credibility of the source is derogated totally (since q refers to the initial credibility of the source, and Delta q = q when the above condition holds, in which case Delta q is the maximum extent of derogation).

Substituting the expression for perceived relevance (9.7) into the expression for discrepancy dissonance (9.6), results in:

Aroused discrepancy dissonance

$$D = G\left(1 - \frac{\text{Delta } q}{q}\right)\frac{x}{x_{01}} \qquad 9.8$$

Thus, according to the above expression, the arousal of discrepancy dissonance is minimized to the extent that derogation of the credibility of the source or communicator (Delta q) takes place.

It remains to examine the extent to which credibility might be derogated. It is assumed that the extent to which the credibility of the source of communication is derogated, depends partially on the appraised discrepancy in evaluation of the opinion expressed in the communication and the individual's own opinion, that is

$$\text{Delta } q = k\,\frac{(A(0) - A(x))}{(A(0) - A(x_r))} \qquad 9.9$$

where $A(\emptyset) - A(x)$ is the appraised discrepancy in evaluation due to the expression of a position discrepant by amount x from the individual's own position;

where $A(0) - A(x_r)$ is the discrepancy in evaluation corresponding to the position x_r beyond which <u>total</u> rejection of positions more discrepant would occur in the absence of any communication (see Figure 9.3);

and where k is a parameter which expresses the extent to which the derogation of the source is dependent on the appraised discrepancy.

From equation 9.3

$$A(x) = A(0) \left(1 - \frac{x}{x_{01}} \right)$$

hence

$$A(0) - A(x) = A(0) - A(0) \left(1 - \frac{x}{x_{01}}\right)$$

$$= A(0) \frac{x}{x_{01}} \qquad 9.10$$

similarly

$$A(0) - A(x_r) = A(0) \frac{x_r}{x_{01}} \qquad 9.11$$

Substituting expressions 9.10 and 9.11 into 9.9 results in

$$\text{Delta } q = k \frac{x}{x_r} \qquad 9.12$$

The parameter k in expression 9.12 is identified as a factor expressing the confidence with which the individual holds his own opinion on the issue. The more confident he is in his own opinion the more will the credibility of a communication stating a discrepant opinion be derogated. If, on the other hand, he has little confidence (i.e. small k) in his own position, then the extent to which the communicator is derogated will be correspondingly less*.

It is also seen from expression 9.12 that the derogation of credibility, Delta q, is greater the smaller the parameter x_r. From Figure 9.3 it follows that this means that the smaller the latitude of acceptance and the closer the latitude of rejection to the individual's own position, the more swiftly is credibility derogated with increasing communication discrepancy.

From the linear relationship expressed by the graph in Figure 9.3, it follows that

$$x_r = 2x_{01} \qquad 9.13$$

that is, the extent of natural total rejection is twice the extent of natural tolerance. Hence, from 9.12 and 9.13

Derogation of credibility

$$\text{Delta } q = k\frac{x}{2x_{01}} \qquad 9.14$$

* It should be noted that derogation refers to credibility of the communicator with respect to the particular opinion expressed. It does not necessarily mean that the communicator is derogated in other respects.

from which it can be seen that the less the individual's natural tolerance on an issue, the greater would be the derogation. This is another way of saying that the closer the latitude of rejection to the individual's own position, the more swiftly would credibility be derogated.

As noted before, Sherif et al (1965) argue that derogation of a communicator occurs when the communication is within the latitude of rejection. Expressions 9.12 and 9.14 are in agreement with this point of view - communications in the latitude of rejection, beyond discrepancy x_{01}, lead to substantial derogation - only if the individual has confidence in his own opinion and that confidence is not undermined. If, on the other hand, his confidence in his own stand is very low (i.e. k is small) or is much undermined, then it does not follow that the credibility of the communicator is necessarily derogated to any marked degree, when the communication is in the latitude of rejection*.

Substituting expression 9.14 into the expression for perceived relevance (9.7) gives

Perceived relevance
$$r = 1 - \frac{k}{q} \frac{x}{2 x_{01}} \qquad 9.15$$

From expression 9.15 it is readily seen that, in general, the perceived relevance of the discrepant opinion with respect to the

* Derogation of the credibility of the source of communication (Delta q) should not be confused with its initial credibility q which may be low at the outset.

individual's own opinion, diminishes with increasing discrepancy (increasing x), and with the more confidence the individual has in his own opinion (increasing k). The perceived relevance also decreases as both the initial credibility of the communicator (decreasing q), and the natural tolerance on the issue (decreasing x_{01}) decrease.

The result of substituting expression 9.15 into the expression for discrepancy dissonance (9.6) is

Aroused discrepancy dissonance

$$D = G\left(1 - \frac{k}{q}\,\frac{x}{2x_{01}}\right)\frac{x}{x_{01}} \qquad 9.16$$

Rearranging 9.16

$$D = G\left(\frac{x}{x_{01}} - \frac{1}{2}\,\frac{k}{q}\left(\frac{x}{x_{01}}\right)^2\right) \qquad 9.17$$

Thus, according to expression 9.17, the effect on perceived relevance due to the process maximizing psychological efficiency operating during the comparison mode of appraisal, results (in general) in a curvilinear relationship* between the magnitude of aroused discrepancy dissonance "D" and communication discrepancy "x" (Figure 9.4). This relationship is fully in accord with the empirical findings of Insko et al (1966) (Figure 9.5).

* This is a quadratic relationship in x.

In addition, the magnitude of discrepancy dissonance is dependent on four parameters (G, x_{01}, k, and q) associated withthe individual appraising the communication, the issue in question, and the source of the communication.

Figure 9.4

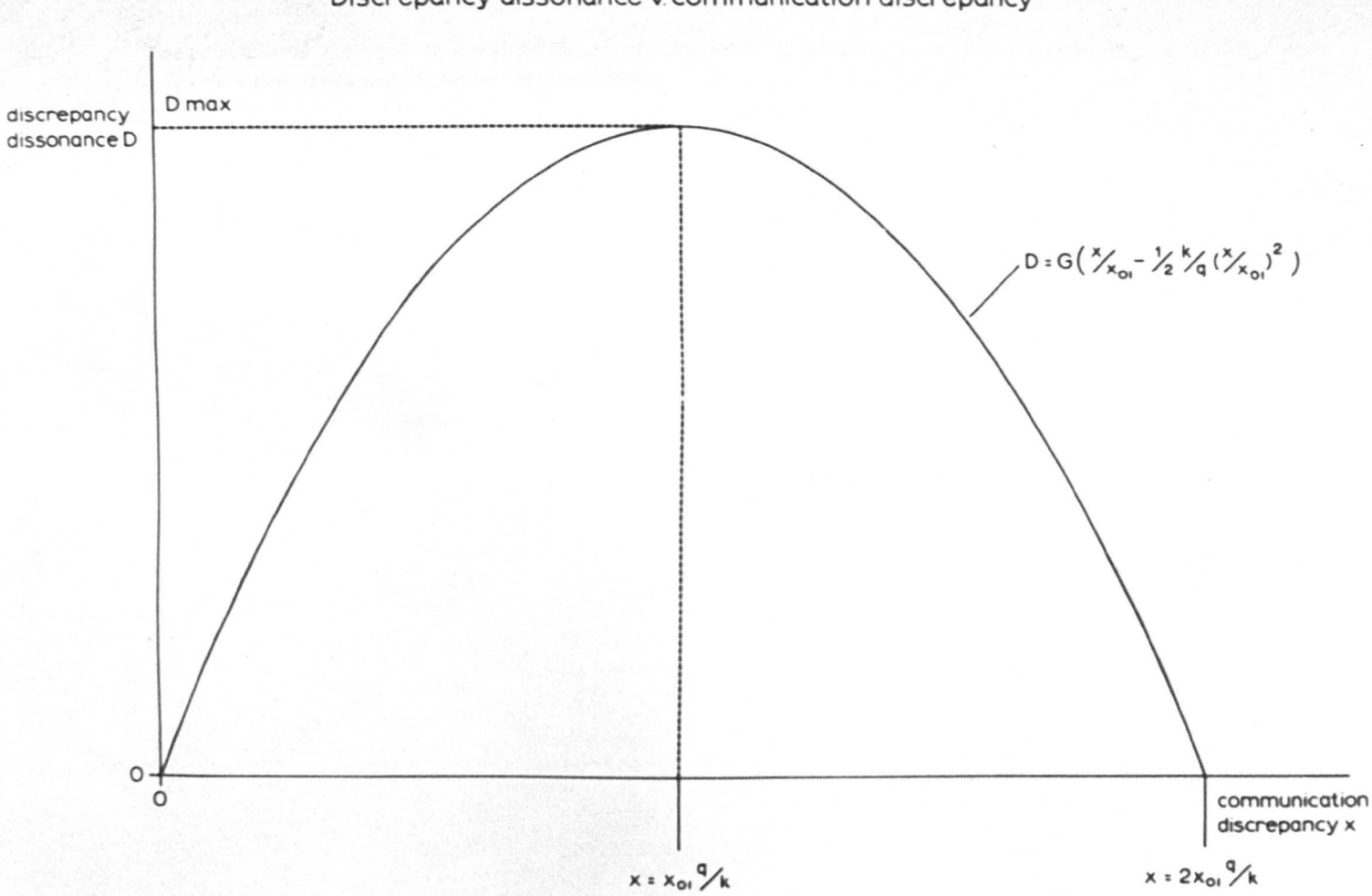
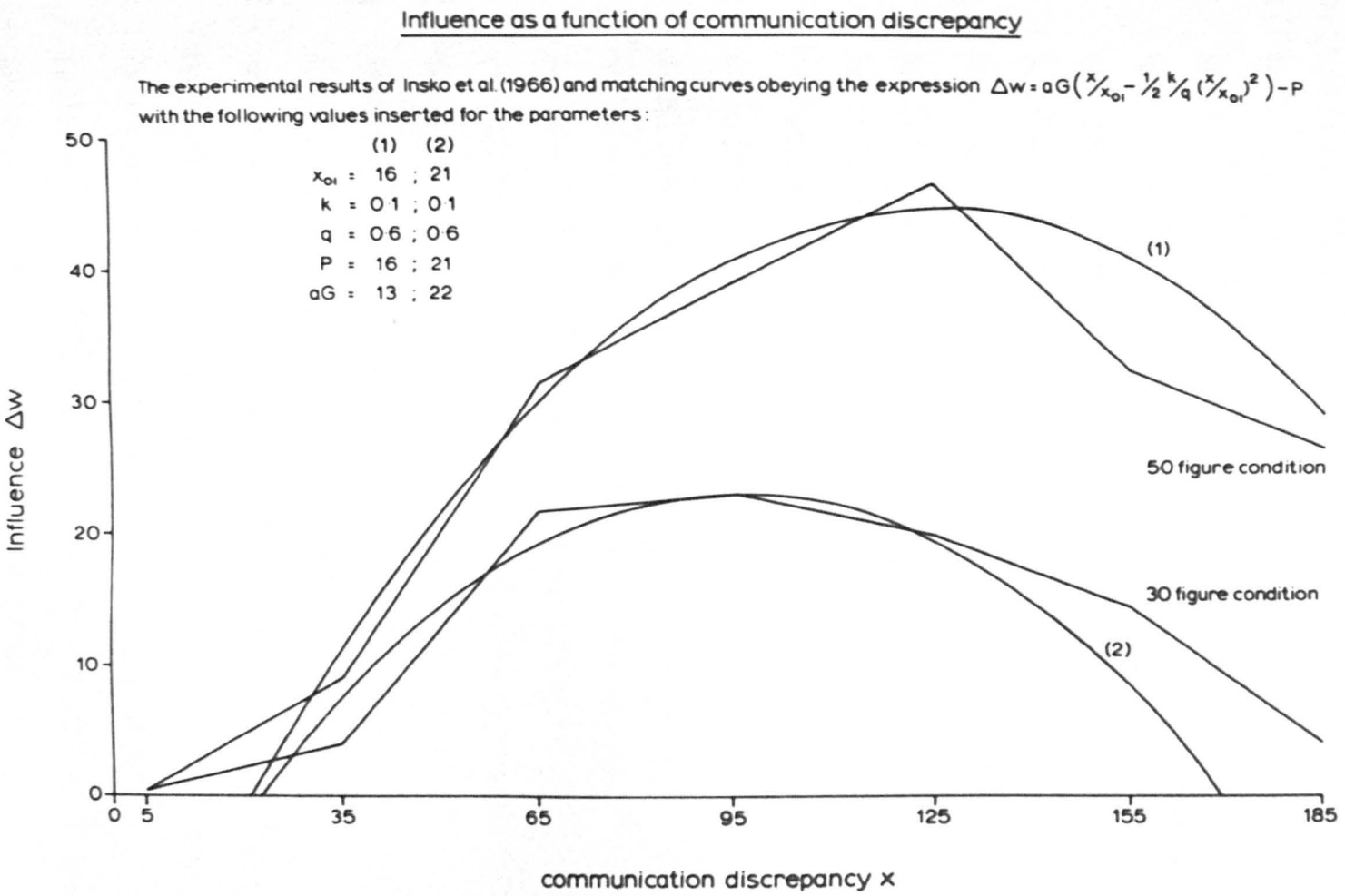

Discrepancy dissonance v. communication discrepancy
discrepancy dissonance D
D max
$D = G\left(\frac{x}{x_{01}} - \frac{1}{2}\frac{k}{q}\left(\frac{x}{x_{01}}\right)^2\right)$
0
0
communication discrepancy x
$x = x_{01}\frac{q}{k}$
$x = 2x_{01}\frac{q}{k}$

Figure 9.5


Influence as a function of communication discrepancy
The experimental results of Insko et al. (1966) and matching curves obeying the expression $\Delta w = aG\left(\frac{x}{x_{01}} - \frac{1}{2}\frac{k}{q}\left(\frac{x}{x_{01}}\right)^2\right) - P$
with the following values inserted for the parameters:
(1) (2)
x_{01} = 16 ; 21
k = 0·1 ; 0·1
q = 0·6 ; 0·6
P = 16 ; 21
aG = 13 ; 22
Influence Δw
communication discrepancy x
0
10
20
30
40
50
0 5 35 65 95 125 155 185
(1)
50 figure condition
30 figure condition
(2)

The parameters are identified as follows:

G: this represents the individual's ego-involvement in the issue, that is, how important the issue is to him or how involved he is in it. The greater the ego-involvement the greater would be the magnitude of G.

x_{01}: this represents the individual's natural tolerance on the issue (in the absence of any communication), and is associated with the extent of the latitude of acceptance and the proximity of the latitude of rejection. The greater the individual's commitment to a particular opinion on an issue, the less is his natural tolerance on that issue, and the less would be the magnitude of x_{01}. (Similarly for x_{02}, but in the direction opposite to x_{01} - see graph in Figure 9.3).

k: this represents the degree of confidence the individual has in his own opinion. The greater the confidence, the greater would be the magnitude of k.

q: this represents the degree of credibility of the source of communication. The greater the credibility, the greater would be the magnitude of q.

There is a direct equivalence in the dimensions of the measures represented by k and q. The equivalence follows from considering the degree of credibility of the communicator "q" to be a measure of the individual's confidence in the legitimacy of the opinion expressed by the communicator, and "k" to be the measure of the individual's confidence in the legitimacy of his own opinion. From this equivalence it follows that the ratio k/q is a dimensionless ratio, that corresponds to the confidence the individual possesses in his own opinion, vis à vis the confidence he has in the communicator's opinion.

So that equivalence is maintained, the values which the parameters k and q may take on should be defined in an equivalent manner. This may be conveniently done by using the convention that zero confidence and zero credibility are represented by k = 0, and q = 0 respectively, and that complete confidence and complete credibility is represented by k = 1, and q = 1 respectively, with degrees of confidence and credibility falling between the extremes.

Of special interest are the cases in which the ratio k/q is equal to unity. This will occur when k = q, that is, when for the particular individual and the particular issue, his confidence in the communicator matches the degree of confidence in his own opinion. This may be so both in cases where the individual has considerable confidence in his own opinion and is confronted with a highly credible source of communication (high k, high q), or where the

individual is unsure of his own opinion and witnesses a communication of low credibility (low k, low q). In such cases (k/q equal to unity), expression 9.17 becomes

$$D = G\left(\frac{x}{x_{01}} - \frac{1}{2}\left(\frac{x}{x_{01}}\right)^2\right)$$

which becomes zero when $x = 2x_{01}$. Since $2x_{01} = x_r$, the discrepancy at which total natural rejection of the corresponding position occurs, it follows that discrepancy dissonance becomes zero for all opinions expressed which are more discrepant than x_r, provided that the initial credibility of the communicator (q) were equivalent to the individual's confidence in his own stand (k). The extent of derogation of credibility that occurs in such cases is given by (9.14)

$$\text{Delta } q = k\,\frac{x}{2x_{01}}$$

$$= q, \quad \text{since } k = q \text{ and } x = 2x_{01},$$

that is, the credibility of the communicator is derogated to the maximum extent*. In other words, when the individual's confidence in his own position is equivalent to the initial credibility of the communicator, and that communicator expresses an opinion which the individual would totally reject in the absence of a communication,

* Credibility after derogation is given by (initial credibility) minus (extent to which credibility is derogated), i.e.
here, q - Delta q = q - q = 0.

the discrepancy dissonance aroused is zero and the communicator is derogated to the maximum extent*.

When the ratio k/q is greater than unity, that is, when the individual's confidence in his opinion is superior to the credibility of the communicator, then discrepancy dissonance becomes zero for discrepant opinions which are within the less unfavourable portions of the latitude of rejection. Should k/q be extremely large, that is, when the communicator lacks all credibility (q nearly zero), then the perceived relevance of a discrepant communication (expression 9.15) will be negligible even for small discrepancies within the latitude of acceptance, and discrepancy dissonance (expression 9.16) will be minimal.

On the other hand, should k/q be very much less than unity or approaching zero, then expression 9.16 will approximate to

$$D = G\frac{x}{x_{01}}$$

and discrepancy dissonance would bear a practically linear relationship with the extent to which the expressed opinion were discrepant, including opinions well into the latitude of rejection. This would occur when the credibility of the communicator is high (q large) and the individual's confidence in his own opinion is low (k very small), or if his confidence is undermined by a highly credible communicator.

* It should be noted that although discrepancy dissonance may be zero, dissonance may be aroused in the modal or volitional modes of appraisal, e.g. an unfavourable opinion associated with a well-liked friend giving rise tomodal dissonance.

The various features of the algebraic expression for aroused discrepancy dissonance are illustrated in the following series of graphs (Figures 9.6, 9.7, 9.8 and 9.9). Series 1 illustrates the effects of different levels of ego-involvement in an issue (G); series 2, the effect of different degrees of natural tolerance on an issue (x_{01}); series 3, the effect of varying levels of the individual's confidence in his own opinion (k); and series 4, the effect of varying levels of the credibility of the source of communication (q).

From the graphs it follows that the following conclusions can be derived from expression 9.17:

Series 1: (Figure 9.6) For given values of natural tolerance, confidence, and credibility, aroused discrepancy dissonance increases with greater ego-involvement.

Peak aroused discrepancy dissonance (hence, peak pressure towards attitude change) will occur at <u>greater</u> communication discrepancies under the following conditions:

Series 2: (Figure 9.7) the greater the natural tolerance on an issue, that is, the greater the latitude of acceptance;

Series 3 (Figure 9.8) the less the individual's confidence in his own position on the issue (with confidence approaching minimal values, i.e. k approaching zero, the relationship between communication discrepancy and aroused discrepancy dissonance approximates to a

linear one);

Series 4: the more credible the communicator.
(Figure 9.9)

Figure 9.6

Discrepancy dissonance v. communication discrepancy as a function of "ego-involvement in the issue"

(x_{oi}=3·0, k=0·75, q=0·65, k/q=1·15)

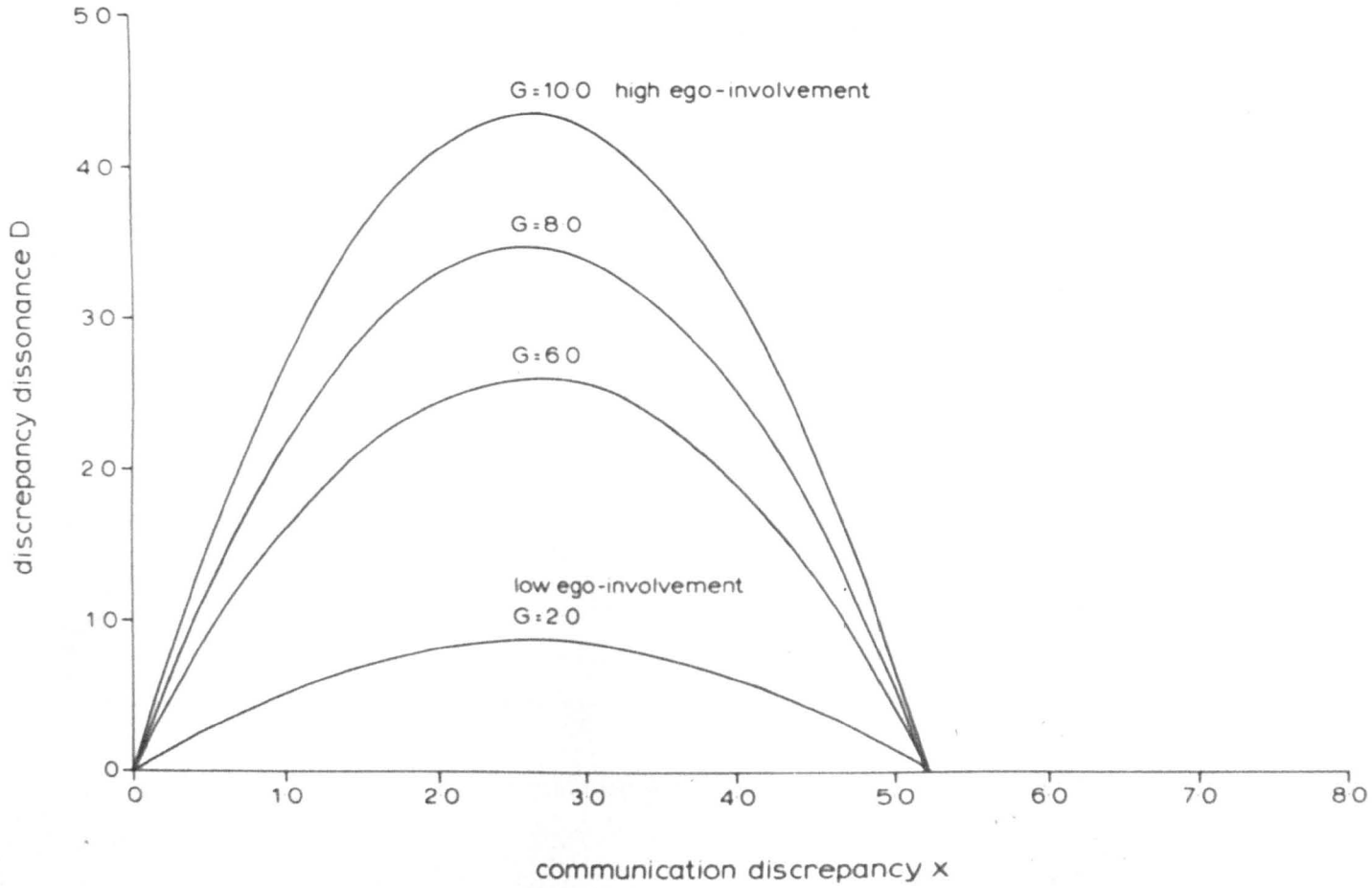


Figure 9.7

Discrepancy dissonance v. communication discrepancy as a function of the individual's natural tolerance on an issue

(G = 5·0, k = 0·75, q = 0·65, k/q = 1·15)

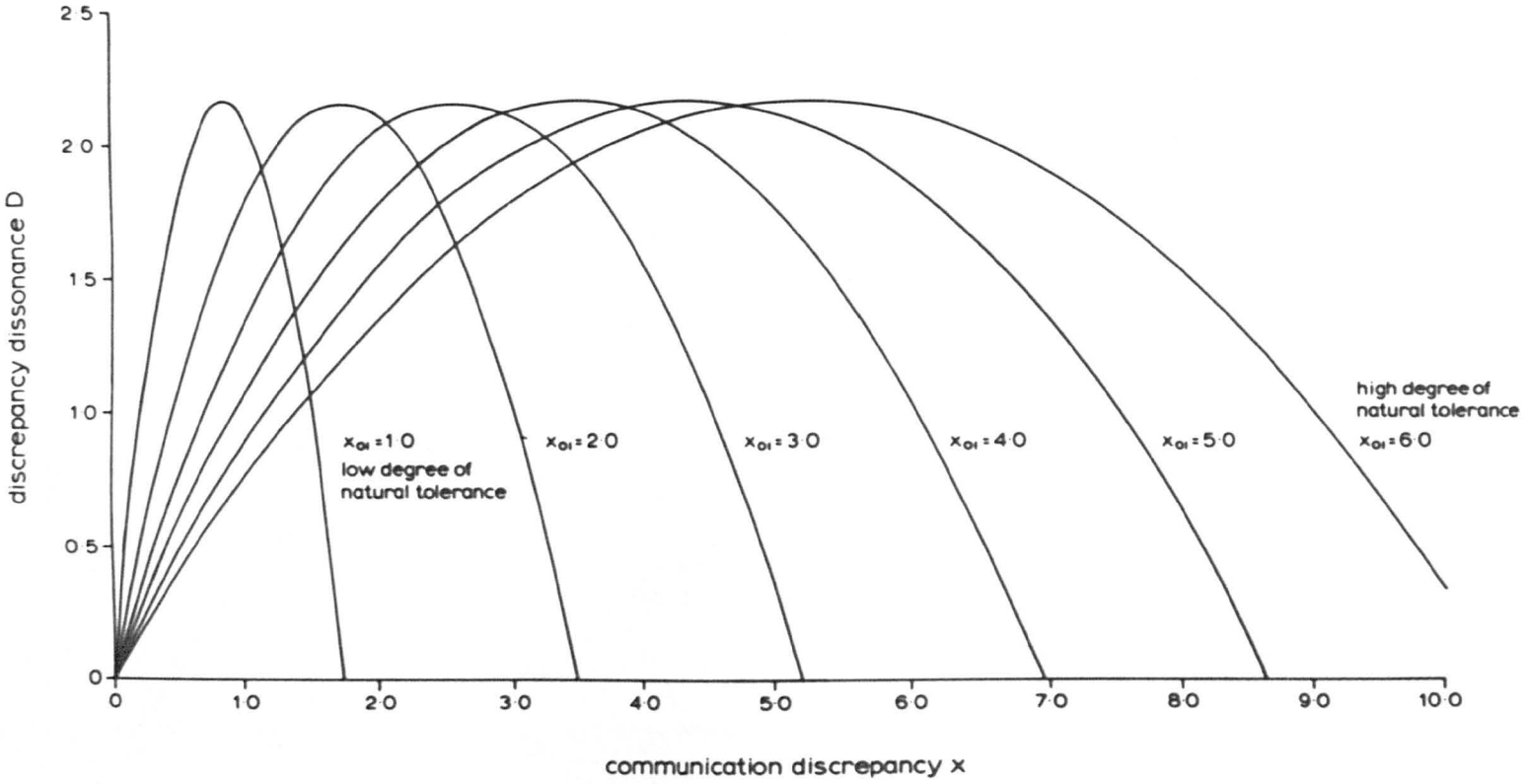


Figure 9.8

Discrepancy dissonance v. communication discrepancy as a function of "confidence in own stand on an issue"

($G = 5{\cdot}0$, $x_{ot} = 3{\cdot}0$, $q = 0{\cdot}65$)

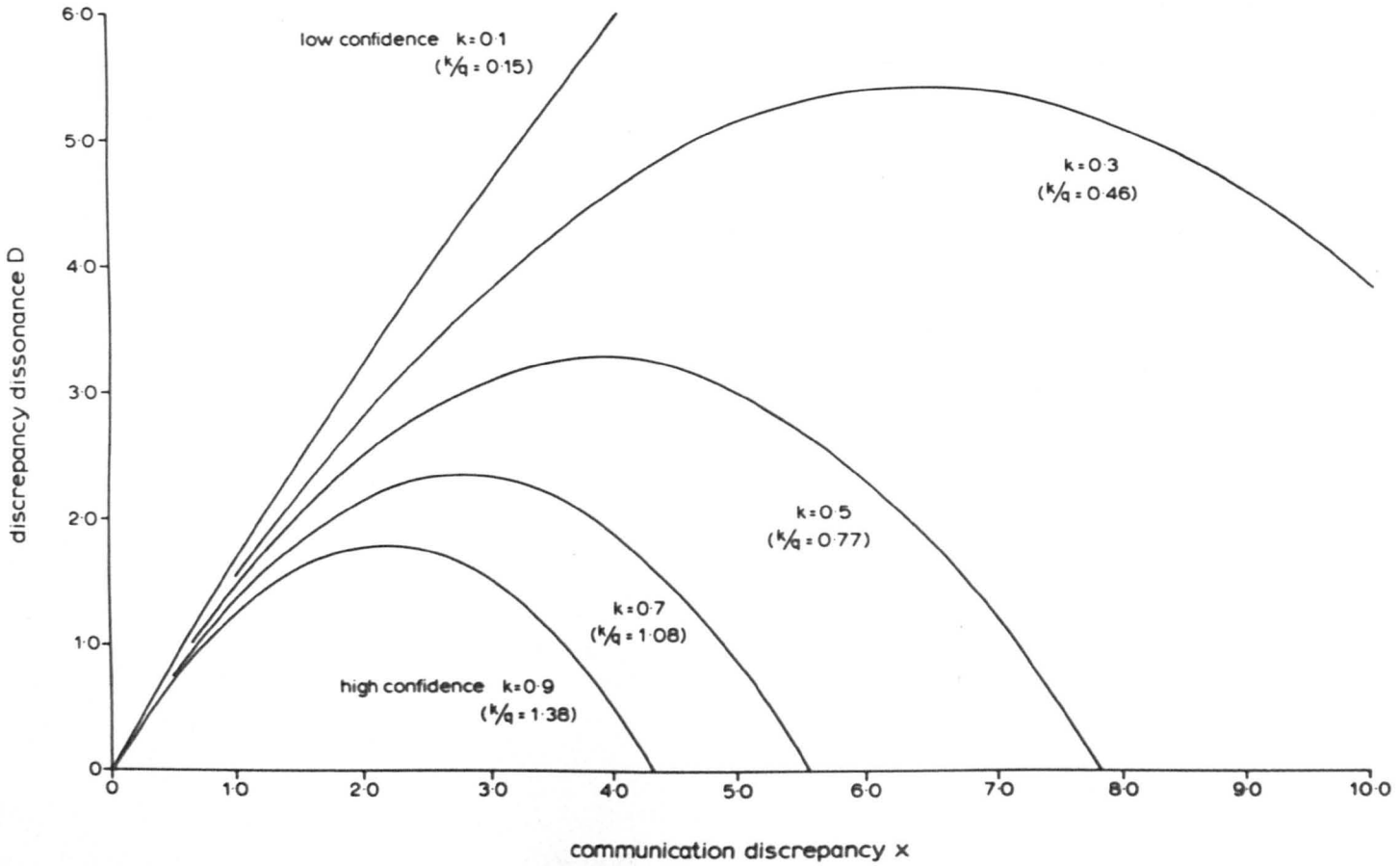
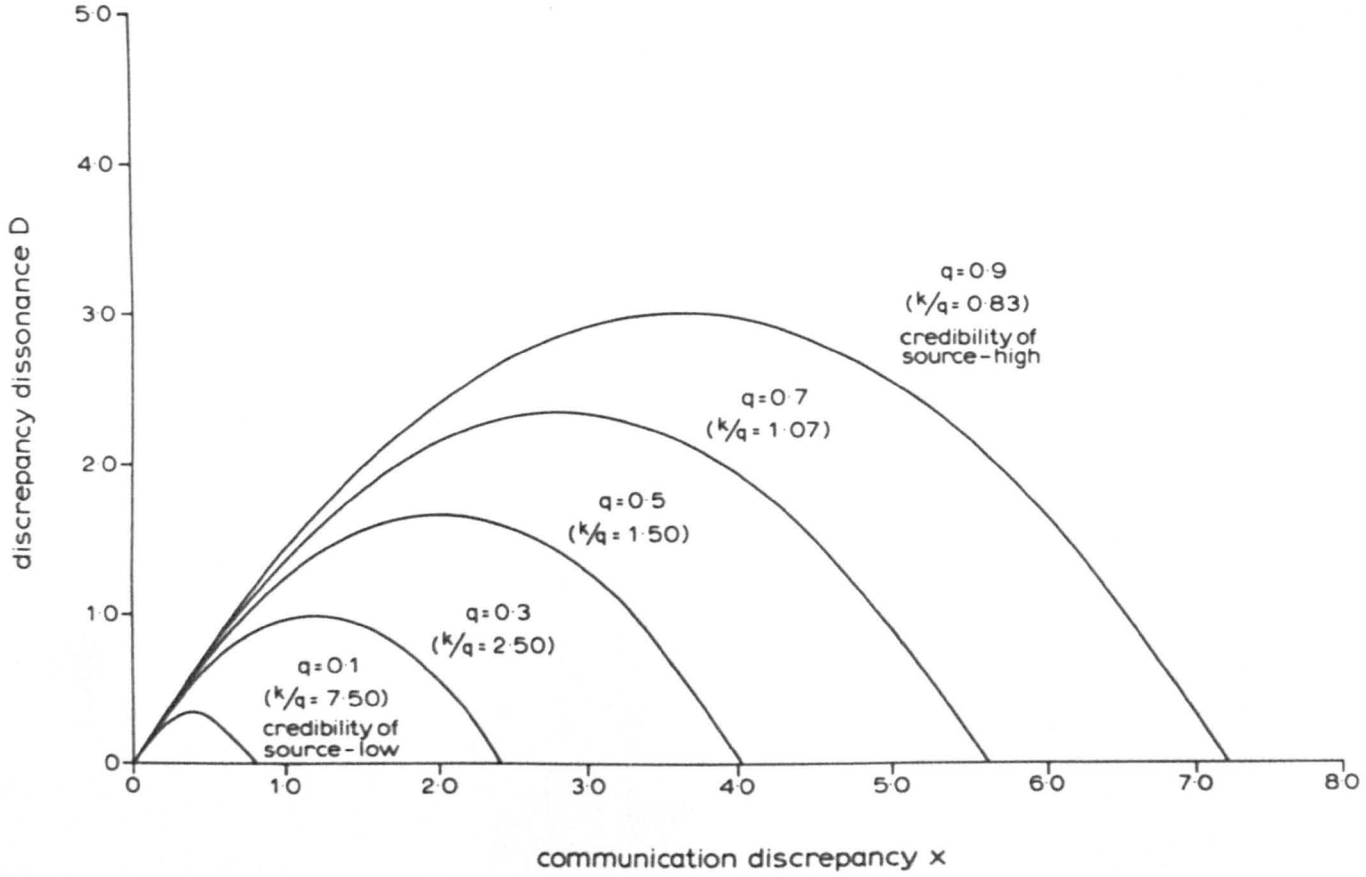


Figure 9.9

Discrepancy dissonance v. communication discrepancy as a function of "credibility of source of communication"

($G = 5{\cdot}0$, $x_{oi} = 3{\cdot}0$, $k = 0{\cdot}75$)



On the other hand, it follows that peaked aroused discrepancy dissonance and peak pressure towards attitude change will occur at smaller communication discrepancies:

Series 2: (Figure 9.7) the less the natural tolerance on an issue (i.e. the smaller the latitude of acceptance);

Series 3: (Figure 9.8 the greater the individual's confidence in his own position on the issue;

Series 4: (Figure 9.9) the less the credibility of the source of communication (with credibility approaching minimal values, i.e. q approaching zero, perceived relevance and aroused discrepancy dissonance approach zero).

Apart from peak pressures, aroused discrepancy dissonance will, in general, increase as confidence (k) decreases or as the credibility of the communicator (q) increases. In otherwords, the smaller the ratio k/q (i.e. the less the individual's confidence in his own position vis à vis the credibility of the communicator) the greater would be the aroused discrepancy dissonance, irrespective of the communication discrepancy at which peak aroused discrepancy dissonance occurs (see Series 3 and 4, Figures 9.8 and 9.9).

Other conclusions readily follow from an examination of expression 9.16:

Aroused discrepancy dissonance $D = C\left(1 - \frac{k}{q}\,\frac{x}{2x_{01}}\right)\frac{x}{x_{01}}$

It will be seen that discrepancy dissonance becomes zero when

$1 - \frac{k}{q} \frac{x}{2x_{01}} = 0$, that is, when

$$\text{communication discrepancy} \quad x = 2x_{01} \frac{q}{k} \qquad 9.18$$

Expression 9.18 gives the communication discrepancy beyond which no discrepancy dissonance is aroused, and hence no pressures toward attitude change exist. Thus, for any influence to take place, the discrepant opinion would have to be within the range of which the maximum extent is given by expression 9.18. (It should be noted that the maximum possible influence would at discrepancies half this maximum extent.)

Intolerance on an issue would, therefore, be characterised by very small "x_{01}", that is, limited natural tolerance on the issue and a very narrow latitude of acceptance. If such intolerance is also accompanied by high confidence in his own opinion (high k), then the individual would be almost impervious to another's discrepant opinion unless the discrepancy were very small, (less than the discrepancy given by 9.18). Even if the communicator were highly credible (high q), the range of discrepant opinions that might produce pressure toward attitude change would, from expression 9.18, be very limited (see Figure 9.10).

From the expression for derogation of the credibility of the source of communication (9.14)

Delta q = $k \frac{x}{2x_{01}}$ it follows that for an individual intolerant on a particular topic and having high confidence in his own opinion, derogation of a communicator expressing a discrepant opinion would be rapid. Conversely, it follows that the greater the individual's tolerance of other opinions on an issue (large x_{01}), the less would be the degree of derogation of a communicator expressing a discrepant opinion.

Expression 9.18 also shows that the individual who is tolerant of other's opinions and is also confident in his own opinion, is less vulnerable to pressures of influence than a similarly tolerant individual who lacks such confidence. He is, however, more open to influence from a highly credible source than an individual who is confident but intolerant on an issue (see Figure 9.11, and compare with Figure 9.10).

Figure 9.10

Discrepancy dissonance v. communication discrepancy for an individual who is intolerant on an issue ($x_{oi} = 1{\cdot}0$) for the following conditions:

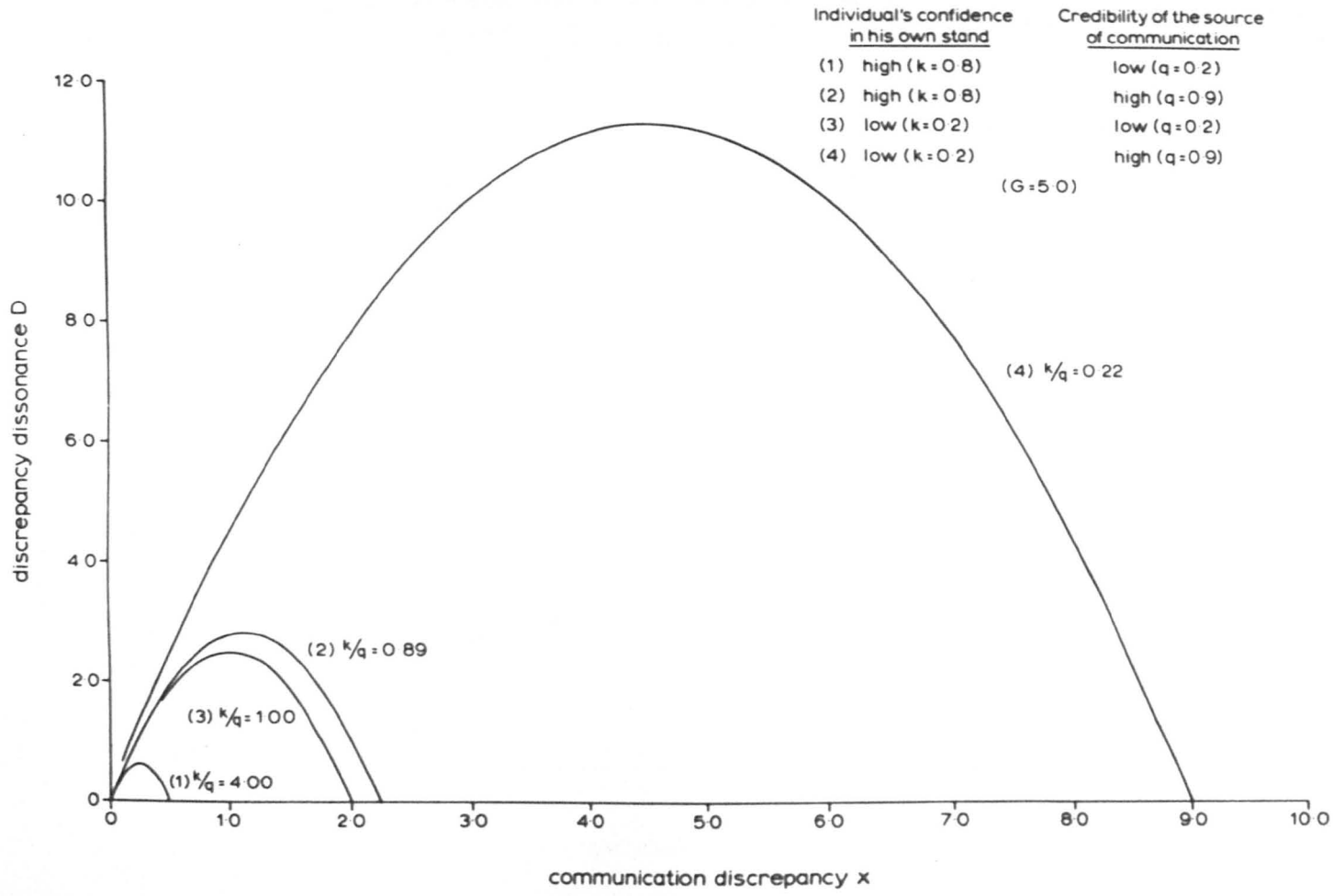
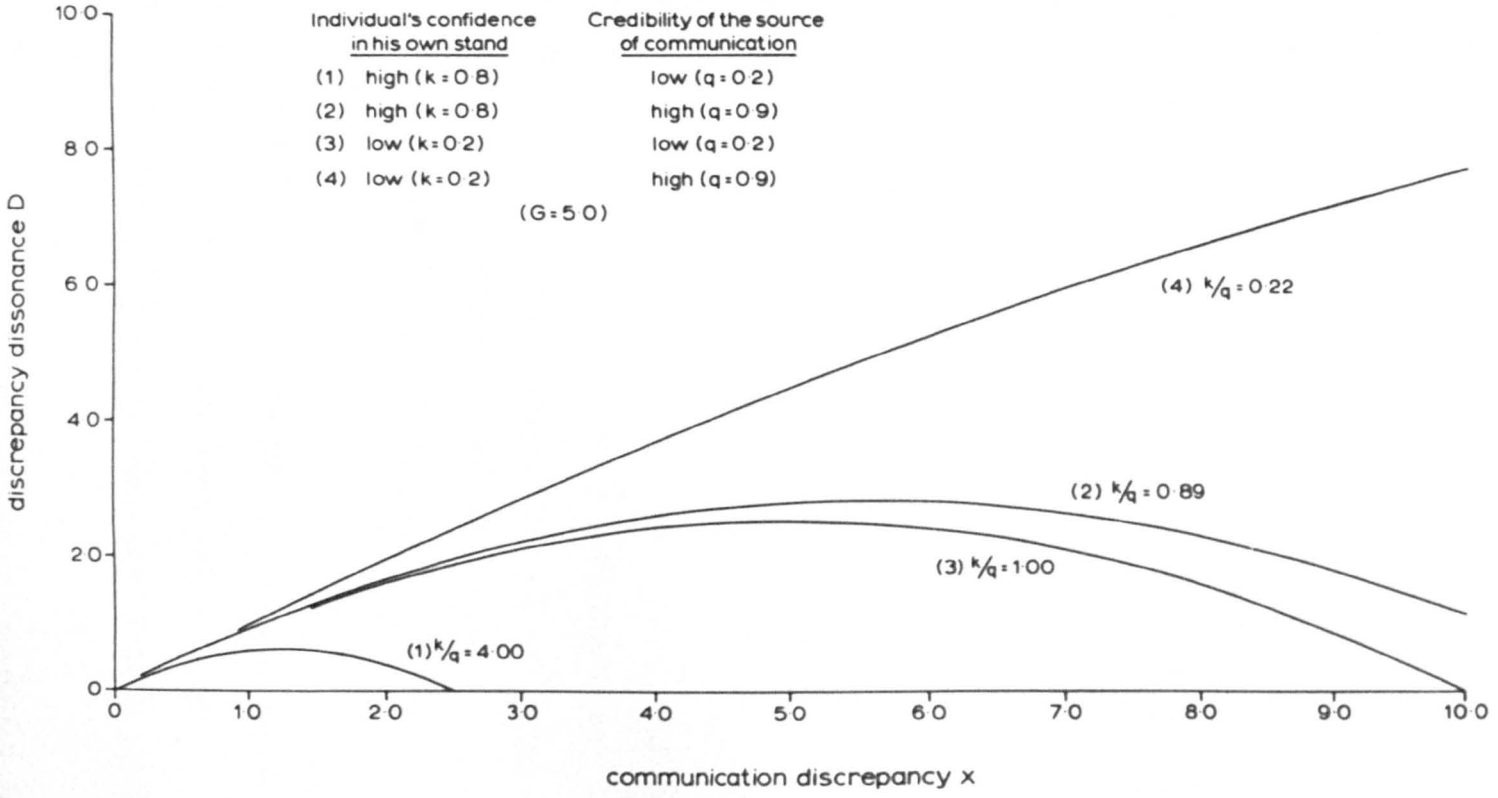


Figure 9.11

Discrepancy dissonance v. communication discrepancy for an individual who is tolerant on an issue ($x_{oi} = 5{\cdot}0$) for the following conditions:



QUALIFICATIONS TO THE EXPRESSION FOR AROUSED DISCREPANCY DISSONANCE

The algebraic expression for aroused discrepancy dissonance shows a curvilinear (quadratic) relationship between dissonance and communication discrepancy. In addition it incorporates four parameters which depend upon the individual, the issue and the source of communication. The first qualification concerns the behaviour of these parameters in the communication situation. In the algebraic expression (9.16 or 9.17) it is assumed that these parameters are independent of the progress of the communication situation but have certain values for the particular individual, the particular issue, and the particular communicator. However, it would seem possible that:

i) ego-involvement in an issue (G) may be increased or decreased by manipulating the importance of the issue in relation to other aspects of the individual's identity, though internal constraints will tend to counteract this;

ii) by argumentation, a previously unambiguous issue may be made ambiguous and result in a greater latitude of acceptable positions on the issue (i.e. increasing x_{01}) or vice-versa;

iii) the confidence the individual has in his own position (k) may be undermined or boosted by a communicator;

iv) the credibility of the communicator (q) may be increased

by the quotation of revered references, and by appeals which are in tune with the individual's identifications.

For any particular communication situation, it is reasonable that an assessment of these possibilities should be made for a more complete understanding of the influence effects. For the empirical findings of Insko et al (1966), cited as supporting the present formulation, these complicating possibilities do not apply, since, in these experiments, no argumentative statements were made by the communicators, but merely the simple statement of a discrepant opinion was given.

The second qualification centres on the algebraic relationship (expression 9.3) assessed as existing between the attitude to a particular stand on an issue and the discrepancy of that stand from the individual's own (see Figure 9.3). From the group data obtained by Sherif et al, it was assumed that a linear relationship would be a sufficient approximation. Such an assumption may not be completely warranted for certain individuals. However, the insertion of a more appropriate algebraic relationship for such individuals into the derivation of the expression for aroused discrepancy dissonance, is straightforward. Such substitution for the assumed linear relationship would not be expected to give vastly different theoretical predictions.

INTERRELATIONSHIPS BETWEEN PARAMETERS

For a particular individual, issue, and communication, the parameters G, x_{01}, k, and q will have certain values. "x_{01}" can be assessed using the technique of Sherif et al for determining the extents of the latitudes of acceptance, noncommitment and rejection for an individual with respect to an issue. It is possible also to assess ego-involvement in the issue, the individual's confidence in his own opinion on that issue, and the credibility of the communicator.

In general, it is regarded as necessary that <u>each</u> of these parameters be assessed, however, it may be the case that, under certain circumstances or for certain types of individuals, interrelationships exist between the parameters. For example, it may be the case that high commitment to a particular stand on an issue (small x_{01}) goes with high confidence in the individual's own opinion (high k), and perhaps also with high ego-involvement in the issue (high G). Apart from the cases cited previously in which such interrelationships do not hold, it should be borne in mind that a person who manifests intolerance on a whole range of issues, committed to his own opinions and with a narrow latitude of acceptance of other opinions, is not necessarily a confident person and may lack confidence in his own opinions on these issues. Hence, there is no <u>a priori</u> justification for assuming interrelationships between the parameters. Any relationships that do

exist for certain individuals are likely to depend on other, as yet unspecified, characteristics.

RECONCILIATION BETWEEN THE SOCIAL JUDGMENT APPROACH AND THE DISSONANCE APPROACH TO COMMUNICATION DISCREPANCY

The following correspondences between the expression for aroused discrepancy dissonance (9.17)

$$D = G\left(\frac{x}{x_{01}} - \frac{1}{2}\frac{k}{q}\left(\frac{x}{x_{01}}\right)^2\right)$$

and features regarded as being characteristic of the social judgment studies and the former dissonance theory approach, are given as evidence of reconciliation between what were held to be opposed approaches to communication discrepancy.

(1) The social judgment approach argues that the greater the commitment to a particular stand on an issue the less is the individual likely to change his opinion in the face of a discrepant communication, and the greater the discrepancy of the advocated opinion the less would be the attitude change. Expression 9.17 above corresponds with this statement as may be seen by referring to Figure 9.7, in which the variation in aroused discrepancy dissonance with increasing commitment to a particular stand (decreasing natural tolerance, x_{01}) is given. It is clearly seen that, beyond peak dissonance, which occurs atdiscrepancies whose proximity to the individual's own stand becomes closer with

increasing commitment, the greater the discrepancy of the advocated opinion the less the dissonance aroused.

(2) The former dissonance approach argues that the greater the discrepancy of the advocated opinion from the individual's own opinion the greater would be the dissonance, hence the greater would be the attitude change. Correspondence between this point of view and expression 9.17 above occurs when the individual's confidence in his own opinion vis à vis the credibility of the communicator is small (i.e. the ratio k/q small). See Figure 9.8 for the relationship between dissonance and communication discrepancy for small values of k.

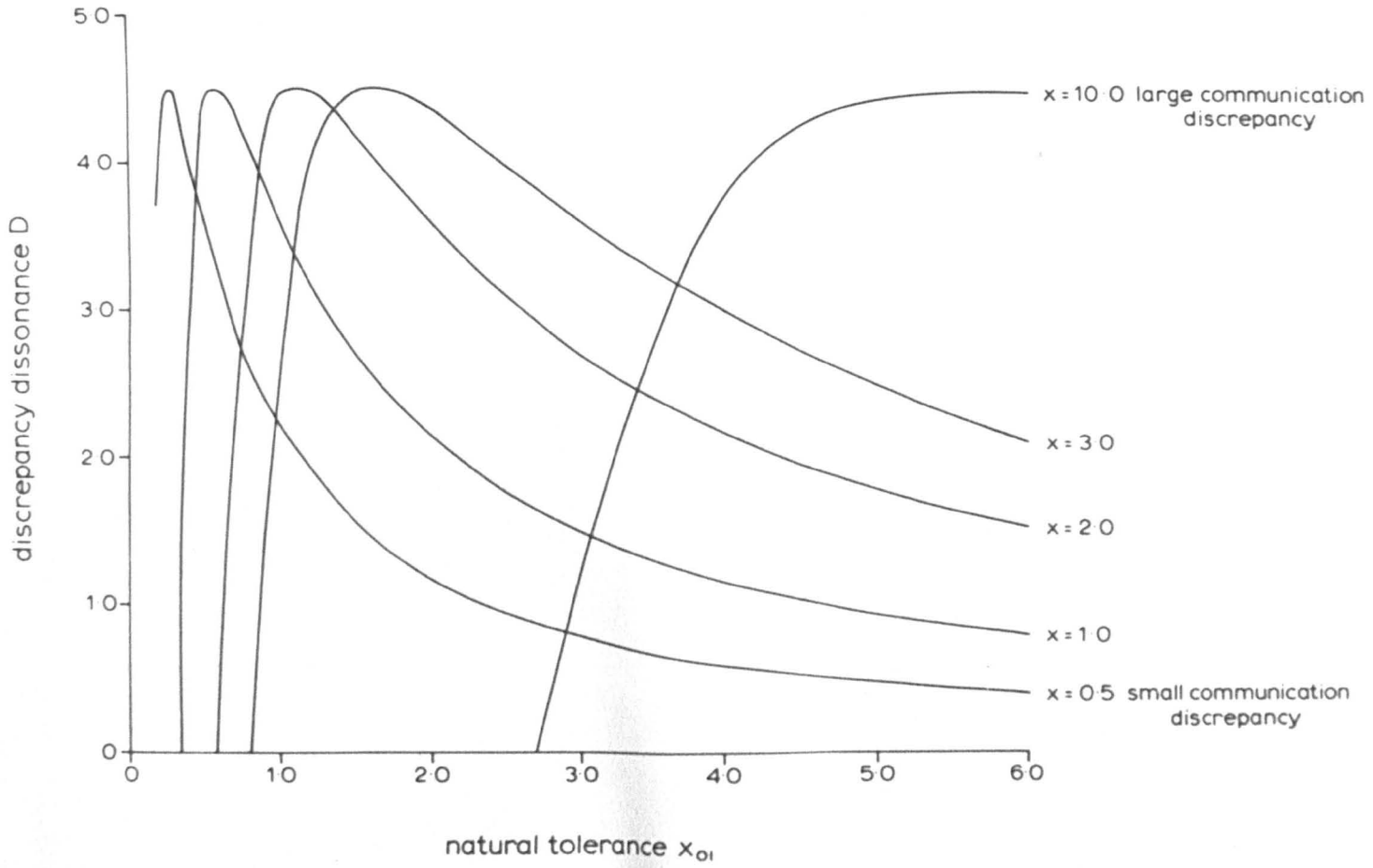
(3) The importance of the latitude of acceptance in predicting how individuals will react to a specific communication, which is stressed by Sherif et al, is wholly incorporated into expression 9.17, and is illustrated in Figure 9.12, which is a graph of aroused discrepancy dissonance "D", for individuals holding the same opinion on an issue and confronted by the same discrepant advocated opinion (i.e. communication discrepancy held constant for all individuals), but who vary with respect to their natural tolerance "x_{01}" on the issue. The theoretical graphs derived from the expression indicate that, for a constant communication discrepancy, say x=2.0, highly tolerant individuals (e.g. ones for whom x_{01} is very much less than 1.0) experience no dissonance following rapid derogation of the source of communication

(expression 9.14); individuals somehwat more tolerant, yet with still narrow latitudes of acceptance (e.g. ones for whom $x_{01} = 1.0$), experience greatest dissonance, since derogation is less rapid and the communication discrepancy not great enough for substantial attenuation of its perceived relevance (expression 9.15); and individuals more tolerant than the latter (e.g. ones for whom x_{01} is greater than 2.0), experience less dissonance in accordance with their greater latitudes of acceptance, which extend toward incorporating the advocated discrepant opinion.

Figure 9.12

Discrepancy dissonance as a function of the individual's tolerance on an issue for certain magnitudes of communication discrepancy with respect to that issue

($G = 5{\cdot}0$, $k = 0{\cdot}5$, $q = 0{\cdot}9$, $k/q = 0{\cdot}56$)



(4) In the former dissonance theory, derogation of the communicator is regarded as an alternative mode of dissonance reduction. In the formulation presented here, derogation of the credibility of the communicator is incorporated as the means by which the arousal of discrepancy dissonance may be minimized - through attenuating the perceived relevance of the discrepant opinion, given that certain prerequisites hold. For maximum attenuation these prerequisites would be low initial credibility of the communicator, high confidence in his own opinion*, and low natural tolerance on the issue in question.

ACCOMMODATIVE REAPPRAISAL AND ATTITUDE CHANGE

An expression for discrepancy dissonance aroused during appraisal has been derived which takes into account the attenuation of the perceived relevance of the discrepancy for the individual. The attenuation of perceived relevance, and the consequent minimization of the arousal of discrepancy dissonance, is regarded as the major characteristic of the process maximizing psychological efficiency during appraisal in the comparison mode. The extent of the attenuation is held to depend on various factors which have been discussed.

It now remains to consider the effect of the resultant aroused discrepancy dissonance on the appropriate referent within the identity fine structure. Possible effects of concomitant modal and

* i.e. the individual's (not the communicator's).

volitional dissonances, that might also exist in relation to the same referent are, at this stage, not taken into account. They will be discussed in the following two chapters.

From the main postulates of this thesis, it follows that aroused dissonance results in decreased psychological efficiency with respect to the maintenance of the disturbed part of the identity structure. In the case of discrepancy dissonance the disturbed part would be the relevant referent opinion, belief or expectation. In Chapter 7 it is argued that the process of maximizing psychological efficiency will lead to the modification of the fine structure organization, hence to accommodative reappraisal and dissonance reduction, provided that the internal constraints permit.

It will be assumed that the pressure for the accommodative reappraisal of the referent will be proportional to the aroused dissonance, so that the change in evaluation of the referent, in the absence of other constraints, can be represented as:

Change in evaluation

$$\text{Delta } w = a\,D \qquad 9.19$$

where "D", the aroused discrepancy dissonance, is given by expression 9.17, and "a" is a proportionality constant.

The internal constraints that would counter accommodative reappraisal are, for the moment*, considered to be solely those due

* The additional constraining or predisposing effects of concomitant modal and volitional (affective) dissonances are considered in Chapters 10 and 11.

to the strength of binding of the referent in question. The effect of the internal constraints is taken as diminishing the possible change in evaluation of the referent by an amount "P". Therefore, the expected change in evaluation would be:

$$\text{Delta } w = a\,D - P \qquad 9.20$$

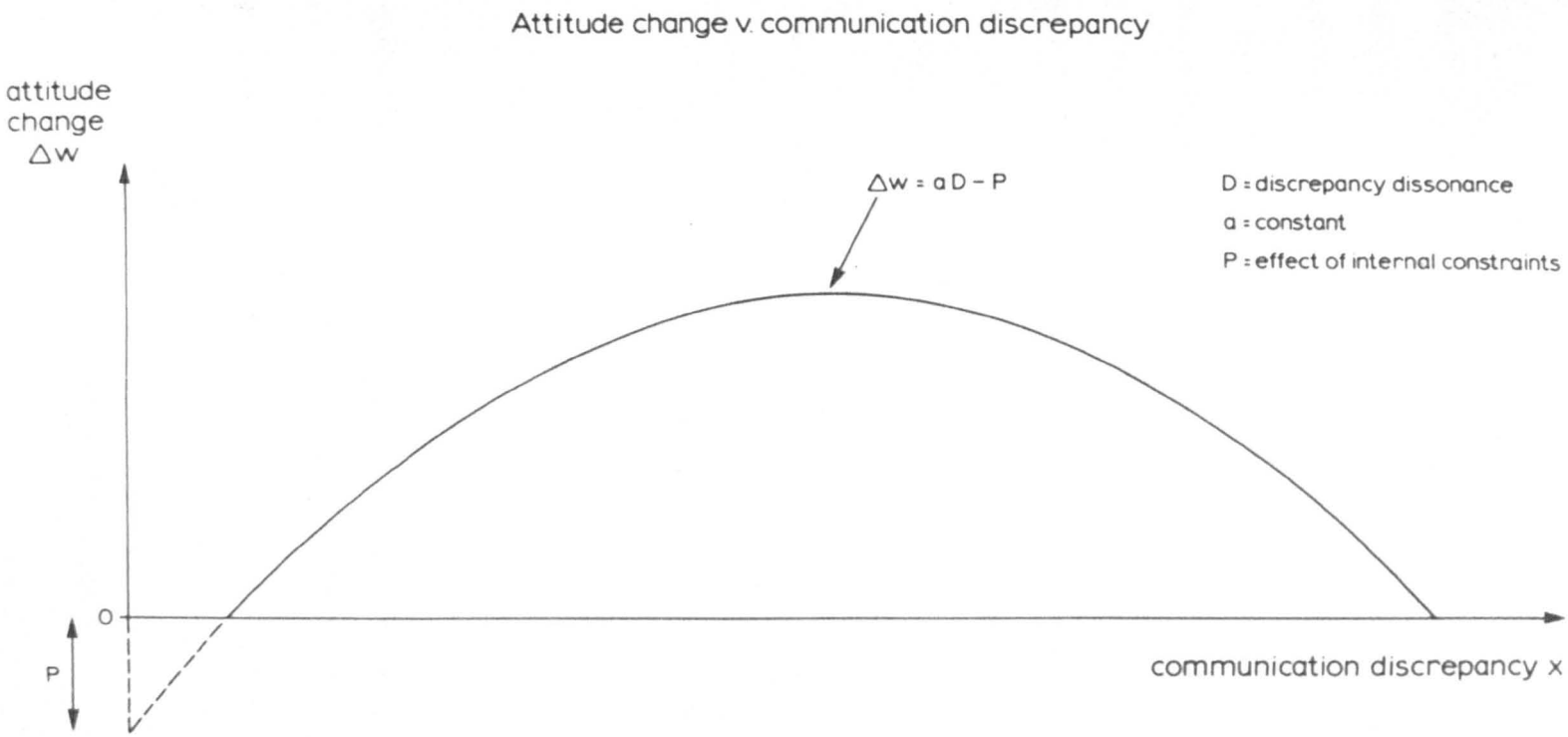
"Delta w" represents the extent of attitude change due to accommodative reappraisal, when the amount of discrepancy dissonance is "D". It should be noted from expression 9.20 that for there to be any change in evaluation, "aD" would have to be greater than "P". That is, the pressure for accommodative reappraisal would have to be greater than the internal constraints.

Inserting the general expression for aroused discrepancy dissonance (9.17) into expression 9.20, the extent of attitude change is given by:

$$\text{Delta } w = a\,G\left(\frac{\bar{x}}{x_{01}} - \frac{1}{2}\frac{k}{q}\left(\frac{x}{x_{01}}\right)^2\right) - P \qquad 9.21$$

A graph of this expression is given in Figure 9.13. (See also the earlier graphs of curves fitted to the empirical findings of Insko et al, 1966, i.e. Figure 9.5).

Figure 9.13


Attitude change v. communication discrepancy
attitude change Δw
Δw = a D – P
D = discrepancy dissonance
a = constant
P = effect of internal constraints
0
P
communication discrepancy x

DISCREPANCIES BETWEEN EXPECTATIONS AND BELIEFS AND CORRESPONDING ACTUALITIES

The situation in which a discrepancy occurs between a belief or an expectation and an actual corresponding event, may be regarded as a special case of the communication discrepancy situation. The source of communication is then interpreted as the actual configuration encountered. Since the latter is "actuality" or "reality", it is not readily denied and is, therefore, "wholly credible" or nearly so. In the face of reality the individual's confidence in his own (discrepant!) expectation is likely to be undermined. In other words, the ratio k/q would tend to approach zero, and the general expression for discrepancy dissonance (9.16 or 9.17) would tend to approximate to:

$$D = C \frac{x}{x_{01}} \qquad 9.22$$

If this is the case, it follows that the greater the discrepancy, the greater would be the discrepancy dissonance.

The corresponding accommodative reappraisal would also increase with the discrepancy, so long as the approximation holds good. That is, the change in evaluation is given by expression 9.20:

$$\text{Delta } w = a R - P$$

$$= a C \frac{x}{x_{01}} - P \text{ approximately} \qquad 9.23$$

It will be noted that such accommodative reappraisal of an expectation

or a belief to actuality, is equivalent to an error-correcting function*.

* Cf. Miller, Galanter and Pribram (1960): In terms of their TOTE (Test-Operate-Test-Exit) unit, the arousal of discrepancy dissonance and subsequent accommodative reappraisal corresponds closely to the corrective function of the feedback loop: Test-Operate-Test-Exit, except that the focus here is on the adjustment of the individual's expectations and beliefs to "actuality", rather than on the manipulative action (i.e. operation) taken to eliminate the discrepancy between a "plan" (or "intention") and the corresponding "actuality" (or "effects and outcomes" - see Chapter 11 on the volitional mode). Thus, the operation of the comparison mode may be compared with the TOTE unit as follows:

(a) original expectation,
(b) comparison of actuality with expectation (Test),
(c) arousal of discrepancy dissonance (incongruity),
(d) accommodative reappraisal ("Operate" - internal, within the psychological matrix),
(e) new expectation,
(f) comparison of actuality with new expectation (Test),
(g) no discrepancy dissonance aroused (congruity),
(h) no further accommodative reappraisal (Exit).

It is, of course, frequently the case that the "plan" cannot be executed because, for example, the expectations incorporated into it are unrealistic. Such expectations would normally become subject to pressures for revision (i.e. accommodative reappraisal), albeit that the magnitude of the aroused discrepancy dissonances, and hence the pressures for revision, may be attenuated in accordance with the analysis presented in this and subsequent chapters.

SUMMARY

In this chapter, detailed attention is given to the comparison mode of appraisal and to the arousal of discrepancy dissonance. The focus of attention is directed to the problem of the relationship between the degree of attitude change following the advocation by another of a discrepant opinion and the extent to which the opinion advocated is discrepant from the individual's own.

It is noted that the attempted specification of this relationship has tended to be a controversial issue between the "social judgment" approach to attitudes (e.g. Sherif et al, 1965) and dissonance theory. Insko et al (1966) find that both theoretical approaches may be interpreted in such a way that a curvilinear relationship can be predicted to hold between the degree of attitude change and the amount of discrepancy, such that for relatively small discrepancies the extent of attitude change increases with increasing discrepancy, until a point is reached beyond which further increases in discrepancy result in less attitude change. Both interpretations are, however, based on different arguments.

The present formulation, which is algebraically expressed, offers a genuine reconciliation between the social judgment and traditional dissonance approaches. It also postulates a curvilinear relationship, the degree of curvilinearity of which is dependent on explicitly stated parameters. In doing so it incorporates features

of both previous approaches.

The following are the parameters, in addition to the variable of communication discrepancy, contained in the expression for aroused discrepancy dissonance:

(1) ego-involvement in an issue, being an indication of the extent to which the issue is important or a matter of concern to the individual;

(2) natural tolerance on an issue, being an indication of the extent to which the individual will agree to stands on an issue close to his own in the absence of any attempt to influence him (i.e. the degree of commitment to his own stand).

(3) confidence in self's opinion on an issue, being an indication of the degree to which the individual is confident in his own opinion on an issue;

(4) credibility of the communicator, being an indication of the degree to which the communicator or source of communication is regarded as credible by the individual.

It is argued that the "social judgment" approach of assessing attitudes gives ameasure of the second variable mentioned above, that is, natural tolerance on an issue (or degree of commitment to a stand), but not a measure of ego-involvement as is suggested by Sherif et al (1965). In their formulation no distinction is drawn between these two parameters which, in the present formulation, are

both represented in the algebraic expression.

The derivation of the algebraic expression begins with considering the transformation of degrees of acceptance and rejection of stands on an issue (Sherif et al) into attitudes held toward those stands (i.e. into evaluations of those stands). This enables the individual's evaluation of a discrepant stand to be assessed, in the absence of any communication, in terms of his natural tolerance on the issue in question. It follows that, in the presence of a communication, the extent of the discrepancy in evaluation between the advocated opinion and the individual's own, can be assessed uncontaminated by the communication situation itself.

The derivation of the algebraic expression then continues by considering the process of maximising psychological efficiency as it tends to minimize the arousal of discrepancy dissonance. It is assumed that the cognition of the extent of the discrepancy between the two opinions is, initially, basically unaltered by this process, but that the perceived relevance of this discrepancy may, in general, become attenuated to a greater or lesser degree.

The extent of this attenuation is held to depend upon the degree to which the credibility of the communicator advocating the discrepant opinion can be derogated, taking into account also the initial credibility of the communicator. The degree of this derogation is in turn held to be a function of the appraised discrepancy in evaluation of the opinion expressed in the communication

compared with the individual's own, and is related to the degree of confidence the individual has in his own opinion, and to the extent of his natural tolerance on the issue in question.

The resultant algebraic expression for aroused discrepancy dissonance shows it to be a quadratic function of communication discrepancy, which however approximates to a linear function under the following conditions:

(a) when the individual's confidence in his own opinion is low,

(b) when his natural tolerance of other stands on the issue in question is extensive, and

(c) when the credibility of the communicator is high.

Series of graphs indicate the effect on aroused discrepancy dissonance of variations in the magnitude of each parameter (i.e. each of theparameters: ego-involvement in an issue, natural tolerance on an issue, confidence in self's opinion on an issue, and credibility of the communicator).

In various ways it is demonstrated that, depending upon the combined circumstances of the individual, the particular issue in question, and the communicator, the derived curvilinear relationship conforms to the salient features of the social judgment approach on the one hand, and of the traditional dissonance approach on the other.

The expression for attitude change (i.e. accommodative reappraisal) follows directly from that for aroused discrepancy dissonance. It includes a proportionality constant and the representation of the resisting pressure due to the strength of binding of the referent belief, expectation or opinion. The expression for attitude change is matched with the empirical findings of Insko et al (1966).

Finally, accommodative reappraisal following the appraisal of discrepancies between expectations and beliefs and corresponding actualities, is regarded as a special case, in which the "source of communication" is taken to be "actuality" and hence usually "wholly credible", and in which the individual's confidence in his own belief or expectation is generally undermined. The resultant expression for accommodative reappraisal in these circumstances has the characteristics of an error-correcting function.

SECTION II: NEW THEORY

A THEORY OF APPRAISAL AND REAPPRAISAL: AN EXTENDED REFORMULATION OF DISSONANCE THEORY

CHAPTER 10 PROCESSES OF ATTITUDE CHANGE - THE MODAL MODE AND MODAL DISSONANCE

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INTRODUCTION

The previous chapter is confined to the appraisal of straightforward cognitive discrepancies between established beliefs, expectations or opinionsheld by the individual and corresponding actualities encountered or opinions expressed by others. Accommodative reappraisal of these beliefs, expectations and opinions is discussed in relation to aroused discrepancy dissonance.

Attitude change following the appraisal of constellations of relationships between emotionally toned entities, including other persons, and following the appraisal of the effects and outcomes of actions in relation to identifications and intentions, is considered in this and the next chapter.

The present chapter is concerned with appraisal and reappraisal in relation to the status quo configuration of the identity structure, that is, in relation to the representation in the individual's psychological matrix of the established evaluations and attributed characteristics of people, objects and issues that make up the modal self aspect of his identity. Thus, with the view of introducing algebraic notation, the analysis and exposition of Chapters 6 and 7 is followed in relation to the modal mode of appraisal, modal dissonance (i.e. the disturbance to some portion of the status quo configuration of the individual's identity), accommodative reappraisal following dissonance arousal, assimilative reappraisal associated with the incorporation of some aspect of an

appraised situation into the identity structure, and bound dissonance following the assimilation of a disturbance into the structure.

A distinction is made between the overall referent evaluation of an entity (i.e. the "uncontaminated" attitude to that entity) and the attitude to that entity as it is appraised in the context of a particular situation. An algebraic expression is derived for the "attitude adjustment" with respect to the entity for the duration of the appraisal. This expression is seen to bear a certain resemblance to that for attitude change with respect to a concept related by an assertion to another concept, derived by Osgood and Tannenbaum (1955) from the congruity principle.

A close parallel is shown to exist between the present formulation of dissonance theory in considering attitude change associated with accommodative reappraisal with respect to the modal self aspect of identity, and the Rosenberg and Abelson (1960) formulation of balance theory, excepting the gross nature of the latter compared with the former.

MODAL APPRAISAL

The appraisal process is regarded as an excited state of the identity structure in which transactions occur between certain portions of that structure and the environment, and which results in the awareness of the particular circumstances of whatever is being appraised. It is dependent on the construct system for the delineation of the distal stimuli and on the activated portions of

the entity/action system for the projection of evaluative and affective characteristics on to the delineated stimuli. The abstraction "appraisal plane" represents the loci of these transactions and is conceived as consisting of the activated portions of the identity structure (regarded as projections on to the plane), in conjunction with the interpretations of the distal stimuli originating from the environment as they are appraised against the construct system.

As an illustrative example for introducing algebraic notation, the news broadcast example of Chapter 6 is used. The analysis of this example in terms of modal appraisal is as follows:

(1) "the government intends to promote a voluntary incomes policy"

(2) "the government intends to raise the bargaining status of the Trades Union Congress (TUC)"

(3) "the TUC does not intend to support a voluntary incomes policy".

Modal appraisal consists of the delineation of the distal stimuli as elements in the appraisal plane featuring reciprocal associations and dissociations, together with the projection of evaluative characteristics on to these elements. Reciprocal relationships arise in the modal mode by virtue of one entity related to a second, being the same (in static terms) as the second related to the first.

The delineated elements would depend on the idiosyncracies of the individual's construct system but in the example are assumed to be:

the entity:-	"the government"
the entity:-	"a voluntary incomes policy"
the entity:-	"Trades Union Congress"
the relationship:-	an "association" between the government and a voluntary incomes policy;
the relationship:-	an "association" between the government and the TUC;
the relationship:-	a "dissociation" between the TUC and a voluntary incomes policy.

The individual is assumed, for the purposes of the example, to have favourable overall evaluations of the three entities based upon a past history of direct or indirect encounters. These evaluations are defined (6.1) as referent evaluations, that is, evaluations within the identity structure which are activated during appraisal. The projection of these evaluations on to the delineated distal stimuli give rise to projected evaluations which are defined (6.2) as the resultant evaluations of entities in the appraisal plane, together with their relationships with respect to the referents.

NOTATION

The following notation is used to refer to referent evaluations and to appraised relationships between entities:
the referent evaluation of an entity "p" is denoted:- R(p);
the relationship between one entity "o" and another "p" is denoted:- u(op) or u(po).

The projected evaluation of one entity with respect to another as referent would be made up of the delineated relationship of that entity to the referent and the projection of its evaluation in the identity structure (i.e. the entity's referent evaluation) on to the delineated entity in the appraisal plane. Thus, the projected evaluation of the entity "p" and its relationship "u(op)" with respect to the referent "o" becomes:- u(op)R(p). Since the referent evaluation of the entity "o" would be denoted "R(o)", the projected evaluation of "o" and its relationship to the referent "p" becomes:- u(po)R(o).

The convention used for writing relationships is that the symbol for the referent entity precedes that for the entity evaluated in the appraisal plane. Since in modal appraisal the relationship between "p" and "o" is a reciprocal one

u(op) = u(po) . . . . . reciprocity in the modal mode.

With the above notation, Table 10.1 represents the contents of the modal appraisal plane following the appraisal of the news broadcast by the individual. It is directly comparable with the equivalent table in Chapter 6 (Table 6.2).

Table 10.1

IDENTITY STRUCTURE		MODAL APPRAISAL PLANE	
referent evaluations:		**projected evaluations:**	
R(g)	(+)	u(gv) R(v)	(+)(+) = (+) consonant
		u(gt) R(t)	(+)(+) = (+) consonant
		u(gg) R(g)	(+)(+) = (+) consonant
R(v)	(+)	u(vg) R(g)	(+)(+) = (+) consonant
		u(vt) R(t)	(-)(+) = (-) dissonant
		u(vv) R(v)	(+)(+) = (+) consonant
R(t)	(+)	u(tg) R(g)	(+)(+) =(+) consonant
		u(tv) R(v)	(-)(+) = (-) dissonant
		u(tt) R(t)	(+)(+) = (+) consonant

Key: R(g), R(v), R(t) denote the referent evaluations of "the government", "a voluntary incomes policy", and "Trades Union Congress" respectively - (+) denotes favourable overall evaluation.

u(gv) = u(vg) denotes the reciprocal relationship between

"the government" and "a voluntary incomes policy" - (+) denotes that the relationship is an association.
u(gt) = u(tg) denotes the reciprocal relationship between "TUC" and "the government" - (+) denotes an association.
u(vt) = u(tv) denotes the reciprocal relationship between "a voluntary incomes policy" and "TUC" - (-) denotes a dissociation.
u(gg), u(vv) u(tt) denote the identity relationships between the referent entity and its projection on to the appraisal plane.

A dissonant element is defined (6.3) as a projected evaluation which is incompatible with respect to the referent, and a consonant element is defined (6.4) as a projected evaluation which is compatible with respect to the referent. Dissonant and consonant elements are indicated in the table (Table 10.1).

The appraised relationship between two entities "o" and "p" may range from complete association (defined as u(op) = +1) to complete dissociation (defined as u(op) = -1), hence u(op) may take on any value between +1 and -1 with zero indicating the appraised absence of a relationship. The referent evaluation of an entity "o" may range from completely favourable (R(o) = +1) to completely unfavourable (R(o) = -1), hence R(o) may also range from +1 to -1 with zero denoting either a neutral evaluation or an ambivalent evaluation balanced between favourable and unfavourable characteristics.

In general, therefore, a projected evaluation of the form u(op)R(p) may range from +1 to -1. Its incompatibility or compatibility with respect to the referent will depend on whether the referent evaluation is favourable or unfavourable. Thus an unfavourable projected evaluation will be compatible with an unfavourable referent evaluation, but incompatible with a favourable referent evaluation. The degree of compatibility or incompatibility will depend on the strength of the appraised relationship u(op) and on the evaluation of the entity projected on to the appraisal plane R(p). See Table 10.1 where consonant (compatible) and dissonant (incompatible) elements with respect to their referents are indicated according to the compatibility or incompatibility of their signs.

It is noted in Chapter 6 that distortion of appraisal may occur as a consequence of the processes tending to maximize psychological efficiency during appraisal in such a way as to minimise aroused dissonance. It is assumed, therefore, that table 10.1 represents the contents of the appraisal plane taking into account such distortion, i.e. it is assumed that the appraised relationships indicated may have been attenuated by the maximizing process as compared with unpressured delineations against the construct system.

CONTEXT ATTITUDE

In general, the attitude to a particular entity in the context of the situation in which it is appraised, will differ from the

referent evaluation of that entity held by the individual. The "context attitude" is defined to distinguish between the attitude towards an entity "in context" and the referent evaluation, and refers to the contents of the appraisal plane associated with the entity. Thus, in the example (table 10.1), the context attitude towards the entity "a voluntary incomes policy" would include its association with "the government" and its dissociation from the "TUC". It is the attitude towards a favourably evaluated voluntary incomes policy that is supported by the favourably evaluated government, but not by the also favourably evaluated Trades Union Congress. The context attitude is defined to represent this ambivalence and, for "a voluntary incomes policy" is expressed as:

$$R'(v) = \frac{u(vv)\,R(v) + u(vg)R(g) + u(vt)R(t)}{/u(vv)/ + /u(vg)/ + /u(vt)/} \qquad 10.1$$

that is, the context attitude R'(v) depends on the projected (identity) evaluation of the referent entity and on the projected evaluations of the entities related to the referent in the context of the appraised situation. u(vv)R(v) is the projected identity evaluation of "a voluntary incomes policy", u(vg)R(g) is the projected evaluation of "association of the government" with the referent, and u(vt)R(t) is the projected evaluation of "dissociation of the TUC" from the referent. The expression for the context attitude above is normalised by placing the absolute values of the

strengths of the associations and dissociations with respect to the referent in the denominator, thus the range of values that the context attitude may take on is from totally unfavourable (-1) to totally favourable (+1). Note that, unless the relationship between the referent and some other entity is one of <u>total</u> association or dissociation, the identity evaluation of the referent contributes the greatest weight to the context attitude (because u(vv) = 1).

Expression 10.1 may be generalised to include any number of contextually related entities. If $a_1, a_2, a_3 \ldots a_n$ denote n entities appraised as interrelated in the context of a certain situation, then the context attitude towards entity a_1 would be:

$$R'(a_1) = \frac{u(a_1a_1)R(a_1) + u(a_1a_2)R(a_2) + u(a_1a_3)R(a_3)\ldots}{/u(a_1a_1)/ + /u(a_1a_1)/ + /u(a_1a_3)/\ldots} \qquad 10.2$$

i.e.

$$R'(a_1) = \frac{\sum_{i=1}^{n} u(a_1a_i)R(a_i)}{\sum_{i=1}^{n} /u(a_1a_i)/} \qquad 10.3$$

Likewise, the context attitude towards entity a_2 would be:

$$R'(a_2) = \frac{\sum_{i=1}^{n} u(a_2a_i)R(a_i)}{\sum_{i=1}^{n} /u(a_2a_i)/}$$

and so on for the context attitudes towards the other entities.

ATTITUDE ADJUSTMENT AND THE CONGRUITY MODEL

Since, in general, the context attitude towards an entity will not be the same as the referent evaluation of that entity, there will be an attitude adjustment, taking into account the contextual relationships, for the duration of the appraisal. This attitude adjustment is unrelated to dissonance processes which will be considered in due course in association with accommodative reappraisal of referent evaluations in the identity structure. The present discussion is confined to the contents of the appraisal plane and the idiosyncracies of the immediate situation. An expression for attitude adjustment may be readily obtained as the difference between the context attitude towards an entity and its referent evaluation:

$$\text{Attitude adjustment in relation to entity } a_1 = R'(a_1) - R(a_1) \qquad 10.4$$

$$= \frac{\sum_{i=1}^{n} u(a_1 a_i) R(a_i)}{\sum_{i=1}^{n} /u(a_1 a_i)/} - R(a_1)$$

A situation in which only two entities are related by an assertion is the kind of situation which has been examined by Osgood and Tannenbaum (1955, Osgood et al, 1957) in accordance with their principle of congruity(see Chapter 2 of this thesis). Their

derivation from this principle of the magnitude of change in the polarization of one "sign" when related to another "sign" by an assertion, incorporates degrees of evaluation of the signs (here, referent evaluations) but not degrees of intensity of the relationship expressed by the assertion.

The expression for attitude adjustment presented here, which does incorporate the intensity of relationships, will be worked through for the case in which two entities (referent evaluations $R(a_1)$, $R(a_2)$) are related by an assertion, and in which the strength of the relationship is appraised as being $u(a_1a_2)$. Comparisons will be made between the resulting algebraic expressions and those derived by Osgood and Tannenbaum, but it is emphasized that the principles of derivation are quite different for the two formulations.

For the two entities, expression 10.4 for the attitude adjustment in relation to the referent evaluation of entity a_1 becomes:

$$R'(a_1) - R(a_1) = \frac{u(a_1a_1)R(a_1) + u(a_1a_2)R(a_2)}{/u(a_1a_1)/ + /u(a_1a_2)/} - R(a_1)$$

$$= \frac{u(a_1a_1)R(a_1) + u(a_1a_2)R(a_2) - (/u(a_1a_1)/+/u(a_1a_2)/)R(a_1)}{/u(a_1a_1)/ + /u(a_1a_2)/}$$

i.e.

$$R'(a_1) - R(a_1)$$

$$= \frac{(u(a_1a_1) - /u(a_1a_1)/)R(a_1) + u(a_1a_2)R(a_2) - /u(a_1a_2)/R(a_1)}{/u(a_1a_1)/ + /u(a_1a_2)/}$$

$$= \frac{u(a_1a_2)R(a_2) - /u(a_1a_2)/R(a_1)}{/u(a_1a_1)/ + /u(a_1a_2)/}$$

(because for the identity relationship $u(a_1a_1) = /u(a_1a_1)/ = 1$)

$$= \frac{/u(a_1a_2)/}{/u(a_1a_1)/ + /u(a_1a_2)/} \left(\frac{u(a_1a_2)}{/u(a_1a_2)/} R(a_2) - R(a_1) \right) \qquad 10.5$$

In expression 10.5 the ratio:

$$\frac{u(a_1a_2)}{/u(a_1a_2)/}$$

has the value plus one if $u(a_1a_2)$ is positive (denoting an association between entity a_1 and entity a_2) or the value minus one if $u(a_1a_2)$ is negative (denoting a dissociation between the two entities).

For an association, therefore, the attitude adjustment of the entity a_1 in the context of the appraised situation is:

$$R'(a_1) - R(a_1) = \frac{/u(a_1a_2)/}{/u(a_1a_1)/ + /u(a_1a_2)/} (R(a_2) - R(a_1)) \qquad 10.6$$

For a dissociation the attitude adjustment is:

$$R'(a_1) - R(a_1) = \frac{/u(a_1a_2)/}{/u(a_1a_1)/ + /u(a_1a_2)/} (- R(a_2) - R(a_1)) \qquad 10.7$$

The expressions corresponding to 10.6 and 10.7 derived by Osgood and Tannenbaum from the congruity principle are as follows:

Magnitude of change of "sign" (1) for an <u>associative</u> assertion relating "sign" (1) with "sign" (2)*

$$C_1 = \frac{/p_2/}{/p_1/ + /p_2/} (p_2 - p_1) \qquad 10.6(x)$$

where p_1 represents the evaluative polarization of "sign" (1) (c.f. referent evaluation $R(a_1)$) and p_2 represents the evaluative polarization of "sign" (2) (c.f. referent valuation $R(a_2)$).

Magnitude of change of "sign" (1) for a <u>dissociative</u> assertion relating "sign" (1) with "sign" (2)*

$$C_1 = \frac{/p_2/}{/p_1/ + /p_2/} (-p_2 - p_1) \qquad 10.7(x)$$

These expressions show a marked resemblance to those derived for attitude adjustment (10.6 and 10.7). The differences, however, are important. In the congruity model, no information about the strength of the association or dissociation between the two "signs" is incorporated. Only evaluations of the entities (or "signs") are used. In the present formulation (expressions 10.5, 10.6 and 10.7)

* see Chapter 2 of this thesis for the congruity model.

the appraised relationship between the two entities is represented by $u(a_1a_2)$ which may range in value from +1 to -1, i.e. from complete association to complete dissociation. The deficiency of the congruity model in this respect is quite clear. Should the relationship between the entities be <u>appraised</u> as non-existent (whatever the assertion) then the present formulation indicates no attitude adjustment (since $u(a_1a_2) = 0$), in contrast to the congruity model which would continue to predict a change. That this is a real problem for the congruity model can be seen by the introduction by Osgood and Tannenbaum of two arbitrary factors - the "credulity" and "assertion" constants.

If, in expressions 10.6 and 10.7,

$$\frac{/u(a_1a_2)/}{/u(a_1a_1)/ + /u(a_1a_2)/}$$ is replaced by

$$\frac{/R(a_2)/}{/R(a_1)/ + /R(a_2)/}$$ exact equivalence would be

obtained between the modified expressions for attitude adjustment compared with the expressions derived from the congruity model (10.6(x) and 10.7(x): accepting the equivalence in notation , i.e.

$R(a_1) = p_1$ = evaluation of entity (1),

$R(a_2) = p_2$ = evaluation of entity (2).)

What this modification demonstrates is that the expressions derived

from the congruity model may be derived from the formulation of attitude adjustment presented here, by ignoring the appraised strengths of the relationships $u(a_1a_2)$, $u(a_1a_1)$* and making the assumption that these relationships (between entities a_2, a_1 and their referent a_1) are proportional to the evaluations of the entities.

It is concluded from the above analysis that two assumptions of the congruity model are made explicit:

(a) the congruity model takes no account of the appraised strength of the association or dissociation between the entities related by an assertion;

(b) in the congruity model the implicit assumptions exist that the appraised strength of a relationship between an entity and its referent is proportional to the evaluation of that entity.

The expression for the attitude adjustment of the second entity (a_2) in the context of the appraisal is obtained in the same manner as for the first:

Attitude adjustment of entity a_2 is the difference between the "context attitude" and the referent evaluation of a_2, that is

* $u(a_1a_1)$, being the identity relationship, usually has the value unity (i.e. complete association).

$$R'(a_2) - R(a_2)$$

$$= \frac{/u(a_2a_1)/}{/u(a_2a_2)/ + /u(a_2a_1)/} \left(\frac{u(a_2a_1)}{/u(a_2a_1)/} R(a_1) - R(a_2) \right) \qquad 10.8$$

For an <u>associative</u> relation between entities a_1 and a_2 this becomes:

$$R'(a_2) - R(a_2) = \frac{/u(a_2a_1)/}{/u(a_2a_2)/ + /u(a_2a_1)/} \left(R(a_1) - R(a_2) \right) \qquad 10.9$$

For a <u>dissociative</u> relation the attitude adjustment of a_2 becomes:

$$R'(a_2) - R(a_2) = \frac{/u(a_2a_1)/}{/u(a_2a_2)/ + /u(a_2a_1)/} \left(- R(a_1) - R(a_2) \right) \qquad 10.10$$

Expressions 10.8, 10.9 and 10.10 for attitude adjustment of entity a_2 correspond to expressions 10.5, 10.6 and 10.7 for attitude adjustment of entity a_1. It is, of course, clear that expression 10.8 summarises expressions 10.9 and 10.10, and likewise that expression 10.5 summarises expressions 10.6 and 10.7.

Again, by replacing $\frac{/u(a_2a_1)/}{/u(a_2a_2)/ + /u(a_2a_1)/}$

by $\frac{/R(a_1)/}{/R(a_2)/ + /R(a_1)/}$

in expressions 10.9 and 10.10, exact equivalence would be obtained with the corresponding congruity model expressions. The assumption made by this modification is, again, that the relationships between

the entities a_1, a_2 and their referent a_2 are proportional to the evaluations of the entities.

By comparing expression 10.8 with 10.5 it will be seen that, apart from direction, the magnitude of attitude adjustment of the two entities a_1, a_2 will be the same if the relationship between them is appraised to be exactly equal, i.e. if

$$u(a_1a_2) = u(a_2a_1) \qquad 10.11$$

i.e. the relationship of entity a_2 to its referent a_1 is appraised to be equivalent to the relationship of entity a_1 to its referent a_2. (NB It is assumed that the identity relationships $u(a_1a_1)$ and $u(a_2a_2)$ are both equal to unity*.)

Reciprocity of relationship is considered to be a feature of modal appraisal (a_2 is reciprocally related to a_1 by virtue of a_1 being related to a_2) and in the absence of the volitional mode of appraisal the identity 10.11 would be assumed to hold. However, if the one entity (say a_1) were appraised in the volitional mode as acting upon or doing something to the other entity (such as making an assertion about a_2 - i.e. the subject of Osgood and Tannenbaum's attention) then the relationship would no longer be reciprocal and

$u(a_1a_2)$ would not be equal in magnitude to $u(a_2a_1)$ 10.12

i.e. (considering the right hand side of the inequality)

"entity a_1 is related to its referent a_2 (modal appraisal) and acts upon a_2 (volitional appraisal)"

* Should the identity be appraised as incomplete in some respect, it would follow that the value of the identity relationship would be less than unity.

is not the same as (considering the left hand side)

"entity a_2 is related to its referent a_1 (modal appraisal) but does not act (or acts differently) upon a_1 (volitional appraisal").

(NB In the present notation the symbol for the referent entity preceeds the symbol for the evaluated entity (i.e. $u(a_1a_2)$ reads "the appraised relationship of entity a_2 to its referent a_1".)

The volitional mode of appraisal is considered in the next chapter. However, it is noted here that if a_1 is acting upon or making an assertion about a_2, then $u(a_2a_1)$ will in general be greater than $u(a_1a_2)$. Examining the expressions (10.5, 10.8) for attitude adjustment of the entities a_1 and a_2, it is seen that this means that the magnitude of adjustment for the recipient (a_2) of the assertion will be greater than the adjustment of the source or agent (a_1). This conforms with the empirical findings of Osgood and Tannenbaum (1955) for which they were obliged to introduce the "assertion constant" correction.

REAPPRAISAL

The discussion of attitude adjustment of an entity in the context of its appraisal in relation to other entities, is confined solely to the contents of the appraisal plane for the duration of the appraisal. The "context attitude" is the attitude of the immediate moment and is the evaluation of an object as its

circumstances are altered by its contextual relationships to other entities. The projected evaluations of these other entities with respect to the referent evaluation of the object contribute to the "context attitude" towards it. Frequently the context attitude will be ambivalent as when certain of the projected evaluations are incompatible with the referent evaluation of the object.

Attitude adjustment denotes the difference between the ongoing referent evaluation and the context attitude with respect to a particular entity for the duration of the appraisal; it may, therefore, be a transient adjustment and of no consequence beyond the immediate situation.

For there to be any lasting change or modification in evaluation of a referent entity (i.e. "attitude change" in contrast to "attitude adjustment"), either the evaluation of the referent entity within the identity structure (as opposed to the projected evaluations of the appraisal plane) would have to become modified, or the characteristics of the entity within the identity structure would have to become further differentiated. The first process of change would be a process of accommodative reappraisal, the second would be one of assimilative reappraisal; both processes would depend on the pressures arising from the contents of the appraisal plane during appraisal, that is, on the pressures arising from the projected evaluations of the appraised situation.

Note

It is a simple matter to distinguish in practice between the "context attitude" towards an entity and the changed overall evaluation of that entity, which may have been the consequence of the assimilation of contextual elements into the referent structure that may have occurred during assimilative reappraisal. A particular "context attitude" towards an entity depends on the continuation of the situational context and terminates when the appraisal of the particular contextual configuration ends. If the contextual elements are not assimilated into the identity structure during the appraisal, they will not feature as attributed properties of the (referent) entity and hence would not subsequently be elicited in relation to that entity. On the other hand, if the contextual elements are assimilated, they may become manifest on subsequent occasions as attributes of the entity. The detection by an observer of the expression of these attributes in the absence of the original context would therefore indicate their assimilation. The "context attitude" which is the result of an appraisal of a particular situation during which there is no assimilation of contextual elements, will not be manifested on subsequent occasions.

THE AROUSAL OF MODAL DISSONANCE: ACCOMMODATIVE REAPPRAISAL AND DISTORTION OF APPRAISAL

Modal dissonance is aroused if, during modal appraisal, any projected evaluation in the appraisal plane is incompatible with a referent evaluation, for example, the incompatible projected evaluation of the Trades Union Congress' opposition to a (favourably evaluated) voluntary incomes policy, with respect to the favourable referent evaluation of the TUC. The arousal of dissonance and its consequent disturbance to the identity structure is, according to the postulates of this thesis, accompanied by the additional mobilisation of energy to counter the disturbance. The efficiency of maintaining the disturbed part structure would therefore become less than optimal and lead to a decrease in psychological efficiency. The loci of the disturbing effects would be the referents of the incompatible evaluations, and, should the constraints on these referents permit, the processes tending to maximize psychological efficiency would result in their accommodative reappraisal. The accommodative reappraisal would be accompanied by dissonance reduction(Chapter 7).

Thus, for two referent entities a_1 and a_2 (both favourably evaluated) a dissociation between them may be delineated during modal appraisal. Table 10.2 illustrates for such a case the contents of the modal appraisal plane with respect to the referents within the identity structure.

Table 10.2

Identity structure	Modal appraisal plane
referent evaluations:	projected evaluations:
	$u(a_1a_2)\ R(a_2)$ (-) (+) = (-)
$R(a_1)$ (+)	dissonant
	$u(a_1a_1)\ R(a_1)$ (+) (+) = (+)
	consonant
	$u(a_2a_1)\ R(a_1)$ (-) (+) = (-)
$R(a_2)$ (+)	dissonant
	$u(a_2a_2)\ R(a_2)$ (+) (+) = (+)
	consonant

The magnitude of modal dissonance aroused is given by hypothesis 6.10. It is taken to depend on:

a direct relation to the degree of ego-involvement in the referent;

a direct relation to the perceived relevance of the referent in the context of the appraisal; a direct relation to the number and strength of dissonant elements with respect to the referent;

an inverse relation to the number and strength of consonant elements with respect to the referent.

With respect to the referent a_1, the magnitude of modal dissonance would therefore be:

$$D(a_1) = G(a_1)\, r(a_1) \times \frac{/u(a_1a_2)\, R(a_2)/}{/u(a_1a_1)\, R(a_1)/} \qquad 10.13$$

(there being only one dissonant and one consonant element with respect to the referent - see Table 10.2);

where $G(a_1)$ represents the degree of ego-involvement in a_1;

$r(a_1)$ represents the perceived relevance of a_1 in the context of the appraisal; and $D(a_1)$ represents the magnitude of modal dissonance, locus - the referent a_1.

The referent a_2 would also be the locus of modal dissonance, given by:

$$D(a_2) = G(a_2)\, r(a_2) \times \frac{/u(a_2a_1)\, R(a_1)/}{/u(a_2a_2)\, R(a_2)/} \qquad 10.14$$

The total modal dissonance affecting that portion of the identity structure containing the entities a_1 and a_2, would therefore be (summing 10.13 and 10.14):

$$D(a_1, a_2) = G(a_1)r(a_1)\, \frac{/u(a_1a_2)R(a_2)/}{/u(a_1a_1)R(a_1)/} + G(a_2)r(a_2)\, \frac{/u(a_2a_1)R(a_1)/}{/u(a_2a_2)R(a_2)/} \qquad 10.15$$

Now, if the individual were highly ego-involved in entity a_2 but not so in entity a_1, the evaluation of which might be loosely constrained, complete accommodative reappraisal of a_1, such that its evaluation becomes unfavourable, would eliminate the dissonance (see Table 10.3). However, if the evaluation of a_1 were also constrained, little accommodative reappraisal could take place and dissonance would not be substantially reduced.

Noting that, in the modal mode,

$$u(a_1a_2) = u(a_2a_1) \quad \text{. . . . . reciprocity of relationship}$$

expression 10.15 may be rewritten:

$$D(a_1,a_2) = /u(a_1a_2)/\left(C(a_1)r(a_1)\frac{/R(a_2)/}{/u(a_1a_1)R(a_1)/} + C(a_2)r(a_2)\frac{/R(a_1)/}{/u(a_2a_2)R(a_2)/} \right) \qquad 10.16$$

Table 10.3 Immediate accommodative reappraisal occurring within the duration of the appraisal of a particular situation

(a) Re-evaluation of the referent entity a_1 and consequent elimination of modal dissonance (c.f. the original state of affairs on appraisal - Table 10.2)

Identity structure	Modal appraisal plane
referent evaluations:	projected evaluations:
	$u(a_1a_2)\ R(a_2)$ (-) (+) = (-)
$R(a_1)$acc. (-)	consonant
	$u(a_1a_1)\ R(a_1)$acc. (+) (-) = (-)
	consonant
	$u(a_2a_1)\ R(a_1)$acc. (-) (-) = (+)
$R(a_2)$ (+)	consonant
	$u(a_2a_2)\ R(a_2)$ (+) (+) = (+)
	consonant

"$R(a_1)$acc." denotes the accommodative reappraisal (i.e. the re-evaluation of the referent entity a_1.

Table 10.3 (contd.)

(b) Note also that if the constraints on entity a_2 permit, then similar re-evaluation of a_2 would also eliminate dissonance (evaluation of referent a_1 assumed to be constrained), i.e.

referent evaluations:	projected evaluations:	
	$u(a_1a_2)$ $R(a_2)$acc.	(-) (-) = (+)
$R(a_1)$ (+)	consonant	
	$u(a_1a_1)$ $R(a_1)$	(+) (+) = (+)
	consonant	
	$u(a_2a_1)$ $R(a_1)$	(-) (+) = (-)
$R(a_2)$acc. (-)	consonant	
	$u(a_2a_2)$ $R(a_2)$acc.	(+) (-) = (-)

Examination of expression 10.16 is facilitated by writing 10.16 as

$$D(a_1,a_2) = /u(a_1a_2)/ F \qquad 10.17$$

where F refers to its counterpart in 10.16. From expression 10.17 it is clear that modal dissonance would be reduced if the magnitude of $u(a_1a_2)$ were decreased. $u(a_1a_2)$ refers to the appraised relationship between the two entities delineated against the construct system. A change in its magnitude would therefore indicate a

distortion of the external situation. This possibility would depend on the ambiguity of the appraised situation, or on the ambiguity or lack of resilience of the constructs against which the relationship is appraised.

It is here assumed that the processes tending to maximize psychological efficiency would operate to minimize the arousal of dissonance during appraisal, hence that distortion, if it could occur, would already have operated to give the contents of Table 10.2. However, it is possible that the situation increases in ambiguity as appraisal continues and that dissonance is reduced through the re-evaluation of the relationship. It should be noted that, in this case, no accommodative reappraisal occurs within the identity structure, and that it is the delineation of the distal stimuli in the appraisal plane which changes - this, of course, would depend on the constructs against which the delineation occurs. It may also be noted that complete elimination of modal dissonance would occur if the distortion nullified the relationship or changed it from a dissociation to an association (Table 10.4).

Table 10.4 Distortion of appraisal

Distortion of theappraised relationship between the entities a_1 and a_2 from a dissociation to an association, and the consequent elimination of modal dissonance. (c.f. the state of affairs in the absence of substantial distortion - Table 10.2)

Identity structure	Modal appraisal plane	
referent evaluations:	projected evaluations:	
	$u(a_1a_2)$dist.$R(a_2)$	(+)(+) = (+)
$R(a_1)$ (+)	consonant	
	$u(a_1a_1)R(a_1)$	(+)(+) = (+)
	consonant	
	$u(a_2a_1)$dist.$R(a_1)$	(+)(+) = (+)
$R(a_2)$ (+)	consonant	
	$u(a_2a_2)$ $R(a_2)$	(+)(+) = (+)
	consonant	

"$u(a_1a_2)$dist." = "$u(a_2a_1)$dist." denotes the distorted reciprocal relationship between a_1 and a_2 during modal appraisal.

COMPARISON OF MODAL DISSONANCE WITH THE BALANCE MODEL

The elimination of modal dissonance by the accommodative reappraisal of either one of the referent entities (Table 10.3(a) or 10.3(b)), or by the distorted appraisal of the relationship existing

between the two entities (Table 10.4) corresponds to the paths to "balance" postulated by Rosenberg and Abelson (1958, 1960; see Chapter 2 of this thesis). According to their formulation the situation given in table 10.2 would be represented by a "(+n+) band" where the signs of the two concepts (here, the entities a_1 and a_2) are positive, and the relation between them negative (n). This band would be an unbalanced one (i.e. "one in which the relationship is inconsistent with the signs of the concepts"). According to Rosenberg and Abelson the unbalanced band would be unstable and would be likely to undergo change towards balance. As a consequence of the "cognitive inconsistency" the individual may:

" 1. Change one or more of the signs (in a single band the affect signs of either of the two concepts of the sign of the relation between them).

2. Redefine or 'differentiate' one or more of the concepts.

3. Stop thinking." (Rosenberg and Abelson, 1960, p.121)

Their formulation tends to concentrate on predictions made by the first of the three possibilities listed above.

Table 10.3(a) and (b), and Table 10.4 compare with statement (1) above. In Table 10.3(a) the referent evaluation of a_1 changes from favourable to unfavourable (giving the balanced band: -n +), in

Table 10.3(b) it is the referent evaluation of a_2 that changes (to the balanced band: +n-), and in Table 10.4 the relationship between the entities changes from a dissociation to an association (to the balanced band: +p+). In each case modal dissonance is eliminated and corresponds to the elimination of imbalance in the balance formulation.

Clearly, there is a close parallel between the formulation of modal dissonance and the "balance model". However, as stated in Chapter 6 there are major differences. The distinctions drawn in Chapter 6 are:

(1) Rosenberg and Abelson explain the instability of an unbalanced band in terms of cognitive inconsistency, in contrast with the explanation of the disturbance to the identity structure in terms of self-referring affective incompatibilities, with the energetics of of the disturbance deriving ultimately from emotive sources (the system of affective states);

(2) "unbalanced bands" and "dissonant elements" are not identical (the two dissonant elements in Table 10.2 are not the same as the single unbalanced band (+n+);

(3) the existence of consonant elements (including the identity projected evaluations) in the present formulation do not correspond with balanced bands;

(4) the inclusion of the factors of ego-involvement and perceived relevance in the expressions for modal dissonance has no equivalent in the balance formulation.

In addition, other important differences exist. The discussion of modal dissonance has been confined to the appraisal process. Table 10.2 refers to the duration of appraisal and Tables 10.3 and 10.4 to the possible immediate consequences of the appraisal. A distinction is maintained throughout between the ongoing contents of the identity structure and the transient contents of the appraisal plane. The referent evaluations of the entities a_1 and a_2 are ongoing contents of the identitystructure, but the appraised relationship between them is not and features only transiently in the appraisal plane (though to be sure it may become incorporated into the identity structure by way of the process of assimilative reappraisal to be considered shortly).

Thus the appraised relationship is of a different nature compared with that of the referent entities and the constraints acting upon it are different from those acting upon the referent evaluations. The constraints acting on the appraised relationship are those pressures which derive from the constructs against which the distal stimuli are delineated. The constraints acting on the referent entities are, by contrast, those of the internal binding

energies. Therefore, the processes of accommodative reappraisal of the referent evaluations cannot be considered to be the same as the processes of distortion of the relationship.

If the appraised situation is unambiguous, and if the constructs in question are also unambiguous and resilient, then distortion cannot take place to any substantial degree. On the other hand, accommodative reappraisal of the referents cannot take place if the internal constraints do not allow. For Rosenberg and Abelson no distinction is made, and the "concepts" and the "relation" are treated as equivalent with regard to achieving balance.

A further major practical difference is the quantitative nature of the expressions for modal dissonance compared with the qualitative nature of the balance model. The expressions for modal dissonance provide the means for obtaining estimates of the magnitude of dissonance depending on the factors of:

(1) the magnitude of the appraised relationship between an entity and its referent contributing to a dissonant or consonant element, e.g. $u(a_1a_2)$,

(2) the degree of evaluation of a referent entity contributing to a dissonant or consonant element, e.g. $R(a_1)$

(3) the degree of ego-involvement in a referent which is the locus of dissonance, e.g. $G(a_1)$,

(4) the degree of perceived relevance of such a referent in the context of the appraised situation, e.g. $r(a_1)$.

The balance model is severely restricted in terms of qualitative signs of affect (i.e. + or −) and of relation between concepts (i.e. p or n).

Algebraically, the general expression for modal dissonance is expressed as:

$$D(a_1) = C(a_1)r(a_1)\frac{\underset{i \neq 1}{\text{Sigma}}/u(a_1a_i)R(a_i)/}{\underset{j}{\text{Sigma}}/u(a_1a_j)R(a_j)/} \qquad 10.18$$

where $D(a_1)$ denotes dissonance with respect to the referent a_1, $C(a_1)$ denotes the ego-involvement in the referent, $r(a_1)$ denotes the perceived relevance of the referent in the context of the appraisal, the $u(a_1a_i)R(a_i)$ denote the dissonant elements and the $u(a_1a_j)R(a_j)$ denote the consonant elements with respect to the referent a_1.

ASSIMILATIVE REAPPRAISAL AND THE BINDING OF DISSONANCE

It has been emphasized that the extent of distortion during appraisal as a consequence of internal pressures, depends on the ambiguity of the situation being appraised, and on the ambiguity and lack of resilience of the constructs involved in the appraisal. Flexibility in the delineation of the distal stimuli is absent when the situation is clearly structured and when the constructs are

precise and pertinent to the situation and, in addition, firmly anchored in the construct system.

It has alsobeen emphasised that, when distortion of the environmental configuration is restricted and the arousal of dissonance results, accommodative reappraisal of those referent entities, being the loci of dissonance within the identity structure, can occur only if the constraints on them permit. Should the binding energies of the referent entity structures be great enough to counteract the pressure of maximizing psychological efficiency, then accommodative reappraisal and dissonance reduction cannot occur. Thus, a weakly bound referent entity structure is likely to undergo accommodative reappraisal, but a well-established one with many strongly associated attributed characteristics would be constrained against accommodative reappraisal.

If neither distortion in the appraisal plane nor accommodative reappraisal in the identity structure can occur, and if the pressures of the appraisal are such that the perceived relevance of the referent entities in the context of the situation cannot be attenuated, then the aroused dissonance will remain. If, in addition, the pressures of appraisal are sufficiently strong (depending on the delineation of the distal stimuli against the construct system) to overcome both the resisting pressures of the process operating to maximise psychological efficiency and the threshold binding energy for the establishment of a new connection in the identity structure, then the element in the appraisal plane

giving rise to the dissonance will become incorporated into the identity structure. Such elaboration of the identity structure has been defined (in Chapter 7) as assimilative reappraisal.

The assimilation of a new element into the identity structure, and its consequent association with a referent entity structure, is a further differentiation of that structure (i.e. "object differentiation") and hence a reappraisal of the entity. The assimilation may be of a consonant element (i.e. a projected evaluation in the appraisal plane that is compatible with the overall referent evaluation of the entity, whether that referent evaluation is favourable or unfavourable) in which case the reappraisal amounts to a hardening of attitude, but in thecase under discussion at present - the assimilation of a dissonant element - the reappraisal amounts to a change in overall evaluation, the amount of which would depend on the extent of previously established attributes of the entity.

Such assimilation of a dissonant element does not eliminate the dissonance. What it does mean is that the dissonance is no longer dependent on the contents of the appraisal plane which exist for the duration of appraisal only, but that it persists in the identity structure beyond the moment of confrontation with the particular situation arousing the dissonance. This persisting dissonance has been defined in Chapter 7 as <u>bound</u> dissonance. The portion of the identity structure containing bound dissonance is

therefore the locus of disruptive tendencies, the energetics of which derive from emotive sources. The organization of that portion (including the dissonant element) is, however, maintained by the additional mobilization of energy which counteracts the disruptive tendencies. The maintenance of the bound dissonance results, therefore, in a continuing decreased psychological efficiency with respect to the affected portion.

The state of bound dissonance has earlier been defined as a subexcited state with regard to the affected part of the identity structure and, as such, continues without concomitant awareness unless it is raised to an excited state (i.e. the activation of the appraisal plane). The raising to an excited state may occur during subsequent appraisals and reappraisals, in which case the substantial interaction between the bound dissonance and the delineation of the immediate situation is likely to be accompanied by acute awareness, not so much of the specific nature of the bound dissonance, but of the tension of the moment*.

* The following speculations are associated with the notion of bound dissonance:
(1) The extra mobilization of energy associated with bound dissonance may be sufficiently great to raise the subexcited state subsequently to excited states giving rise to hallucinatory appraisals of dominating thoughts during waking states, or to dreams during sleeping states. Presumably the extent of domination during waking states will depend on the relative energetics of the bound dissonance compared with the energetics of ongoing appraisals. In dream states, when appraisals of the external environment no longer suppress the eruption of subexcited states into excited states, the appraisal plane

(contd.)

* (contd.)

may become activated and thereby allow processes maximizing psychological efficiency to operate, so tending to dissipate bound dissonances by phantasy reappraisals.

(2) If the gross accumulation of large bound dissonances becomes very great, the decreased psychological efficiencies with respect to the affected portions of the identity structure may give rise to a substantial decrease in the psychological efficiency of the identity structure as a whole. Such pervasive low psychological efficiency, which is not related to any one specific portion of the identity structure (hence, specific event), may be responsible for general anxiety states experienced by certain individuals.

(3) The extremely rapid assimilation and binding of large amounts of dissonance with low cognitive content (dependent on pressures deriving ffom essentially semantically unlabelled constructs) during the experiencing of traumatic events, may be responsible for the inability subsequently to verbalise these experiences. The inability to verbalize and the possibility that these highly energetic subexcited states may erupt into dream states accompanied by phantasy reappraisals (to stabilize the more potent disintegrative tendencies), would seem to be equivalent to the characteristics of the process of repression postulated by Freud, without invoking the dynamics of repression postulated in the psychoanalytic formulation.

BOUND DISSONANCE AND SUBSEQUENT ACCOMMODATIVE REAPPRAISALS

This section is concerned with the effects of bound dissonance on appraisals and reappraisals during which elements of the portion of the identity structure containing the bound dissonance become activated. Such effects, as propounded in Chapter 7, may be the over- or under-accommodative reappraisal of a referent evaluation or the over- or under-assimilation of an element in the appraisal plane (e.g. a newly encountered event). The "TUC-government-voluntary incomes policy" example will illustrate the analysis of the interaction between the pressures deriving from appraisal of an environmental situation and those deriving from the internal state of bound dissonance.

The modal appraisal of the original "newsbroadcast" is summarised at the beginning of the chapter in Table 10.1. It is again summarised here in terms of the "context attitudes" towards the three entities ("attitude objects") brought together during the appraisal. Each consonant element (projected evaluation compatible with the referent) is prefixed thus:- c: ( ) and each dissonant element (projected evaluation incompatible with the referent) is prefixed thus:- d: ( ) (using expression 10.3). Thus:

context attitude to "the government"

$$R'(g) = \frac{c:(\, u(gg)R(g)\,) + c:(\, u(gv)R(v)\,) + c:(\, u(gt)R(t)\,)}{/u(gg)/ + /u(gv)/ + /u(gt)/} \qquad 10.19$$

(denoting: the projected evaluations in the appraisal plane of: "the government" and its identity relationship to itself as referent, "a voluntary incomes policy" and its relationship to "the government", and "Trades Union Congress" and its relationship to "the government"; all these being consonant with respect to the referent evaluation of "the government" - see Table 10.1);

context attitude to "a voluntary incomes policy"

$$R'(v) = \frac{c: (u(vv)R(v)) + c:(u(vg)R(g)) + d:(u(vt)R(t))}{/u(vv)/ + /u(vg)/ + /u(vt)/} \qquad 10.20$$

(denoting: the projected evaluations in the appraisal plane of: "a voluntary incomes policy" and its identity relationship to itself as referent, "the government" and its association with the referent, and "Trades Union Congress" and its dissociation from the referent; the latter being dissonant with respect to the referent evaluation of "a voluntary incomes policy", the former two consonant);

context attitude to "Trades Union Congress"

$$R'(t) = \frac{c:(u(tt)R(t)) + d:(u(tv)R(v)) + c:(u(tg)R(g))}{/u(tt)/ + /u(tv)/ + /u(tg)/} \qquad 10.21$$

(denoting the projected evaluations in the appraisal plane of: "TUC" and its identity relationship to itself as referent, "a voluntary incomes policy" and its dissociation from the referent, and "the government" and its association with the referent; consonant and dissonant elements with respect to the referent evaluation of "TUC"

are indicated). It is assumed that any distortion that might have occurred during appraisal has been taken into account by expressions 10.19, 10.20 and 10.21. With respect to each entity, the "attitude adjustments" due to the contextual configurations are given by (see expression 10.4):

$R'(g) - R(g)$, towards "the government";

$R'(v) - R(v)$, towards "a voluntary incomes policy";

$R'(t) - R(t)$, towards the "TUC".

A dissonant element with respect to a referent evaluation denotes an ambivalent attitude, hence the context attitudes towards "a voluntary incomes policy" (10.20) and towards "TUC" (10.21) contain ambivalences.

The magnitude of aroused dissonance with respect to the referent "a voluntary incomes policy" is given by inserting the consonant and dissonant elements from 10.20 into the general expression for modal dissonance (10.18), i.e.

$$D(v) = G(v)\, r(v)\, \frac{/u(vt)R(t)/}{/u(vv)R(v)/ + /u(vg)R(g)/} \qquad 10.22$$

where $G(v)$ represents the degree of ego-involvement in "a voluntary incomes policy" and $r(v)$ represents the perceived relevance of "a voluntary incomes policy" in the context of the appraisal.

Similarly, the aroused modal dissonance with respect to the referent "TUC" is obtained by inserting the consonant and dissonant elements from 10.21 into expression 10.18, i.e.

$$D(t) = G(t)\, r(t) \frac{/u(tv)R(v)/}{/u(tt)R(t)/ + /u(tg)R(g)/} \qquad 10.23$$

where G(t) represents the degree of ego-involvement in "TUC" and r(t) represents the perceived relevance of the "TUC" in the context of the appraisal.

No modal dissonance is aroused with respect to the referent "the government", since there is no dissonant element in 10.19, i.e.

$$D(g) = 0 \qquad 10.24$$

It is assumed that the referent evaluations of "the government" and "Trades Union Congress" are based on a considerable history of previous appraisals and reappraisals during which the entities have acquired firmly bound attributes, and are therefore firmly constrained against immediate accommodative reappraisal. It is also assumed that the pressure of the appraisal (deriving from the constructs against which the distal stimuli are delineated) is sufficient for the configuration of relationships in the appraisal plane to become assimilated into the identity structure. This means that the association between "the government" and "a voluntary incomes policy", the association between "the government" and the "Trades Union Congress", and the dissociation between "Trades Union Congress" and "a voluntary incomes policy" are incorporated into the modal self aspect of the identity structure, where they persist beyond the duration of the immediate appraisal. This is assimilative reappraisal or further "object differentiation" of the

three referent entity structures in question.

The assimilation of these relationships is accompanied by the binding of the aroused modal dissonance. For the portion of the identity structure containing those aspects of the referent entities brought together by the context of the appraisal, the bound dissonance is given by the summation of the dissonances with respect to the referent entities (i.e. summing 10.22, 10.23 and 10.24):

$$\text{bound:}D(g,v,t) = G(v)r(v)\frac{/u(vt)R(t)/}{/u(vv)R(v)/ + /u(vg)R(g)/} + G(t)r(t)\frac{/u(tv)R(v)/}{/u(tt)R(t)/ + /u(tg)R(g)/} \qquad 10.25$$

Here, "bound:D(g,v,t)" refers to the bound modal dissonance of the portion of the identity structure containing the assimilated relationships and those aspects of the entity structures related by them.

Since for the modal mode

$u(vt) = u(tv)$ . . . . . reciprocal dissociation

expression 10.25 may be rewritten:

$$\text{bound:}D(g,v,t) = /u(vt)/\left(\frac{G(v)r(v)/R(t)/}{/u(vv)R(v)/+/u(vg)R(g)/} + \frac{G(t)r(t)/R(v)/}{/u(tt)R(t)/+/u(tg)R(g)/}\right) \qquad 10.26$$

It can readily be seen from 10.26 that the dissociation between the "TUC" and "a voluntary incomes policy", u(vt), is the relationship responsible for the bound dissonance. This is the relationship that

contributes to the bound dissonant elements. The other relationships (u(vg) and u(tg)) contribute to bound consonant elements.

It may be noted in passing that since u(vt) is the relationship* responsible for the bound dissonance, its assimilated strength is likely to have been attenuated (i.e. under-assimilated) due to the processes operating tending to maximize psychological efficiency. The assimilation will have been the result of pressures of appraisal strong enough to counteract the resistance. There will have been no resistance, on the other hand, against the assimilation of the relationships contributing to consonant elements - the minimal pressure required to overcome threshold binding energies will have been sufficient.

The strengths of binding of the newly assimilated relationships will have depended on the pressures arising from the appraisal situation, deriving from such factors as the kind and number of arguments adduced in support of the relationships during the newsbroadcast and the general degree of ambiguity of the situation encountered. By comparison with the well and long established referent entities, the strengths of binding of these relationships are likely to be relatively weak.

Psychological efficiency with respect to the affected portion of the identity structure remains low as the dormant subexcited state

* Note that incompatible evaluations depend on the overall evaluations of referent entities as well as on relationships between them, and that the energetics of bound dissonance are ultimately due to derivative incompatibilities between self-referring affective states (i.e. modal dissonance is affective, not cognitive dissonance) (Chapter 6.)

of bound dissonance continues. Whilst the bound dissonance continues as a subexcited state there is no interference with the individual's ongoing states of awareness, i.e. with the excited states of awareness associated with the individual's actions and relationships with his environment. However, should another situation be encountered which raises the issues of the newsbroadcast again, the relevant aspects of the identity structure would become reactivated. The subexcited state of bound dissonance would also become activated and would interact with the appraisal of the new situation.

Suppose that in a new situation (e.g. a political meeting) the following point of view is argued:

"the government does not intend to support a voluntary incomes policy" (i.e. a point of view opposed to that stated by the newsbroadcast previously encountered).

For modal appraisal it is assumed that the delineation of the distal stimuli results in the following contents of the appraisal plane:

the entity:- "the government"

the entity:- "a voluntary incomes policy"

the relationship:- a "dissociation" between the two entities.

Compared with the structure of the relevant portion of the identity structure existing at the time of appraisal of the previous newsbroadcast, the present structure, which is again activated during the current appraisal, is a more elaborated one because of the

assimilation to it of the relationships delineated during the previous appraisal. Thus, the previously assimilated "association" between "the government" and "a voluntary incomes policy", which for the current appraisal features within the identity structure, becomes the referent evaluation, in the comparison mode, for the newly appraised "dissociation" between these two entities.

Clearly, the discrepancy between the referent belief about this relationship andthe present advocated point of view gives rise to discrepancy dissonance, which was the subject of the previous chapter. In that chapter, various factors contributing to the magnitude of discrepancy dissonance were discussed. For the purpose of the present analysis it is sufficient to express the expected change in evaluation (accommodative reappraisal) of the referent due to discrepancy dissonance as (see expression 9.21):

$$\text{Delta } u(gv) = a\,(\text{discrep:D}) - P \qquad 10.27$$

where "Delta u(gv)" represents the change in evaluation of the relationship between "the government" and "a voluntary incomes policy";
"discrep:D" represents the aroused discrepancy dissonance;
"a" a constant; and
"p" represents the factor of internal constraints (i.e. the strength of binding of the referent).

However, referring to the expression for bound dissonance (10.26) it is seen that the previously assimilated belief (the relationship between "the government" and "a voluntary incomes policy" - u(gv))

is one that contributes to a consonant element associated with the bound dissonance. This consonant element is u(vg)R(g) - note that reciprocity of relationship holds in the modal mode, therefore u(gv) = u(vg). Therefore, any attenuation of this belief towards the present advocated point of view, in line with the pressure for accommodative reappraisal due to discrepancy dissonance (expression 10.27), would increase the magnitude of bound dissonance and further decrease psychological efficiency.

But the processes operating to maximise psychological efficiency would tend to resist such further increases in bound dissonance and hence would tend to resist the accommodative reappraisal of the referent belief in question. Thus, expression 10.27, which refers to accommodative reappraisal in the absence of bound dissonance, would have to be modified to include the resistance to accommodative reappraisal arising when the referent contributes to a consonant element associated with bound dissonance, i.e.

$$\text{Delta } u(gv) = a\,(\text{discrep:}D) - a_m\,(\text{bound:}D(g,v,t)) - P \qquad 10.28$$

where "bound:D(g,v,t)" represents the bound modal dissonance of the portion of the identity structure containing the relationship u(gv) (expression 10.26); and where "a_m" is a constant associated with the bound modal dissonance.

By comparing expression 10.28 with 10.27, it will be noted that the introduction of the second term in 10.28 is equivalent to increasing the magnitude of P in 10.27, that is, increasing the

effect of internal resisting pressures to accommodative reappraisal. It follows from 10.28 that, for there to be any change in evaluation of the referent belief, u(gv), the magnitude of "a(discrep:D)" would have to be greater than the summation:

$a_m(\text{bound:}D(g,v,t)) + P$,

that is, the pressure for accommodative reappraisal due to the aroused discrepancy dissonance would have to be greater than the resisting internal pressures associated with the bound dissonance and the strength of binding of the referent. The pressure for re-evaluation would depend on the conditions of the present situation (e.g. the credibility of the point of view advocated depending on the authority and kind of arguments cited, the individual's confidence in the previously assimilated relationship, etc. - i.e. the factors affecting discrepancy dissonance discussed in Chapter 9). However, any change that might occur would be less than that which would occur in the absence of bound dissonance.

In other words, the effect of the point of view expressed (that the government does not intend to support a voluntary incomes policy) on the previously held opposite belief is less than it would have been if the previously held belief had not contributed to a consonant element associated with bound dissonance. The referent belief is under-accommodated. Without the resistance to the accommodation, the bound dissonance would increase substantially as the strength of

the consonant element decreased. It may, of course, even do so if the present point of view carries sufficient force. Another way of stating the above conclusion is that beliefs and expectations which contribute to consonant elements will suffer internal pressures that will resist the effects of discrepancy dissonance, if the appraisal discrepancies are in the direction of reducing the contribution to consonance associated with bound dissonance.

Itis a simple matter to show also that the converse holds, that beliefs and expectations which contribute to dissonant elements will suffer internal pressures that will assist the effects of discrepancy dissonance, if the discrepancies are in the direction of reducing the contribution to bound dissonance.

This can be seen by returning to expression 10.26 which illustrates the dependence of the magnitude of bound dissonance on the belief of dissociation (u(vt)) between the "TUC" and "a voluntary incomes policy" (i.e. the previously assimilated relationship that the TUC does not support a voluntary incomes policy). Any lessening of the degree of dissociation believed to hold between these entities would result in a decrease in bound dissonance. The processes operating to maximize psychological efficiency exert pressures tending towards such a decrease, that is, pressures for the accommodative reappraisal of the belief. In the continuing dormant subexcited state of bound dissonance these pressures are constrained.

Suppose, however, that in a new situation arguments are propounded in favour of the discrepant point of view that:

"The TUC will support a voluntary incomes policy".

The discrepancy dissonance aroused will exert a pressure for the accommodative reappraisal of the previously held belief. In addition, the subexcited state will become activated during the appraisal through its association with the referent belief, and therefore contribute an additional (internal) pressure for the accommodative reappraisal deriving from the processes maximizing psychological efficiency. This state of affairs may be represented thus:

$$\text{Delta } u(vt) = a\,(\text{discrep:D}) + a_m\,(\text{bound:D}(g,v,t)) - P \qquad 10.29$$

where "Delta u(vt)" represents the change in evaluation of the relationship between "a voluntary incomes policy" and the "TUC", dependant on the aroused discrepancy dissonance "discrep:D" and assisted by the internal pressure due to the bound dissonance "bound:D(g,v,t)". "a" and "a_m" are constants and "P" represents the factor of internal constraints due to the strength of binding of the referent.

It is readily seen that the effect of the bound dissonance is to diminish the internal constraints on the accommodative reappraisal. For a change in evaluation of the referent belief to occur, the magnitude of "a(discrep:D)" would only have to be greater than:

$P - a_m(\text{bound:}D(g,v,t))$.

Thus, the effect of the point of view expressed (that the TUC will support a voluntary incomes policy) on the referent opposite belief, is greater than it would have been if that belief had not contributed to dissonant elements associated with bound dissonance (compare expression 10.29 with 10.28 and 10.27). The referent belief is, therefore, over-accommodated. Bound dissonance is of course decreased.

The foregoing discussion of the effect of bound dissonance on the accommodative reappraisal of a referent evaluation when a discrepancy is appraised to exist between that referent evaluation and some other distal evaluation, indicates the interaction between two modes of dissonance - modal dissonance and discrepancy dissonance. The expressions for accommodative reappraisal, 10.28 and 10.29, illustrate the effect of this interaction, which in the first case results in an expected under-accommodation of a referent which contributes to consonance, and in the second an expected over-accommodation of a referent which contributes to dissonance. In Chapter 11, with the further elaboration of volitional dissonance, the interaction between the three modes of dissonance is considered. Chapter 13 describes an experiment in which predictions based on the interaction of the three modes receives good confirmation.

BOUND DISSONANCE AND SUBSEQUENT ASSIMILATIVE REAPPRAISALS

Similar arguments may be applied to processes of assimilative reappraisal and the following conclusions derived. In the presence of bound dissonance, delineated aspects of an appraised situation which would contribute to consonant elements associated with that bound dissonance (and which would thereby diminish the dissonance), will tend to be over-assimilated. Conversely, delineated aspects which would contribute to dissonant elements (and which would thereby increase the dissonance), will tend to be under-assimilated. These conclusions are derived as follows.

The establishment of a new connection in the identity structure depends on the pressure for assimilation being sufficiently great to overcome the threshold binding energy required. I.e. for assimilation:

(assim:P) greater than (binding:P) 10.30

where (assim:P) represents the pressure for assimilation, and (binding:P) represents the pressure required to overcome the threshold binding energy.

For delineated aspects contributing to consonant elements associated with bound dissonance, the pressure for assimilation may be regarded as being made up of two parts:- the pressure due to the appraisal itself (appraisal:P) and an internal pressure supporting assimilation (support:P), i.e.

(assim:P) = (appraisal:P) + (support:P) 10.31

The energetics for the appraisal pressure derive from the construct system against which the distal stimuli are delineated. The internal pressure supporting the assimilation derives from the processes operating to maximize psychological efficiency of that portion of the identity structure containing the bound dissonance. This internal pressure is, therefore, related to the emotive energetics of bound dissonance.

Substituting 10.31 into 10.30, the following conditinn for assimilation (contributing to consonant elements) is obtained:

(appraisal:P) + (support:P) greater than (binding:P) 10.32

Therefore, the pressure arising from appraisal required to establish a new connection when that connection contributes to a consonant element associated with bound dissonance, would be less than that required in the absence of bound dissonance, i.e. from 10.32.

(appraisal:P) greater than (binding:P) - (support:P) 10.33

In other words, for a given appraisal pressure, there would be a tendency for over-assimilation (i.e. over-ready acceptance) of a new connection, if that connection should contribute to consonant elements associated with bound dissonance, that is, to a decrease in bound dissonance.

In a similar fashion, the pressure for assimilation of delineated aspects contributing to dissonant elements associated with bound dissonance may be split into two parts:- the pressure due to the

appraisal itself (appraisal:P) and an internal pressure resisting assimilation (resist:P), i.e.

(assim:P) = (appraisal:P) - (resist:P) 10.34

The internal resisting pressure is again related to the emotive energetics of the bound dissonance, and is due to the processes operating to maximize psychological efficiency tending to minimise any additional increase in bound dissonance. Substituting 10.34 into 10.30 the condition for assimilation of a delineated element that would lead to an increase in bound dissonance is:

(appraisal:P) - (resist:P) greater than (binding:P) 10.35

In other words, the pressure arising from appraisal required to establish a new connection when that connection contributes a further increase in bound dissonance, would be greater than that required in the absence of bound dissonance, i.e. from 10.35

(appraisal:P) greater than (binding:P) + (resist:P) 10.36

Thus, for a given appraisal pressure, there would be a tendency for under-assimilation (i.e. under acceptance) of a new connection, if that connection should contribute to dissonant elements and further increases in bound dissonance.

"PRIMACY" AND "RECENCY" EFFECTS IN ARGUMENTATION

The effects of over-assimilation of elements contributing to consonance associated with bound dissonance, and the opposite effects of under-assimilation of elements contributing further to dissonance, give a plausible explanation of primacy and recency effects in argumentative discussions, when they are taken in conjunction with those of under-accommodation (under pressure of a discrepant point of view*) of referent evaluations that contribute to consonance and the over-accommodation (under similar pressure**) of referent evaluations that contribute to dissonance.

The literature on the "primacy" and "recency" effects (i.e. which of two arguments has the greatest influencing effect, the first or the last presented) is contradictory (McGuire, 1966). The contradictory findings are perhaps not surprising when it is seen that, using the analysis of the last two sections of this chapter, both primacy and recency effects are predicted depending on the point of view initially held by the individual before being confronted with the pro- and con-arguments. Whatever other mechanisms of learning, memory and decay may be operating, the possibilities of over- and under-assimilation, over- and under-accommodation in the presence of bound dissonance may themselves be able to explain why for some individuals a primacy effect and for others a recency effect is obtained.

* Assuming, of course, that the discrepancy is such as would decrease the consonance.

** Assuming, again, that the discrepancy is such as would decrease the dissonance.

Suppose the individual is confronted with two arguments, one opposing a particular point of view (anti-A), the second supporting that pointof view (pro-A). Following the arguments of this chapter, one sequence of events may conspire to produce a recency effect. This is to be expected when the individual's own point of view is by and large pro-A, for these reasons. First, there is the likelihood of distortion during appraisal of the relationship of the anti-A argument to the individual's own point of view (pro-A), due to the minimization of dissonance arousal. Second, the anti-A argument is likely to be under-assimilated due to pressures which resist increases in bound dissonance. In other words, the effect of the appraisal and the assimilation of the anti-A argument is likely to result in comparatively little influence. Third, the (under) assimilated anti-A argument is likely to suffer over-accommodation during the presentation of the discrepant (and bound dissonance reducing) pro-A argument, due to the interaction of bound dissonance pressures with those of discrepancy dissonance. That is, the pro-A argument will appear to have considerable influence. In all, therefore, the little influence of the first argument (anti-A) and the considerable influence of the second argument (pro-A) should give rise to a recency effect.

Similarly, it may be argued that the same order of presentation of arguments (anti-A followed by pro-A) would result in a primacy effect for an individual initially holding a point of view which is by and large anti-A. The two cases are summarised in the table below:

Table 10.5 Primacy and recency effects

	Individuals holding largely pro-A point of view:	Individuals holding largely anti-A point of view:
Argument (1) anti-A point of view.	Distortion during appraisal of the relationship of argument (1) to own point of view.	
	Under-assimilation of argument (1) i.e. little influence	Over-assimilation of argument (1) i.e. considerable influence
Argument (2) pro-A point of view	Over-accommodation of previously assimilated argument (1) towards point of view expressed in argument (2) i.e. considerable influence	Under-accommodation of previously assimilated argument (1) towards point of view expressed in argument (2) i.e. little influence
Net effect	Argument (2) greater than argument (1) i.e. RECENCY EFFECT	Argument (1) greater than argument (2) i.e. PRIMACY EFFECT

THE LOGICAL RELATIONSHIP BETWEEN THE BALANCE FORMULATION AND THE MODAL DISSONANCE FORMULATION

The parallel between the Rosenberg and Abelson balance model and the modal dissonance formulation has already been demonstrated for the two entity case. With the "government-TUC-voluntary incomes policy" example, the continuation of this parallel is readily shown. The initial state of appraisal for this example is given in Table 10.1, and the magnitude of the aroused modal dissonance is given by expressions 10.22, 10.23 and 10.24. The following three tables, 10.6, 10.7 and 10.8, give three configurations that reduce modal dissonance to zero, which might arise during immediate distortion or reappraisal. Table 10.6 illustrates the case of distorted appraisal of one relationship. Table 10.7 illustrates the accommodative reappraisal of one referent evaluation which was the locus of aroused dissonance, together with the distorted appraisal of a (different) relationship. Table 10.8 illustrates the accommodative reappraisal of the other referent evaluation which was the locus of aroused dissonance, together with the distortion of a (again different) relationship. For each of these three configurations there is no dissonance.

Table 10.6 Elimination of modal dissonance through distortion of appraisal

REFERENT EVALUATIONS		PROJECTED EVALUATIONS		
		u(gv)R(v)	(+)(+)	consonant
R(g)	(+)	u(gt)R(t)	(+)(+)	consonant
		u(gg)R(g)	(+)(+)	consonant
		u(vg)R(g)	(+)(+)	consonant
R(v)	(+)	u(vt)dist.R(t)	(+)(+)	consonant
		u(vv)R(v)	(+)(+)	consonant
		u(tg)R(g)	(+)(+)	consonant
R(t)	(+)	u(tv)dist.R(v)	(+)(+)	consonant
		u(tt)R(t)	(+)(+)	consonant

Table 10.7 Elimination of modal dissonance through accommodative reappraisal of a referent and distortion of appraisal (A)

		u(gv)R(v)	(+)(+)	consonant
R(g)	(+)	u(gt)dist.R(t) acc.	(-)(-)	consonant
		u(gg)R(g)	(+)(+)	consonant
		u(vg)R(g)	(+)(+)	consonant
R(v)	(+)	u(vt)R(t)acc.	(-)(-)	consonant
		u(vv)R(v)	(+)(+)	consonant
		u(tg)dist.R(g)	(-)(+)	consonant
R(t)acc.(-)		u(tv)R(v)	(-)(+)	consonant
		u(tt)R(t)acc.	(+)(-)	consonant

Table 10.8 Elimination of modal dissonance through accommodative reappraisal of a referent and distortion of appraisal (B)

REFERENT EVALUATIONS		PROJECTED EVALUATIONS		
		u(gv)dist.R(v)acc.	(-)(+)	consonant
R(g)	(+)	u(gt)R(t)	(+)(+)	consonant
		u(gg)R(g)	(+)(+)	consonant
		u(vg)dist.R(g)	(-)(+)	consonant
R(v)acc.	(-)	u(vt)R(t)	(-)(+)	consonant
		u(vv)R(v)acc.	(+)(-)	consonant
		u(tg)R(g)	(+)(+)	consonant
R(t)	(+)	u(tv)R(v)acc.	(-)(-)	consonant
		u(tt)R(t)	(+)(+)	consonant

The equivalence between the elimination of dissonance through the changes shown in the three tables and the achievement of balance, is seen by considering the development of the "bands" of the balance formulation corresponding to Tables 10.6, 10.7 and 10.8. The present notation representing referent evaluations of entities (e.g. R(g)) and relationships between entities (e.g. u(gv)) will be used, but the illustrative tables will be labelled with Rosenberg and Abelson's (1960) terminology of "concepts" and "relations". "Concepts" may have affect signs +, - ; "relations" may be "p" or "n" (i.e. positive or negative). Thus the logical relationship between the two approaches is emphasized. It should be remembered that the dissonance notation refers to quantitative measures, but for the purpose of the tables the nature of the evaluations and relationships is indicated by "+" for "favourable evaluation" and

"associative relationship", and by "-" for "unfavourable evaluation" and "dissociative relationship".

The balance formulation of the original state of affairs corresponding to Table 10.1 is given in Table 10.9. The three "bands" (i.e. concept-relation-concept) are illustrated as they are "balanced" or "unbalanced" according to the criteria of the balance model. Tables 10.10, 10.11 and 10.12 illustrate the changes in the "bands" for the three states of balance equivalent to the corresponding elimination of modal dissonance illustrated in Tables 10.6, 10.7 and 10.8 respectively.

Table 10.9 (compare with Table 10.1): Initial appraisal

	CONCEPT (+ or -)	RELATION (p or n)	CONCEPT (+ or -)	
band 1	R(g) (+)	u(gt) (+)	R(t) (+)	balanced
band 2	R(g) (+)	u(gv) (+)	R(v) (+)	balanced
band 3	R(t) (+)	u(tv) (-)	R(v) (+)	imbalanced

Table 10.10 (compare with Table 10.6): one sign change to balance

band 1	R(g) (+)	u(gt) (+)	R(t) (+)	balanced
band 2	R(g) (+)	u(gv) (+)	R(v) (+)	balanced
band 3	R(t) (+)	u(tv) (+)*	R(v) (+)	balanced

Table 10.11 (compare with Table 10.7: two sign changes to balance

band 1	R(g) (+)	u(gt) (-)*	R(t) (-)*	balanced
band 2	R(g) (+)	u(gv) (+)	R(v) (+)	balanced
band 3	R(t) (-)*	u(tv) (-)	R(v) (+)	balanced

* Indicates sign change

Table 10.12 (compare with Table 10.8): two sign changes to balance

	CONCEPT (+ or -)	RELATION (p or n)	CONCEPT (+ or -)	
band 1	R(g) (+)	u(gt) (+)	R(t) (+)	balanced
band 2	R(g) (+)	u(gv) (-)*	R(v) (-)*	balanced
band 3	R(t) (+)	u(tv) (-)	R(v) (-)*	balanced

* Indicates sign change

From an inspection of the tables for the balance formulation compared with the tables for the modal dissonance formulation, it is seen that

(1) the states of balance are equivalent to the elimination of modal dissonance,

(2) the "one sign change to balance" (i.e. relation) is equivalent to the "distorted appraisal of one relationship",

(3) the "two sign changes to balance" (i.e. a concept and a relation) is equivalent to "the accommodative reappraisal of a referent evaluation of an entity and the distortion of a relationship",

(4) a single band, for example

R(g) - u(gt) - R(t),

is logically equivalent to the two projected evaluations with respect to their referents:

u(gt)R(t) with respect to the referent R(g),

and

u(tg)R(g) with respect to the referent R(t).

The equivalence between the single band and the two projected evaluations is at the basis of the logical relationship between the balance and the modal dissonance formulations. That is, the first three equivalences listed above stem from the fourth.

However, the differences between the formulations are important. With respect to point (4) above, the band R(g) - u(gt) - R(t) is only equivalent to the two projected evaluations u(gt)R(t), u(tg)R(g) because for the modal mode u(gt) = u(tg), that is, because the relationship between the one entity and the other is reciprocal in the modal mode. The balance model therefore assumes reciprocity, since it possesses no way of expressing directional relationships. As will be seen, this becomes crucially important when discussing the volitional mode of appraisal in which directional relationships are the ones delineated. The algebraic formulation for the modal mode, presented in this chapter, carries over to the volitional mode.

The balance model possesses no way of expressing the projected evaluationof an entity and its identity relationship with respect to its referent (e.g. u(gg)R(g) with respect to the referent R(g)). Thus, in the balance model there is no way of expressing the attenuation of this identity relationship, as when the delineated entity is appraised as being not in fact identical with the referent - e.g. when certain characteristics only of the entity are appraised in a particular situation with respect to the totality of characteristics of that entity making up the overall referent evaluation. In

the volitional mode, the absence of incorporating the identity relationship would mean that the directional relationship of an entity appraised as an agent acting upon itself, could not be expressed.

In the balance model, relations and concept evaluations are treated on a par as signs (+ or -) and paths towards balance are regarded solely in terms of the "number of sign changes" to balance. I.e.

"The order of preference for paths toward restoring an unbalanced structure to balance will correspond to an ordering of the paths according to the number of sign changes required, from the least to the most." (Rosenberg and Abelson, 1960, p.128).

The formulation of the arousal of modal dissonance differentiates between referent evaluations in the identity structure, and delineated entities (on to which are projected evaluations) and delineated relationships in the appraisal plane which derive from the distal stimuli. No general prediction of immediate dissonance reduction can be given without consideration being given to the constraints acting on the delineation of the distal stimuli (to do with the ambiguity of the situation being appraised, the resilience and lack of ambiguity of the constructs) or to the constraints acting on the referent evaluations.

The possibilities of immediate distortions of appraisal and immediate accommodative reappraisal of the referent evaluations has

been given extended treatment. It may be noted that in general some distortion of a relationship during appraisal will be more likely than accommodative reappraisal of referent entities, since their evaluations are likely to be based on an extended history of assimilated and firmly bound characteristics. However, if the appraised situation is totally unambiguous and the relevant constructs also unambiguous and resilient, then distortion would be very limited. It is possible that immediate accommodative reappraisal of a weakly bound referent may occur, but this is unlikely since such reappraisal would also involve the distorted appraisal of a different relationship (e.g. Tables 10.7 and 10.8). This analysis contrasts markedly with that of the balance model which would predict that, if the most preferred path (one sign change) toward balance were blocked, then the next most preferred path (two sign changes) would be followed. (This latter prediction of the balance model is tested under circumstances maximally favourable for its outcome, yet it fails to be substantiated - see Chapter 13.)

Given that possible distortion is limited and pressures for the assimilation of delineated aspects of the appraised situation contributing to dissonance are sufficient, then dissonance will become bound in the affected portion of the identity structure.

The balance model has no equivalent to the concept of bound dissonance (the dormant subexcited state of affairs corresponding to

the continuation of ambivalence within the identity structure), except what might be implied by the "stop thinking" alternative, suggested as one possibility for the individual when he comes upon a "cognitive inconsistency" in his attitude. It makes no distinction between the excited state of appraisal and concomitant awareness, and the dormant dissonance states continuing within the identity structure. Much of the present analysis of under- and over-accommodation of referents, under- and over-assimilation of delineated elements of appraised situations depends, however, on considering the interaction between aroused dissonance and bound dissonance. In addition, the balance model does not extend to considering discrepancy dissonance nor volitional dissonance (except, perhaps, for the notion of "hedonic" imbalances - see the next chapter), nor the possible interactions between the three types of dissonance which frequently militate against any sort of resolution in balance terms.

Traditional dissonance theory has been viewed as concerned with a more molar level of analysis compared with the balance model. Thus: "The more molecular element is characteristic of balance representations and the more molar element characteristic of dissonance representations. Unfortunately, we cannot use this difference to show the exact logical relationship between the theories and we cannot use it to work out the exact rules for translation from the one sort to another." (Brown, 1966, p.595)

With the present formulation it is no longer true that the balance model representation is at a more molecular level, even considering the restricted domain of modal dissonance. Apart from the differentiation between the projected evaluations of the appraisal plane and the referent evaluations of the identity structure, it has been shown that the concept of "band" is more molar than the concept of "projected evaluation", and that hidden in the molar concept of "band" is the assumption of reciprocity. In addition, the logical relationship between the balance model and modal dissonance (i.e. excluding discrepancy dissonance and volitional dissonance) has been made explicit.

Beyond these considerations, however, is the important feature of the modal dissonance formulation that quantitative estimates of modal dissonance can be ascertained, so that dissonance reduction operating in the modal mode may be empirically followed.

SUMMARY

The present chapter is devoted to the processes of appraisal and reappraisal in the modal mode. Consideration is given to the arousal of modal dissonance, to the binding of dissonance in the modal mode, and to the effects of bound dissonance on subsequent reappraisals.

An algebraic notation is developed so that both referent evaluations within the identity structure and projected evaluations in the modal appraisal plane can be formalised.

Recognition of the idiosyncratic nature of an attitude to an entity in the context of the particular situation in which it is appraised, is formalised by an algebraic expression which is defined as the "context attitude" to the entity in question. The expression for the context attitude takes into account the configuration of relationships with other evaluated entities or actions for the duration of the entity's appraisal. It is demonstrated that, when two entities only are involved, the "attitude adjustment" for the duration of the appraisal, as represented by the difference between the context attitude towards the entity and the referent evaluation of it, resembles that derived by Osgood and Tannenbaum (1955) from their congruity model. It is held that the present formulation of attitude adjustment makes explict two assumptions of the congruity model. The assumptions are that:

(a) the congruity model takes no account of the appraised strength of the association or dissociation between the entities related by an assertion,

(b) in the congruity model, the implicit assumption exists that the appraised strength of a relationship between an entity and its referent is proportional to the evaluation of that entity.

An algebraic specification is given of the magnitude of modal dissonance aroused when, during appraisal, the transactions between

the psychological matrix and the environment result in projected evaluations in the appraisal plane which are incompatible with respect to the referent evaluations within the identity structure.

If constraints allow, the consequences of the operation of processes maximizing psychological efficiency during appraisal will tend to be the immediate accommodative reappraisal of a referent evaluation towards that of the dissonant projected evaluation (i.e. dissonance reduction) or the distortion of appraisal through the attenuation of the dissonant projected evaluation (i.e. minimisation of the arousal of dissonance), or both. If, on the other hand, constraints restrict the extent to which psychological efficiency can be maximized and if, in addition, sufficient pressure derives from the process of appraisal for the assimilation of dissonant projected evaluations from the appraisal plane into the identity structure, then the dissonance aroused during appraisal will become <u>bound</u> within the identity structure.

The existence of bound modal dissonance is considered in terms of its biasing effects

(a) on the subsequent modifications of evaluations already held, in the light of new experiences (i.e. biases in accommodative reappraisals), and

(b) on the subsequent incorporation of newly appraised items of "information" (i.e. biases in assimilative reappraisals),

when these are related or become related to the bound dissonance. The expected direction of such biases is explicitly derived from the postulates concerning the processes operating to maximize psychological efficiency by making use of the algebraic expression for the magnitude of bound dissonance.

An explanation of "primacy" and "recency" effects in argumentation (i.e. which of two arguments has the greatest influence, the first or last presented), is given in terms of the biases in reappraisal associated with bound dissonance. It is predicted that either such effect may arise, depending on the initial point of view held by an individual on the issue in question and on the sequence of arguments directed at him, that is, whether the first presented argument is pro or con the individual's point of view.

Finally, the logical relationship between the notion of "imbalance" (Rosenberg and Abelson, 1960) and modal dissonance is demonstrated, though it is emphasized that major differences exist between the two formulations. One such difference is that the dissonance approach enables quantitative estimates for modal dissonance to be calculated - estimates which incorporate the factors of ego-involvement in the referents and perceived relevance of the referents in the context of appraisal. Other differences stem from the way in which the appraisal and reappraisal processes are conceptualized, a conceptualization which is fundamentally at variance with that of the balance formulation.

SECTION II: NEW THEORY

A THEORY OF APPRAISAL AND REAPPRAISAL: AN EXTENDED REFORMULATION OF DISSONANCE THEORY

CHAPTER 11 PROCESSES OF ATTITUDE CHANGE - THE VOLITIONAL MODE AND VOLITIONAL DISSONANCE

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INTRODUCTION

Appraisal and reappraisal in the volitional mode is the concern of this chapter, the last in which new theory is presented. The exposition of volitional mode appraisal contained in Chapters 6 and 7 is followed, and the algebraic notation of the previous chapter on the modal mode is used, with slight elaboration to cope with the distinguishing features between the modal and volitional modes.

The volitional mode is related to the volitional aspect of the individual's identity comprising the individual's intentions and identifications (Chapter 5). Appraisal in the volitional mode delineates the perceived effects and outcomes of actions and influences in relation to these intentions and identifications. The actions and influences may originate with the individual or with others. The pursuit by an individual of his intention in a situation which compromises his preferences and in which he has to choose between alternative courses of action is examined in Chapter 8. The present chapter examines the actions and influences of other agents.

The concept of bound dissonance, the interaction of bound dissonance with discrepancy dissonance during accommodative reappraisal, and its effect on assimilative reappraisal, have been given extended treatment for the modal mode in the previous chapter. Analogous arguments apply to bound dissonance in the volitional mode, hence the results obtained in relation to bound dissonance will be extended to include the volitional aspect of the identity structure. Attention

will be concentrated on the possible interactions between the modes of dissonance (discrepancy, modal and volitional) and certain experimental findings of other investigators will be interpreted in terms of interacting modes of appraisal and reappraisal.

VOLITIONAL APPRAISAL

The volitional appraisal pane is the loci of transactions between the volitional aspect of the individual's identity structure and the external environment. The volitional aspect of the identity structure is regarded as consisting of the individual's intentions and identifications, together with experienced effects and outcomes in relation to them. In so far that intentions and identifications are pursued by the individual, the volitional aspect denotes the future orientation of the individual's identity (i.e. the volitional self aspect of identity - Chapter 5). This is in contrast with the status quo considerations of the modal aspect of the identity structure examined in the previous chapter.

Appraisal in the volitional mode, it is argued, delineates effects and outcomes in relation to the individual's intentions and identifications, that is, it delineates the directional effects of actions appraised as being initiated by various agents that have a bearing on those intentions and identifications. The appraisal of the directional (i.e. non-reciprocal) effect of an agent acting upon or influencing some recipient entity is a major distinguishing feature

of the volitional mode, compared with the reciprocal associations and dissociations between entities of the modal mode*.

Dissonance arousal in the volitional mode is considered in essentially the same way as for the modal mode, but in attempting to specify dissonant and consonant elements in the volitional mode various problems of conceptualization are encountered. These stem mainly from the future orientation of the volitional mode and have to do with, typically, the factor of indeterminancy of outcome resulting from an appraised agent's intention or action. Where an outcome is known or is appraised as almost certain tooccur, the dissonant and consonant elements with respect to the individual's referent identification may be readily specified. However, where outcomes are uncertain, other considerations have to be taken into account.

Such considerations concern the way in which possible effects of an agent's intended action may be appraised in relation to the individual's referent identification. As well as the straightforward appraisal of an outcome which would follow from the successful

* For the volitional mode, agent A acting upon recipient B is not appraised as being equivalent to B as an agent acting upon A as recipient (unless A and B have exactly equivalent effects on each other), i.e. the directional relationship is non-reciprocal. For the modal mode, however, reciprocity holds, e.g. by virtue of A being associated with B, so is B associated with A.

pursuit of the agent's intended action, there is the possibility of appraised indirect effects which do not correspond with the agent's intended action (i.e. appraisal of "unintended effects") with respect to the identification. Such indirect effects might be appraised to follow from the agent's action in relation to some intermediary entity, which itself is appraised as having potential consequences going counter to the agent's intended action with respect to the same identification. For example, referring to the "government-TUC-voluntary incomes policy broadcast" cited before, the straightforward appraisal of the government's direct relation to the individual's identification with supporting a voluntary incomes policy, is one of an effect consonant with his identification (i.e. the government supports a voluntary incomes policy); however, the appraisal of the government's indirect relation, by way of the TUC, to the individual's identification may be one of an indirect effect which is dissonant (i.e. the government supports the TUC which intends not to support a voluntary incomes policy, hence appears to be countering its support for such a policy).

Appraisal of an indirect relation is likely to be complicated by another factor - the appraised power of an agent to manipulate an intermediary entity. This possibility concerns the appraised power of an agent to manipulate an intermediary entity such that the overall effect would correspond to the agent's appraised intended effect. In this case, the appraisal of the indirect effect is

viewed as being dependent in part on the projection of "potency for manipulation" on to the agent in question. In the example, the projection of potency on to "the government" might be such that it is appraised as having the ability to manipulate the "TUC" into giving support for "a voluntary incomes policy", an appraised indirect effect which would be consonant with respect to the individual's identification. This would be an example of an appraised intentional effect achieved through the manipulation of an intermediary.

Before the problems of conceptualisation of appraised effects and outcomes (direct or indirect) can be considered more explicitly, it is necessary to explain the algebraic notation to be used.

NOTATION: VOLITIONAL APPRAISAL

The contents of the modal appraisal plane for the newsbroadcast example are given in Table 10.1 of the previous chapter. For the volitional mode a similar table with suitable modifications may be written (Table 11.1). The modifications are as follows:-

(i) in contrast with referent evaluations in the modal mode, referent identifications (or intentions) are denoted by underlining the symbol in brackets, i.e. R(v) denotes the individual's referent identification with "a voluntary incomes policy";

(ii) appraised agents (i.e. initiators of actions or influence) are denoted by underlining the symbol for the referent evaluation of an entity, i.e. $\underline{R}(g)$ denotes the appraised agent "the government" (NB note distinction between (i) and (ii));

Table 11.1 (c.f. Table 10.1 for the modal mode)

IDENTITY STRUCTURE	VOLITIONAL APPRAISAL PLANE
referent identifications:	projected evaluations:
	$\underline{u}(gv)\ \underline{R}(v)$
$R(g)$	$\underline{u}(gt)\ \underline{R}(t)$
	$\underline{u}(gg)\ \underline{R}(g)$
	$\underline{u}(vg)\ \underline{R}(g)$
$R(v)$	$\underline{u}(vt)\underline{R}(t)$
	$\underline{u}(vv)\ \underline{R}(v)$
	$\underline{u}(tg)\ \underline{R}(g)$
$R(t)$	$\underline{u}(tv)\ \underline{R}(v)$
	$\underline{u}(tt)\ \underline{R}(t)$

(iii) appraised <u>directional</u> relationships are denoted by underlining the symbol for the relationship between one entity and another, i.e. <u>u</u>(vg) denotes the directional relationship between "the government" and the recipient "a voluntary incomes policy" (NB the convention for writing the relationship - the symbol for the referent identification preceding the symbol for the agent - is in line with the convention for the modal mode).

Table 11.1 does not represent the actual contents of the volitional appraisal plane, but instead the <u>possible</u> contents derived from the projected evaluations in the modal appraisal plane. Thus, each of the referent evaluations of the modal identity structure has been transformed into a referent identification; each of the projected evaluations of the modal appraisal plane has been transformed into an agent acting upon a recipient (an identity evaluation in the modal mode becomes transformed into an agent acting upon itself as recipient, i.e. <u>u</u>(gg)<u>R</u>(g) refers to the agent "the government" acting upon itself as recipient). Which of these actually exist for the individual during his appraisal of the newsbroadcast will be a function of the distal stimuli and of the construct system against which they are appraised.

The ensuing discussion will be easier to follow if the algebraic statements of the projected evaluations in the volitional mode are transposed to read from left to right instead of from right to left. That is, u(vg)R(g) will be transposed thus:- R(g)u(gv)', so that the statement may be read from left to right - the agent "the government" R(g) is appraised as acting upon (or influencing) "a voluntary incomes policy" u(gv)'. ( )' indicates the transposition of the directional relationship, thus u(gv)' is not the same as u(gv), but is the same as u(vg), which is read from right to left. (NB. This kind of transposition is done solely for convenience - the arguments would be identical without it, but the readingof the algebraic expressions from right to left would become tedious.)

It will be assumed that the appraisal by the individual of the newsbroadcast is straightforward, so that it may be represented in the following way:

(1) "the government intends to promote a voluntary incomes policy" - R(g)u(gv)';

(2) "the government intends to raise the bargaining status of the TUC" - R(g)u(gt)';

(3) "the TUC does not intend to support a voluntary incomes policy" - R(t)u(tv)'.

The notation used may, in general terms, be read as follows:

$\underline{R}(a_1)$ represents the agent a_1;

$\underline{u}(a_1a_2)'$ represents the directional relationship between the agent a_1 and the recipient a_2;

$\underline{R}(a_1)\underline{u}(a_1a_2)'$ represents the operation of the agent a_1 on the directional relationship between itself and the recipient a_2, and represents the appraised effect or outcome of its intended action with respect to a_2.

Hence $\underline{R}(g)\underline{u}(gv)'$ represents the appraised effect of the government's intended action with respect to a voluntary incomes policy.

The statements (1), (2) and (3) above are assumed to represent the actual appraisal in the volitional mode, hence it becomes clear that, of the possible projected evaluations given in Table 11.1, several are superfluous. The following indicate the (transposed) projected evaluations that remain in the volitional appraisal plane:

<u>with respect to the recipient "the government"</u>

$\underline{R}(v)\underline{u}(vg)' = 0$,

i.e. a voluntary incomes policy is appraised as not having an effect on the government;

$\underline{R}(t)\underline{u}(tg)' = 0$,

i.e. the TUC is appraised as not acting on the government;

$\underline{R}(g)\underline{u}(gg)' = 0$

i.e. the government is apprabed as not acting upon itself.

with respect to the recipient "a voluntary incomes policy"

$\underline{R}(g)\underline{u}(gv)'$ remains, indicating that the government is appraised as having an effect on a voluntary incomes policy; 11.1

$\underline{R}(t)\underline{u}(tv)'$ also remains, indicating that the TUC is appraised as having an effect on a voluntary incomes policy; 11.2

$\underline{R}(v)\underline{u}(vv)' = 0$

i.e. a voluntary incomes policy has no effect upon itself;

with respect to the recipient "the TUC"

$\underline{R}(g)\underline{u}(gt)'$ remains, indicating that the government is appraised as having an effect on the TUC; 11.3

$\underline{R}(v)\underline{u}(vt)' = 0$,

i.e. a voluntary incomes policy is appraised as not acting upon the TUC;

$\underline{R}(t)\underline{u}(tt)' = 0$,

i.e. the TUC is appraised as not acting upon itself.

Table 11.2 summarizes the projected evaluations corresponding to the appraisal of direct effects. It is immediately evident from the above that the reciprocity of directional relationships between agents and recipients does not normally hold, i.e. $u(a_1a_2)' \neq u(a_2a_1)'$ in general for the volitional mode.

THE SPECIFICATION OF INDIRECT EFFECTS

It has already been stated that the appraisal of possible effects and outcomes in the volitional mode create problems of conceptualisation,

because of the indeterminancy of the future orientation that frequently accompanies such appraisal. Appraisal of possible indirect effects, which are not manifest from the distal stimuli, may give rise to projected evaluations which may be dissonant or consonant with respect to the individual's referent identifications. Such possibilities are therefore indicated.

Table 11.2 Directional relationships resulting from the delineation of the distal stimuli

(NB. the contents of this table are transposed to read from left to right.)

VOLITIONAL APPRAISAL PLANE		IDENTITY STRUCTURE
projected evaluations: (appraised direct effects)		referent identifications:
$R(g)u(gv)' = u(gv)'$	(+)	
$R(t)u(tv)' = u(tv)'$	(-)	$R(v)$ (+)
$R(g)u(gt)' = u(gt)'$	(+)	no referent identification
		referent evaluations $R(g)$ and $R(t)$ both favourable

in the first place, by writing dummy expressions corresponding to

"appraised" indirect effects for each agent.

Two entities are appraised as agents in the newsbroadcast example, namely, the government and the TUC. Each could possibly have an indirect effect on the other and also on the third entity in the situation, a voluntary incomes policy*. Thus, the dummy expressions for the appraisal of possible indirect effects are written as:

for the agent "the government"

$$R(g)\ (\ u(gt)'_i + u(gv)'_i\ ) \qquad 11.4$$

where $u(gt)'_i$ and $u(gv)'_i$ represent the possible indirect directional relationships between "the government" and the recipients, "the TUC" and "a voluntary incomes policy" respectively;

for the agent "the TUC"

$$R(t)\ (\ u(tg)'_i + u(tv)'_i\ ) \qquad 11.5$$

where $u(tg)'_i$ and $u(tv)'_i$ represent the possible indirect directional relationships between "the TUC" and the recipients, "the government" and "a voluntary incomes policy" respectively.

The dummy expressions 11.4 and 11.5 may be expanded to include directional relationships with respect to some, as yet unspecified, intermediary entity which will be denoted by the symbol "x". By the insertion of an intermediary the indirect nature of these possible appraised effects is made explicit. Hence, expression 11.4 may be rewritten as:

* It is of course also possible that an agent may be appraised as having an indirect effect upon itself. In order to keep the illustrative example as simple as possible, this possibility is not included. The arguments would apply in exactly the same way for such cases.

$\underline{R}(g)\ (\ \underline{u}(gx)'\underline{u}(xt)' + \underline{u}(gx)'\underline{u}(xv)'\ )$ 11.6

where $\underline{u}(gx)'\underline{u}(xt)'$ represents the directional relationship between "the government" and the recipient "x", together with the directional relationship between "x" and the recipient "the TUC" - i.e. the possible indirect relationship between "the government" and the recipient "the TUC" by way of the intermediary "x"; similarly, for the second part of the expression which represents the possible indirect relationship between "the government" and the recipient "a voluntary incomes policy" by way of the intermediary "x" (this "x" is as yet unspecified - the intermediary may or may not exist; it is unlikely to be identical for the two indirect relationships indicated above).

Expression 11.5 may likewise be written as:

$\underline{R}(t)\ (\ \underline{u}(tx)'\underline{u}(xg)' + \underline{u}(tx)'\underline{u}(xv)'\ )$ 11.7

where the expanded expressions indicate the possible indirect relationships between the agent "the TUC" and the recipients "the government" and "a voluntary incomes policy", each by way of an unspecified intermediary.

It will shortly be seen that certain of the expressions in 11.6 and 11.7 are not supported by the delineation of the distal stimuli, and are therefore redundant.

From 11.1 and 11.3 the direct appraisal of the effects of the government's actions are given by:

$\underline{R}(g)\underline{u}(gv)' + \underline{R}(g)\underline{u}(gt)'$ 11.8

$\underline{R}(g)\underline{u}(gv)'$ represents the appraisal of the operation of the agent "the government" on the directional relationship between itself and the recipient "a voluntary incomes policy", that is, it represents the appraised effect of its intended action with respect to a "voluntary incomes policy". For the straightforward appraisal this effect is simply equivalent to the appraised directional relationship (here, support for such a policy), i.e. $\underline{u}(gv)'$. The straightforward appraisal of $\underline{R}(g)\underline{u}(gt)'$ likewise becomes $\underline{u}(gt)'$ (here, support for the TUC). Hence, expression 11.8 becomes

$\underline{u}(gv)' + \underline{u}(gt)'$ 11.9

denoting the appraised straightforward effects of the government's intentions with respect to both a voluntary incomes policy and the TUC.

In a similar fashion, the appraised direct effect of the TUC's intention with respect to a voluntary incomes policy is obtained from 11.2, i.e.

$\underline{R}(t)\underline{u}(tv)' = \underline{u}(tv)'$ 11.10

Refer to Table 11.2 in which are indicated the appraised direct effects given by expressions 11.9 and 11.10.

Expressions 11.9 and 11.10 indicate the appraised directional relationships that have been delineated from the distal stimuli. These are the only relationships that can occur in the dummy expressions, 11.6 and 11.7, for the appraised indirect relationships.

By systematically comparing these delineated directional relationships with those resulting from the possible substitutions for the intermediary entities in the dummy expressions (i.e. by substituting g, t or v for x), it will be found that only one dummy expression corresponds to a meaningful appraisal of an indirect effect. It is:

$\underline{u}(gx)'\underline{u}(xv)' = \underline{u}(gt)'\underline{u}(tv)'$ 11.11

which occurs in expression 11.6. Given the delineation of the distal stimuli as presented in the illustrative example, the remaining three dummy expressions have no meaning. They do not correspond to appraised indirect effects and are therefore redundant*.

Expression 11.6 therefore becomes:

$\underline{R}(g) (\underline{u}(gt)'\underline{u}(tv)')$ 11.12

which represents the appraisal of the operation of the agent "the government" on the indirect relationship between itself and the recipient "a voluntary incomes policy" by way of the intermediary "the TUC". (The government intends to raise the bargaining status of the TUC but the TUC does not intend to support a voluntary incomes policy.)

* For example, v may be substituted for x in the first dummy expression in 11.7 giving $\underline{u}(tx)'\underline{u}(xg)' = \underline{u}(tv)'\underline{u}(vg)'$; although the first directional relationship, $\underline{u}(tv)'$, has been delineated as the TUC's intention not to support a voluntary incomes policy, the second directional relationship, $\underline{u}(vg)'$, does not exist (it would correspond to the appraised effect that a voluntary incomes policy has on the government, if it did exist).

Possible appraised indirect effects represented by expression 11.12 may be

(1) a face value one of the government's indirect negation of support for a voluntary incomes policy through backing the TUC which does not itself support such a policy, or

(2) one of intentional manipulation of the TUC by the government in such a way that the TUC's support for a voluntary incomes policy is obtained. These may both be derived from expression 11.12 in the following way:

$$\underline{R}(g)\ (\ \underline{u}(gt)'\underline{u}(tv)'\ )$$
$$= (\underline{R}(g)\underline{u}(gt)')\ \underline{u}(tv)' + \underline{u}(gt)'\ (\underline{R}(g)\underline{u}(tv)') \qquad 11.13$$

In the above expression the appraisal of the operation of "the government" on both directional relationships is indicated. $(\underline{R}(g)\underline{u}(gt)')$ represents the direct appraisal of the effect of the government's intended action with respect to the TUC (c.f. the second part of expression 11.8) and becomes simply $\underline{u}(gt)'$ - the straightforward appraisal of the directional relationship (c.f. the second part of expression 11.9). $(\underline{R}(g)\underline{u}(tv)')$ indicates the appraisal of the operation of "the government" on the directional relationship between the TUC and a voluntary incomes policy, that is, the possible manipulation of that relationship (NB. the format of this term is different from previously encountered terms). So far, therefore, the two parts of 11.13 may be written:

$$R(g)\,(\,u(gt)'u(tv)'\,) = u(gt)'u(tv)' + u(gt)'\,(R(g)u(tv)') \qquad 11.14$$

$u(gt)'u(tv)'$: appraisal of face value indirect effect

$u(gt)'\,(R(g)u(tv)')$: appraisal of possible indirect effect due to intentional manipulation

Table 11.3 Complete volitional appraisal of possible effects and outcomes (cf. Table 11.2)

VOLITIONAL APPRAISAL PLANE projected evaluations: (appraised direct and indirect effects)	IDENTITY STRUCTURE referent identification:
$u(gv)'$ (+) consonant	
$u(tv)'$ (−) dissonant	
$u(gt)'u(tv)'$ (+)(−) dissonant (face value indirect effect)	$R(v)$ (+)
$u(gt)'(R(g)u(tv)')$ (+)(+) consonant (indirect manipulative effect)	
$u(gt)'$ (+)	no referent identification
	referent evaluations R(g) and R(t) both favourable

NB. The indirect manipulative effect is indicated as being consonant with respect to its referent identification - this depends oncertain conditions specified in the text.

Table 11.3 includes the appraised possible indirect effects, as well as the appraised direct effects, for the newsbroadcast appraised by an individual who identifies with the promotion of a voluntary incomes policy and who has favourable evaluations of both the government and the TUC. The projected evaluations (defined as the resultant evaluation of an effect or outcome, actual or potential, in the volitional appraisal plane in relation to the referent - Chapter 6) are dissonant or consonant with respect to the referent identification as indicated. Whether a projected evaluation in the volitional mode is dissonant or consonant follows from the definitions given in Chapter 6. They are: a dissonant element is a projected evaluation which is incompatible with respect to the referent (definition 6.7); a consonant element is a projected evaluation which is compatible with respect to the referent (definition 6.8).

For the modal mode, relationships are indicated as associative (+) or dissociative (-) and the strength of the relationship between two entities a_1 and a_2 is indicated by the magnitude of $u(a_1a_2)$, which can take on values between -1 and +1 (i.e. from complete dissociation to complete association). In a similar fashion, the directional relationships of the volitional mode are regarded as directional associations (i.e. $\underline{u}(a_1a_2)$':- an appraised associative, constructive or supportive relationship with a_1 an initiator and a_2 as recipient) or directional dissociations (i.e. an appraised

dissociative, destructive or nonsupportive relationship with a_1 as initiator and a_2 as recipient). The strength of the directional relationship is indicated by the magnitude of $u(a_1a_2)'$ which can also take on possible values between -1 and +1 (i.e. from complete directional dissociation to complete directional association). In Table 11.3 the directional associations are indicated by (+) and the directional dissociations by (-).

From the examination of Table 11.3, the importance of considering the appraised possible indirect effects becomes apparent, for here it is seen that, within the individual's appraisal plane, they feature as dissonant and consonant elements. They therefore determine in part the magnitude of volitional dissonance aroused and also in part the nature of that dissonance in terms of the specific elements of the distal stimuli that contribute to these particular consonant or dissonant elements. Furthermore, these appraised effects are ones which do not correspond to information actually contained in the distal stimuli, but are nevertheless derived from the distal stimuli. They are possible outcomes that are attributed to the delineated agents in the absence of information about actual (future) outcomes, and are ones which are derived from the particular configuration of directional relationships delineated from the distal stimuli.* Their importance lies in their dependency on the psychological process of appraisal under conditions of uncertainty, when

* The attribution of the indirect manipulative effect is held also to depend on the referent evaluations of the agent and the intermediary in question - see following sections of this chapter.

such attributed outcomes may prove to be unwarranted by subsequent events. In other words, they may contribute to or attenuate the magnitude of volitional dissonance aroused in a way that may have more to do with phantasy than with reality, and thereby affect the individual's behaviour and bias subsequent appraisals and reappraisals in like manner. The effects of such biases will be examined in due course.

APPRAISAL OF INDIRECT MANIPULATIVE EFFECT

In Table 11.3 the projected evaluation $\underline{u}(gt)'(\underline{R}(g)\underline{u}(tv)')$ which appears in expression 11.14, is indicated as an appraised indirect effect which is consonant with respect to the individual's identification with a voluntary incomes policy. It may be read as the appraisal of the government's action with respect to the TUC, $\underline{u}(gt)'$, together with the appraised effectiveness of the possible manipulation of the TUC's action with respect to the policy by the government, $\underline{R}(g)\underline{u}(tv)'$. In the present example the manipulation might be appraised such that the TUC is expected to conform to the government's intended action of promoting a voluntary incomes policy.

The conditions under which such possible manipulative action is appraised as being potentially effective are now examined. The term corresponding to the appraised manipulation is:

$$p(tv)' = \underline{R}(g)\underline{u}(tv)' \qquad 11.15$$

where $p(tv)'$ denotes the appraised probability of outcome of the

manipulation of the directional relationship between the TUC and the incomes policy (this probability is not delineated from the distal stimuli),

R(g) denotes the agent "the government",

u(tv)' denotes the delineated directional relationship between the TUC and the incomes policy.

11.15 may conveniently be written as

$$p(tv)' = p(g.t)p(gv)' \qquad 11.16$$

where p(g.t) denotes the appraised probability of the effective manipulation of the TUC by the government, and p(gv)' denotes the appraised probability of outcome of the directional relationship between the government and the incomes policy, u(gv)'.

Thus 11.16 reads (lefthand side) that the appraised probability of outcome of the manipulation of the directional relationship between the TUC and the incomes policy, is dependent on (righthand side) the product of the appraised probability of effective manipulation of the TUC by the government, and the appraised probability of outcome of the directional relationship between the government and the incomes policy. Thus, if either effective manipulation of the TUC by the government is appraised as unlikely (p(g.t) = 0), or the outcome of the government's support for the incomes policy is appraised as ineffectual (p(gv)' = 0), then no effective potential manipulation of the TUC's intentions with respect to the incomes policy would be appraised.

Given the limited information available in the newsbroadcast, and given the uncertainty of outcome of the intentions on the part of the appraised agents (i.e. the government and the TUC), the straightforward delineation of the distal stimuli is severely restricted when it comes to appraising the potential effect of the possible manipulation outlined above. If there existed in the distal stimuli firm information about the probability of effective manipulation (p(g.t)) and about the probability of outcome of the agent's intention (p(gv)'), then the appraised probable effect of the manipulation would present no problem. In the absence of such additional information, it is assumed that the projection of referent evaluations in the identity structure on to the agent and on to the intermediary featuring in the appraised indirect manipulative effect, would result in a projected evaluation of the effectiveness of the agent's manipulative action.

According to this point of view, the projection of the favourable evaluations of both "the government" and "the TUC" held by the individual, would result in a projected evaluation corresponding to effective action, with the implied appraisal of the TUC cooperating with a potent government in promoting a voluntary incomes policy. In this case, the favourable referent evaluation of the government may be regarded as translated into potency for action, and the favourable referent evaluation of the TUC into cooperation.

In the following discussion of the indirect manipulative term, it is assumed that some such projection of referent evaluations occurs. The aim of the discussion will be to give approximations for the projected evaluation of the possible manipulative effect, dependent on the referent evaluations and the conditions of appraisal, which can be given in terms of the existing directional relationships delineated from the distal stimuli.

CONJUNCTIVE AND DISJUNCTIVE FRAMES OF REFERENCE

In the newsbroadcast example the aim of the government and that of the individual are appraised by him as conjunctive - the government intends to promote a voluntary incomes policy and the individual identifies with such a policy. The government and the individual share the same frame of reference with respect to the incomes policy. However, it is also possible that, for another individual, the frames of reference would be disjunctive with, for example, the individual dissociating from the policy that the government intends to promote. In this case, the projection of favourable evaluations on to the government and the TUC would result in a projected evaluation of the manipulative effect (such that the possible manipulative action is discounted), which is different from that considered above in the case of conjunctive frames of reference.

Since the projection of referent evaluations results in different outcomes for the manipulative term, depending on the conjunctive or disjunctive nature of the frames of reference, it is

necessary to distinguish clearly between them. They are defined as follows:

(a) the frames of reference of an appraised agent and the self are defined as conjunctive when the agent's intention is appraised by the individual as supporting the self's intention (or identification).

(b) the frames of reference of an appraised agent and the self are defined as disjunctive when the agent's intention is appraised by the individual as opposing the self's intention (or identification).

A full exposition of the derivation of the projected evaluation of an appraised indirect manipulative effect is given for conjunctive frames of reference only, though the results for disjunctive frames of reference are also stated.

APPRAISED MANIPULATIVE EFFECTS FOR CONJUNCTIVE FRAMES OF REFERENCE

The following analysis is given in general terms, in which the agent is represented by a_1, the intermediary by a_k, and the recipient by a_2. In the newsbroadcast example, a_1 would be "the government", a_k would be "the TUC", and a_2 would be "a voluntary incomes policy".

Thus, $u(a_1 a_k)'$ represents the directional relationship between the agent and the intermediary. It is an associative directional relationship, that is, one appraised as constructive or supportive with a_1 as the initiator and a_k as the recipient*.

* If this relationship becomes appraised as dissociative, the appraisal of a possible manipulative effect is discounted.

$\underline{u}(a_1a_2)'$ represents the directional relationship between the agent a_1 and the recipient a_2, and corresponds to the appraised intention of a_1 with respect to a_2 which is <u>conjunctive</u> with the individual's identification with a_2.

$\underline{R}(a_1)$ represents the operation of the agent a_1.

$\underline{u}(a_ka_2)'$ represents the <u>delineated</u> directional relationship between the intermediary a_k and the recipient a_2 (which is <u>disjunctive</u> with the individual's identification with a_2).

$p(a_1.a_k)$ represents the appraised probability of effective manipulation of a_k by a_1.

$p(a_1a_2)'$ represents the appraised probability of outcome of the directional relationship between a_1 and a_2, or the appraised probability of success of a_1's intention with respect to a_2.

In general terms, therefore, the manipulative term in expression 11.14 is in full:

$$\underline{u}(a_1a_k)'(\underline{R}(a_1)\underline{u}(a_ka_2)') = \underline{u}(a_1a_k)'p(a_1.a_k)p(a_1a_2)' \qquad 11.17$$

(incorporating the generalised form of expressions 11.15 and 11.16)

It has been suggested that the terms $p(a_1.a_k)$ and $p(a_1a_2)'$ are dependent on the projection of the referent evaluations of the agent a_1 and the intermediary a_k. As written, the term $p(a_1.a_k)$ suggests that it is a function of both the referent evaluation of a_1 and of a_k, and the term $p(a_1a_2)'$ that it is a function only of the referent evaluation of a_1 (since a_k does not appear within the brackets, and since a_2 which does, is the recipient of a_1's action or influence).

Considering the term $p(a_1.a_k)$, it is assumed that, when the frames of reference for a_1 and the self are conjunctive, the projection of a favourable referent evaluation of a_1 manifests itself as an appraised favourable characteristic of a_1 with respect to a_k. In the context of the appraised manipulative effect, this would be the projection of the favourable characteristic of potency for effective (benevolent) action or, here, the potential effective manipulation of the intermediary a_k (i.e. a favourable evaluation of an agent becomes projected as "effectiveness" in a sense benevolent to the individual's identification, provided the conjunctive condition holds)*.

Appraised potential effective manipulation is therefore regarded as probable when the referent evaluation of the agent is favourable. This is crudely expressed by putting:

$p(a_1.a_k) = 1$ (for conjunctive frames of reference and favourable referent evaluation of agent a_1) 11.18

The value for $p(a_1.a_k)$ expressed in 11.18 is assumed to hold irrespective of the referent evaluation of the intermediary provided, however, that the referent evaluation of the agent is favourable. The circumstances are different when the referent evaluation of the agent is unfavourable.

* Conversely, when the frames of reference for the agent and the self are disjunctive, the projection of an unfavourable referent evaluation of the agent would manifest itself as the unfavourable characteristic of potency for effective (but malevolent) action with respect to the intermediary (i.e. correspondingto the appraised effectiveness of "evil intent").

The frames of reference of the agent and the self may be conjunctive (both working towards the same ends) and yet the referent evaluation of the agent may be unfavourable. In this case, the projection of the unfavourable evaluation of the agent is taken to manifest itself as a lack of potent action or ineffectualness. However, a favourable referent evaluation of the intermediary a_k can, it is suggested, manifest itself, through projection, as the favourable characteristic of cooperativeness or assistance with respect to the conjunctive aims of the agent and the individual. This would then result in an appraisal of effective manipulation as probable. On the other hand, this would not be the case for an unfavourable referent evaluation of the intermediary, which it is assumed becomes projected as "unhelpful", or lacking assistance, so that effective manipulation would be appraised as improbable. Thus:

$p(a_1.a_k) = 1$ (for conjunctive frames of reference and favourable referent evaluation of intermediary a_k) 11.19

$p(a_1.a_k) = 0$ (for conjunctive frames of reference, but unfavourable referent evaluations of both agent a_1 and intermediary a_k) 11.20

The results 11.18, 11.19 and 11.20 are conveniently summarised, according to the referent evaluations of the agent a_1 and the intermediary a_k, in Table 11.4.

Table 11.4 Appraised probability of effective manipulation: $p(a_1.a_k)$ for conjunctive frames of reference

		referent evaluation of agent a_1: favourable (+)	unfavourable (-)
referent evaluation of intermediary a_k':	favourable (+)	1	1
	unfavourable (-)	1	0

(1 indicates probable, 0 indicates improbable)

(it should be remembered that this table refers to appraisal in circumstances of uncertainty with regard to actual (future) outcomes. If the circumstances were different such that $\underline{u}(a_k a_2)'$ would be known for certain to be a directional dissociation, then clearly the manipulative term could not exist in appraisal, i.e. $p(a_1.a_k)$ would be zero.)

The way $p(a_1.a_k)$, the appraised probability of effective manipulation of a_k by a_1, depends on the referent evaluations of a_1 and a_k has been considered. It now remains to consider the term $p(a_1 a_2)'$, the appraised probability of outcome of the directional relationship between a_1 and a_2, and the remaining term in expression 11.17. The discussion is still within the context of conjunctive

frames of reference. Two cases are considered: the first, when the delineated directional relationship $\underline{u}(a_1a_2)'$ (the appraised intention of the agent a_1 with respect to the recipient a_2) is appraised with uncertainty as to outcome; the second, when $\underline{u}(a_1a_2)'$ is appraised without such uncertainty. (In the newsbroadcast example as stated, uncertainty exists about the outcomes of the government's intention to promote a voluntary incomes policy. However, it may be that, at a later stage, greater certainty will exist when, for example, another statement implies that the government is successfully implementing the policy.)

(1) Appraised outcome of $\underline{u}(a_1a_2)'$ basically uncertain (i.e. relationship unconfirmed)

As before, the projection of a favourable referent evaluation of the agent a_1 is regarded as being translated into the favourable characteristic of "effectiveness". In this case, it would follow that the greater the appraised strength of the (favourable) agent's conjunctive directional relationship with respect to the recipient $\underline{u}(a_1a_2)'$, the greater would be the appraised probability of success of the agent's outcome $p(a_1a_2)'$. In other words, to a good approximation, $p(a_1a_2)'$ has the value of the corresponding delineated directional relationship, i.e.

$$p(a_1a_2)' = \underline{u}(a_1a_2)' \quad \text{(for conjunctive frames of reference and favourable referent evaluation of agent } a_1\text{)} \qquad 11.21$$

In contrast, and also as before, the projection of an unfavourable referent evaluation of a_1 is regarded as being translated into the unfavourable characteristic of "ineffectualness", in which case the appraised probability of success of outcome is discounted. Hence

$p(a_1a_2)' = 0$ (for conjunctive frames of reference and unfavourable referent evaluation of agent a_1) 11.22

(2) Appraised outcome of $\underline{u}(a_1a_2)'$ relatively certain (i.e. relationship confirmed)

In the case of an appraised outcome $\underline{u}(a_1a_2)'$ being relatively certain, the referent evaluation of the agent becomes immaterial, and the appraised probability of outcome is given directly by the delineated directional relationship between the agent and the recipient. That is:

$p(a_1a_2)' = \underline{u}(a_1a_2)'$ (appraised outcome relatively certain) 11.23

It will be noted that $p(a_1a_2)'$ does not depend on the referent evaluation of the intermediary a_k, though the appraised probability of effective manipulation $p(a_1.a_k)$ does. For convenience, however, Tables 11.5 and 11.6 express the values for $p(a_1a_2)'$ for the same matrix of referent evaluations of both agent and intermediary as given in Table 11.4. This is done so that the product $p(a_1.a_k)p(a_1a_2)'$ may bereadily ascertained by referring to the pairs of Tables, 11.4 and 11.5 for $\underline{u}(a_1a_2)'$ "uncertain", or 11.4 and 11.6 for $\underline{u}(a_1a_2)'$ "certain". (Table 11.5 summarises the results 11.21 and 11.22; Table 11.6 summarises the result 11.23)

Tables 11.5 and 11.6: Appraised probability of outcome of the directional relationship between a_1 and a_2: $p(a_1a_2)'$ for conjunctive frames of reference

Table 11.5: Appraised outcome of $\underline{u}(a_1a_2)'$ basically uncertain

		referent evaluation of agent a_1: favourable (+)	unfavourable (−)
referent evaluation of intermediary a_k:	favourable (+)	$\underline{u}(a_1a_2)'$	0
	unfavourable (−)	$\underline{u}(a_1a_2)'$	0

Table 11.6: Appraised outcome of $\underline{u}(a_1a_2)'$ relatively certain

		referent evaluation of agent a_1: favourable (+)	unfavourable (−)
referent evaluation of intermediary a_k:	favourable (+)	$\underline{u}(a_1a_2)'$	$\underline{u}(a_1a_2)'$
	unfavourable (−)	$\underline{u}(a_1a_2)'$	$u(a_1a_2)'$

$\underline{u}(a_1a_2)'$ represents the directional relationship between the agent a_1 and the recipient a_2, which is conjunctive with respect to the individual's identification with or dissociation from a_2. Should $\underline{u}(a_1a_2)'$ be appraised as disjunctive, though conjunctive in intent, the appraised probability of intended outcome $p(a_1a_2)'$ would, of course, be zero whatever the referent evaluation of the agent a_1.

The following, therefore, are the results of the appraised probability of effective manipulation of a_k's action with respect to the recipient a_2 by the agent a_1, according to the referent evaluations of the agent and the intermediary, and according to the conditions of appraisal of the conjunctive directional relationship between the agent and the recipient:

$\underline{R}(a_1)\underline{u}(a_k a_2)' = p(a_1 \cdot a_k)p(a_1 a_2)'$ (see expression 11.17)

(1) Delineated directional relationship $\underline{u}(a_1 a_2)'$ conjunctive but "uncertain" (from Tables 11.4 and 11.5)

$p(a_1 \cdot a_k)p(a_1 a_2)' = \underline{u}(a_1 a_2)'$ (for referent evaluation of agent a_1 favourable, irrespective of the referent evaluation of the intermediary a_k) 11.24

$= 0$ (for referent evaluation of agent a_1 unfavourable, irrespective of the referent evaluation of the intermediary a_k) 11.25

(2) Delineated directional relationship $\underline{u}(a_1 a_2)'$ conjunctive and "certain" (from Tables 11.4 and 11.6)

$p(a_1 \cdot a_k)p(a_1 a_2)' = \underline{u}(a_1 a_2)'$ (for favourable referent evaluations of either the agent a_1, or the intermediary a_k, or of both) 11.26

$= 0$ (for unfavourable referent evaluations of both the agent and the intermediary) 11.27

(3) Delineated directional relationship $\underline{u}(a_1a_2)'$ disjunctive though conjunctive in intent

$p(a_1 \cdot a_k)p(a_1a_2)' = 0$ (whatever the evaluations of the agent or the intermediary) 11.28

Returning to expression 11.17, it is seen that the appraised indirect manipulative effect is given by:

$$\underline{u}(a_1a_k)'(\underline{R}(a_1)\underline{u}(a_ka_2)' = \underline{u}(a_1a_k)'u(a_1a_2)' \quad \text{or} \quad 0 \qquad 11.29$$

depending on the conditions given in 11.24 to 11.28. Hence the indirect manipulative effect is expressed in terms of the delineated distal stimuli of the appraisal situation. In addition, the following conclusion is drawn. When an action (or a line of influence) initiated by an agent and directed towards a certain recipient, is appraised as being conjunctive with respect to the individual's identification or intention, the projected evaluation, if it exists, of a possible indirect manipulative effect on the part of the agent and involving an intermediary, will be consonant with respect to the referent identification or intention. This is seen in the result 11.29

in which $\underline{u}(a_1a_k)'$ is the directional association between the agent a_1 and the intermediary a_k, and $\underline{u}(a_1a_2)'$ is the conjunctive directional relationship between the agent a_1 and the recipient a_2.

APPRAISED MANIPULATIVE EFFECTS FOR DISJUNCTIVE FRAMES OF REFERENCE

Tables 11.7, 11.8 and 11.9 summarize the corresponding values for appraised probability of effective manipulation of an intermediary by an agent, and the appraised probability of outcome of the directional relationship between the agent and the recipient, when the frames of reference of the agent and the self are appraised as disjunctive. The appraised indirect manipulative effect is given by the term:

$\underline{u}(a_1a_k)'p(a_1.a_k)p(a_1a_2)'$.

The disjunctiveness of the frames of reference stems from the directional dissociation $\underline{u}(a_1a_2)'$ (an appraised destructive or nonsupportive relationship with a_1 as initiator and a_2 as recipient) with respect to the individual's identification with the recipient a_2*.

* Or directional association, when the individual dissociates from the recipient.

Table 11.7: Appraised probability of effective manipulation: $p(a_1.a_k)$, for disjunctive frames of reference

		referent evaluation of agent a_1: favourable (+)	referent evaluation of agent a_1: unfavourable (-)
referent evaluation of intermediary a_k:	favourable (+)	0	1
	unfavourable (-)	1	1

(1 indicates probable, 0 indicates improbable)

Tables 11.8 and 11.9: Appraised probability of outcome of the directional relationship between a_1 and a_2: $p(a_1a_2)'$, for disjunctive frames of reference

Table 11.8: Appraised outcome of $u(a_1a_2)'$ basically uncertain

		referent evaluation of agent a_1: favourable (+)	referent evaluation of agent a_1: unfavourable (-)
referent evaluation of intermediary a_k:	favourable (+)	0	$u(a_1a_2)'$
	unfavourable (-)	0	$u(a_1a_2)'$

Table 11.9: Appraised outcome of $\underline{u}(a_1a_2)'$ relatively certain

		referent evaluation of agent a_1: favourable (+)	referent evaluation of agent a_1: unfavourable (-)
referent intermediary a_k:	favourable (+)	$\underline{u}(a_1a_2)'$	$\underline{u}(a_1a_2)'$
	unfavourable (-)	$\underline{u}(a_1a_2)'$	$\underline{u}(a_1a_2)'$

$\underline{u}(a_1a_2)'$ represents the directional relationship between the agent a_1 and the recipient a_2, which is disjunctive with respect to the individual's identification with, or dissociation from, a_2.

From the Tables 11.7, 11.8 and 11.9 the following results are obtained.

(1) Delineated directional relationship $\underline{u}(a_1a_2)'$ disjunctive but "uncertain" (from Tables 11.7 and 11.8)

$p(a_1.a_k)p(a_1a_2)' = \underline{u}(a_1a_2)'$ (for referent evaluation of agent a_1 unfavourable, irrespective of the referent evaluation of intermediary a_k) 11.30

$= 0$ (for referent evaluation of agent a_1 favourable, irrespective of the referent evaluation of the intermediary a_k) 11.31

(2) Delineated directional relationship $\underline{u}(a_1a_2)'$ disjunctive but "certain" (from Tables 11.7 and 11.9)

$p(a_1.a_k)p(a_1a_2)' = \underline{u}(a_1a_2)'$ (for unfavourable referent evaluations of either the agent a_1 or the intermediary a_k, or of both) 11.32

$= 0$ (for favourable referent evaluations of both the agent and the intermediary) 11.33

The appraised indirect manipulative effect is given by:

$\underline{u}(a_1a_k)'(\underline{R}(a_1)\underline{u}(a_ka_2)') = \underline{u}(a_1a_k)'\underline{u}(a_1a_2)'$ or 0 11.34

from expression 11.17, according to the conditions given above (11.30 to 11.33). Such a projective evaluation of an indirect manipulative effect, when it exists, in the case of disjunctive frames of reference between the agent and the individual, will be dissonant with respect to the referent identification or intention. This follows from expression 11.34 in which $\underline{u}(a_1a_k)'$ is the directional association between the agent and the intermediary, and $\underline{u}(a_1a_2)'$ is the disjunctive directional relationship between the agent a_1 and the recipient a_2.

FACE VALUE AND MANIPULATIVE INDIRECT EFFECTS

Returning now to the newsbroadcast example, the preceeding analysis provides a specification of the conditions of appraisal for the attribution to the government of a potentially effective manipulation of the Trades Union Congress in respect of the government's appraised intention to promote a voluntary incomes policy.

This manipulative item is one of two appraised possible indirect effects that may be derived from the delineated distal stimuli and which may therefore coexist in the volitional appraisal plane. These appraised indirect effects have previously been given as:

(1) a face value one of the government's indirect negation of support for a voluntary incomes policy through backing the TUC, which does not itself support such a policy, and

(2) one of intentional manipulation of the TUC by the government in such a way that the TUC's support for a voluntary incomes policy is obtained.

These are expressed by expression 11.14, i.e.

$$\underline{R}(g)(\underline{u}(gt)'\underline{u}(tv)') = \underline{u}(gt)'\underline{u}(tv)' + \underline{u}(gt)'(\underline{R}(g)\underline{u}(tv)')$$

appraisal of face value indirect effect — appraisal of possible indirect effect due to intentional manipulation

The appraisal of the face value indirect effect is already given in terms of the delineated distal stimuli, that is, $\underline{u}(gt)'$ represents, in the appraisal plane, the government's support for the TUC and $\underline{u}(tv)'$ represents the TUC's rejection of a voluntary incomes policy - the face value indirect effect amounts to an attributed dissonant effect.

From the analysis of the previous sections, the appraisal of intentional manipulation can also be given in terms of the delineated distal stimuli, such that $\underline{R}(g)\underline{u}(tv)'$ (which is given by $p(g.t)p(gv)'$) may be approximated to $\underline{u}(gv)'$ or zero, according to the conditions (11.24 to 11.28) outlined above for conjunctive frames of reference (the government's intention to support a voluntary incomes policy being conjunctive with the individual's identification with that policy). In other words, the appraisal of a possible indirect effect

due to intentional manipulation is approximated to:

$\underline{u}(gt)'\underline{u}(gv)'$

when conditions are such that it is appraised as potentially effective, or zero when these conditions do not obtain. In terms of the delineated distal stimuli, $\underline{u}(gt)'$ again represents the government's appraised support for the TUC and $\underline{u}(gv)'$ represents the government's appraised promotion of a voluntary incomes policy - the appraised manipulative effect, when it exists, amounts to an attributed consonant effect.

Thus, the following is the full appraisal, in terms of the delineated distal stimuli, of the operation of the agent "the government" on the indirect relationship between itself and the recipient "a voluntary incomes policy" by way of the intermediary "the TUC":

$$\underline{R}(g)(\underline{u}(gt)'u(tv)') = \underline{u}(gt)'\underline{u}(tv)' + \underline{u}(gt)'(\underline{R}(g)\underline{u}(tv)')$$

$$= \underline{u}(gt)'\underline{u}(tv)' + \underline{u}(gt)'p(g.t)p(gv)'$$

$$= \underline{u}(gt)'\underline{u}(tv)' + \underline{u}(gt)'\underline{u}(gv)' \text{ or } \underline{\text{zero}}$$

dissonant face value indirect effect — consonant or absent manipulative indirect effect

where the latter term depends on the conditions given in 11.24 to 11.28.

The full appraisal may therefore include two projected evaluations that are dependent on the attribution of indirect effects as possible outcomes of an agent's action or influence. Such projected

evaluations would be in addition to those which correspond to the straightforward and direct delineation of the distal stimuli. Like the others, they may be dissonant or consonant with respect to the individual's referent identification, and therefore contribute to the magnitude of dissonance aroused in the volitional mode.

Between the two types of attributed indirect effects exists an important distinction. On the one hand, the attribution of a face value indirect effect corresponds merely to an assessment of possible "unintended effects". Thus, though the government does not intend to undermine its promotion of an incomes policy, its support for the TUC, a body which rejects that policy, is assessed as possibly having as an indirect effect the negation of its prime objective. On the other hand, the attribution of a manipulative indirect effect ascribes to the agent (here, the government) the power to manipulate some intermediary (the TUC) for what are appraised to be the agent's own ends (promotion of an incomes policy). This latter attribution is, in contrast to the former, an assessment of possible "intentional effects" that might be the result of the initiation by an agent of certain actions which affect what becomes, in effect, designated as an intermediary in relation to the agent's prime objective.

It may be noted incidentally that both types of attributed indirect effects can coexist in the volitional appraisal plane. That this would necessarily amount to a contradiction does not follow, since both indirect effects would be appraised as <u>possible</u> outcomes

rather than actualities. Which one might predominate seems likely to depend on the perceived potency of the agent's manipulative power.

A distinctive feature of appraisal in the volitional mode is that it appears to give a psychological explanation of animism. It has been seen that it is as a general psychological process that the attribution of an indirect manipulative effect has been analysed. According to the analysis given in the previous sections, the only general condition of appraisal that has to be fulfilled for its occurrence, is that the delineation of the distal stimuli results in a certain configuration of relationships of the type in which an agent is appraised as being concerned with (or affecting) a recipient (i.e. an intermediary), which is in turn appraised as being concerned with some other entity, one which is appraised as also being a recipient of the agent's attentions.

It may therefore be concluded that, unless the contrary is known to the individual when confronted with an agent, the consequence of the psychological process of appraisal under the above general condition is the attribution to that agent of the power of manipulative action or influence. In other words, given a certain general condition of appraisal, any agent may be ascribed "intelligence" (i.e. the power to manipulate other entities in accordance with its own "intention") which is qualified only if the individual appraising the situation possesses knowledge to the contrary or if his reason dictates otherwise. Thus, it would appear that such a process of appraisal which

can result in the attribution of manipulative powers to any agent, provides an explanation for the widespread preponderance of animism to be found particularly in the child's thought (corresponding to the lack of the experience that would tend to qualify animism) and in primitive mythologies (corresponding to the lack of sophisticated knowledge in the cultures in which they developed).

Psychologically, therefore, the distinction between the attributed face value effect and the attributed manipulative effect, relates to the different perceived characteristics of the agent initiating the action or influence. In the attribution of a face value indirect effect, the agent is designated as affecting some other entity by way of an intermediary, without intentional action or influence. The appraisal is that of an agent acting blindly, without "intelligence". By contrast, in the attribution of a manipulative indirect effect, the agent is ascribed the power of "intelligent" action (i.e. frequently animism) such that the manipulation would conform with the agent's "intention". Inanimate entities (e.g. the sun, the wind, the rain, the sea) or artificial constructions (e.g. machinery) that are familiar and "known" are usually restricted in their appraisal to the class of "blind" agents (i.e. restricted to face value appraisal). However, many entities that do not of themselves possess intelligence, such as corporate bodies (e.g. the government, the TUC, a particular industry, a board of directors) or

salient groups (e.g. the Communists, the Jews, the Negroes) or certain inanimate objects (e.g. computers) are often extended in their appraisal by various individuals to the class of "intelligent" agents (i.e. extended to appraisal of manipulative effects). Naturally, the self and other persons are frequently included in the class of "intelligent" agents.

As projected evaluations in the appraisal plane, these attributed indirect effects will have important consequences for the individual's behaviour and his future appraisals and reappraisals. Thus, for example, when the "intention" of the agent and the self's identification are appraised as conjunctive, the attribution of a manipulative effect may result in a consonant projected evaluation that turns out to be unwarranted by subsequent events. That is, the attribution results in a consonant effect that has more to do with "wishful thinking" than with reality. On the other hand, if the frames of reference of the agent and the self are appraised as disjunctive, the corresponding attributed effect would be dissonant with respect to the individual's identification, and would therefore contribute to the arousal of volitional dissonance. Again, this attribution may be completely unwarranted, yet should the individual be highly ego-involved in his identification, he may take what might be drastic action to eliminate that dissonance.

VOLITIONAL DISSONANCE

In the case of volitional appraisal, the projected evaluations of actual or possible effects and outcomes may be compatible or incompatible (i.e. consonant or dissonant) with respect to a referent identification or intention. Volitional dissonance is aroused when there exist projected evaluations in the volitional appraisal plane that are dissonant. As with modal dissonance, the disturbance to the identity structure is essentially emotive in nature, with the energetics for the disturbance deriving from the affective incompatibility between the dissonant projected evaluations and the evaluation of the referent identification (or dissociation) or intention.

The magnitude of volitional dissonance depends (among other factors) on the magnitudes ofthe dissonant and consonant elements resulting during appraisal. These elements have been considered in terms of delineated directional relationships, but not in terms of the perceived relevance in the context of the appraised situation of the agents initiating the relationships with the recipients. However, it is clear that the greater the perceived relevance of the agent and its action, the more intense would be the projected evaluation of the directional relationship by the agent. Hence, the intensity of a projected evaluation is considered to be dependent on the perceived relevance of the agent appraised as initiating the action or influence.

For the newsbroadcast example, the magnitudes of the various projected evaluations are given in Table 11.10, as they also depend on

the perceived relevance of the agents. The dissonant or consonant nature of the elements is also indicated.

The magnitude of volitional dissonance aroused is again given by hypothesis 6.10, i.e. it depends on:

> a direct relation to the degree of ego-involvement in the referent; a direct relation to the perceived relevance of the referent in the context of the appraisal; a direct relation to the number and strength of dissonant elements with respect to the referent;
>
> an inverse relation to the number and strength of consonant elements with respect to the referent.

Table 11.10: Complete volitional appraisal of effects and outcomes giving the magnitudes of the dissonant and consonant elements as they depend also on the perceived relevance of the agents appraised as initiating actions or lines of influence (c.f. Table 11.3)

VOLITIONAL APPRAISAL PLANE projected evaluations:		IDENTITY STRUCTURE referent identifications:
$r(g)\underline{u}(gv)'$	(+) consonant	
$r(t)\underline{u}(tv)'$	(−) dissonant	
$r(g)\underline{u}(gt)'\underline{u}(tv)'$	(+)(−) dissonant	R(v)
$r(g)\underline{u}(gt)'\underline{u}(gv)'$	(+)(+) consonant*	
$r(g)\underline{u}(gt)'$	(+)	no referent identification
		referent evaluations R(g) and R(t) both favourable.

* from $r(g)\underline{u}(gt)'(\underline{R}(g)\underline{u}(tv)')$ which is approximated to $r(g)\underline{u}(gt)'\underline{u}(gv)'$ or zero depending on the conditions of appraisal and the referent evaluations of the government R(g) and the TUC R(t) - see text and results 11.24 to 11.29.

The magnitude of the perceived relevance of an agent "r(a)" ranges from zero (no relevance) to unity (complete relevance).

The magnitude of a directional relationship $u(a_1a_2)'$ ranges from +1 (directional association) to -1 (directional dissociation).

The magnitude of volitional dissonance with respect to the individual's identification with "a voluntary incomes policy" is, therefore, from the contents of Table 11.10:

$$D(\underline{v}) = G(v)r(v)\ \frac{r(t)/\underline{u}(tv)'/ + r(g)/\underline{u}(gt)'\underline{u}(tv)'/}{r(g)/\underline{u}(gv)'/ + r(g)/\underline{u}(gt)'\underline{u}(gv)'/} \qquad 11.35$$

where G(v) denotes the degree of ego-involvement in "a voluntary incomes policy" and r(v) the perceived relevance of the referent identification in the context of the appraised situation. This expression corresponds to the full appraisal and indicates the way in which both the appraised direct effects and the attributed indirect effects (face value and manipulative ones) contribute to the magnitude of volitional dissonance. Expression 11.35 may be simplified to:

$$D(\underline{v}) = G(v)r(v)\ \frac{(r(t) + r(g)/\underline{u}(gt)'/)/\underline{u}(tv)'/}{r(g)\ (\ 1 + /\underline{u}(gt)'/)/\underline{u}(gv)'/} \qquad 11.36$$

It is seen from 11.36 that the greater the appraised directional dissociation $\underline{u}(tv)'$ between the agent "the TUC" and the recipient "a voluntary incomes policy", the greater would be the magnitude of aroused volitional dissonance. On the other hand, the greater the directional association between the agent "the government" and "a voluntary incomes policy" $\underline{u}(gv)'$, the less would be the magnitude of aroused volitional dissonance.

It is clear from 11.36 that the directional association between the agent "the government" and the recipient "the TUC" u(gt)' plays an ambiguous yet important role, and contributes both to dissonant and consonant aspects of the appraisal. The presence of this directional association in 11.36 derives from the appraised possible indirect effects, and illustrates the ambiguity that the face value indirect effect and the manipulative indirect effect are both possible consequences of the government's appraised action, without the actual consequences being known until possibly some future time.

As with modal dissonance, the operation of processes maximizing psychological efficiency will tend to minimise the arousal of dissonance. This would manifest itself in a tendency to distortion of the directional relationship contributing to the dissonant projected evaluation, provided that the constraints of the construct system, against which the relationship is delineated, permit. From 11.36, the directional relationship that is most likely to suffer such distortion is the directional dissociation between the TUC and a voluntary incomes policy. The referent identification, which is the locus of the volitional dissonance, may possibly suffer accommodative reappraisal in the direction of the individual dissociating from the incomes policy, but this is unlikely to any marked degree, both because of the constraints acting on the referent identification and also because of the change this would entail in the projected evaluation of the government's support for the policy, from being

compatible to being incompatible.

When the pressures of appraisal are sufficiently great for the assimilation of the contents of the appraisal plane into the identity structure, the aroused volitional dissonance would become bound in the volitional aspect of the identity structure. The consequences of bound dissonance in the modal aspect of the identity structure have been examined in detail in Chapter 10. Using analogous arguments, similar consequences are derived for the volitional mode.

INTERACTION BETWEEN DISCREPANCY DISSONANCE, MODAL DISSONANCE AND VOLITIONAL DISSONANCE

In Chapter 10, accommodative reappraisal following the interaction of bound dissonance in the modal mode with aroused discrepancy dissonance was considered. It was demonstrated that the change in evaluation of a referent belief or expectation in line with an advocated discrepant point of view, would be either greater (over-accommodation) or less (under-accommodation) than the change in the absence of bound dissonance, according to whether the referent evaluation contributed to a dissonant or consonant element associated with the bound dissonance. In an exactly analogous way, pressures resulting in the under- or over-accommodation in the presence of aroused discrepancy dissonance, follow from the existence of bound dissonance in the volitional mode.

Expression 11.36 may be taken to refer to the dissonance bound in the volitional aspect of the identity structure as the result of

the assimilation of the directional relationships between the government, the TUC, and a voluntary incomes policy (u(gv)', u(gt)', and u(tv)') during appraisal of the newsbroadcast. Thus:

$$\text{bound: } D(g,\underline{v},t) = G(v)r(v)\ \frac{(r(t) + r(g)/\underline{u}(gt)'/)/\underline{u}(tv)'/}{r(g)\ (\ 1 + /\underline{u}(gt)'/)/\underline{u}(gv)'/} \qquad 11.37$$

where "bound: D(g,v,t)" refers to the volitional dissonance bound in the portion of the identity structure containing the entities "the government", "the TUC", "a voluntary incomes policy", and in which the underlining "v" refers to the individual's identification with "a voluntary incomes policy".

Clearly, from 11.37, u(tv)' ("the TUC does not intend to support a voluntary incomes policy") is the directional relationship which contributes greatest to the bound dissonant elements, and u(gv)' ("the government intends to promote a voluntary incomes policy") is the directional relationship which contributes greatest to the bound consonant elements associated with the bound volitional dissonance. Thus, if at a later stage in time, another situation is appraised in which the discrepant point of view is put that the TUC intends to support a voluntary incomes policy, the processes operating to maximise psychological efficiency of the portion of the identity structure containing the bound dissonance and raised to the excited state of awareness, will assist the pressure for accommodative reappraisal arising from the discrepancy dissonance. That is, the change in evaluation of the referent belief about the directional relationship between the TUC and a voluntary incomes policy is given by

Delta $\underline{u}(tv)' = a\,(discrep{:}D) + a_v\,(bound{:}D(g,\underline{v},t)) - P$ 11.38

where a(discrep:D) refers to the pressure for accommodative reappraisal due to the aroused discrepancy dissonance, and a_v(bound:D($g,\underline{v},t$)) refers to the assisting internal pressure due to the bound volitional dissonance. "P" represents the facbr of internal constraints due to the strength of binding of the referent. The change in evaluation given by 11.38 represents an <u>over-accommodation</u> by an amount a_v(bound:D($g,\underline{v},t$))compared with the state of affairs that would exist in the absence of the bound volitional dissonance. If, on the other hand, the mood of the subsequent situation is that the government does <u>not</u> intend to promote a voluntary incomes policy, thenthe pressure arising from maximizing psychological efficiency would tend to minimise any further increase ir volitional dissonance with respect to the portion of the identity structure containing the bound dissonance. That is, the pressure would resist a change in the referent evaluation (the belief that the government intends to promote an incomes policy) which contributes to the bound consonant elements. In this case, the pressure arising from the aroused discrepancy dissonance for the accommodative reappraisal of the referent belief would be resisted by the internal pressure due to the existence of bound volitional dissonance, i.e. the change in evaluation of the referent belief is given by:

Delta $\underline{u}(gv)' = a\,(discrep{:}D) - a_v\,(bound{:}D(g,\underline{v},t)) - P$ 11.39

Compared with the change in evaluation of the referent in the absence of bound volitional dissonance, expression 11.39 indicates an under-accommodation by an amount a_v(bound:D(g,v,t).

Expressions 11.38 and 11.39 refer to the interaction of aroused discrepancy dissonance and bound volitional dissonance, for an individual who possesses favourable evaluations of the government, the TUC and a voluntary incomes policy, and who identifies with such a policy. The interaction of discrepancy dissonance and dissonance bound in the modal mode has been examined in Chapter 10. Expressions 10.28 and 10.29 refer to changes in evaluation of the referent beliefs about the relationships between the government and a voluntary incomes policy, and between the TUC and a voluntary incomes policy, considering the interaction of discrepancy dissonance with bound modal dissonance only, for an individual who, as above, has favourable referent evaluations of the three entities of the example. The expressions are reproduced here:

$$\text{Delta } u(gv) = a\,(\text{discrep:D}) - a_m\,(\text{bound:D}(g,v,t)) - P \qquad (10.28)$$

where a_m(bound:D(g,v,t) represents the extent of the change in evaluation of the relationship u(gv), due to the internal resisting pressure arising from the bound modal dissonance;

$$\text{Delta } u(vt) = a\,(\text{discrep:D}) + a_m\,(\text{bound:D}(g,v,t)) - P \qquad (10.29)$$

where, in this case, the internal pressure arising from the bound modal dissonance assists the pressure arising from the discrepancy dissonance.

The association of the government with a voluntary incomes policy in the modal mode and the directional association between the government, as an agent, and a voluntary incomes policy, as a recipient, in the volitional mode, correspond to two aspects of the same bond or connection between the two entities (in the modal aspect the association is reciprocal, in the volitional aspect the directional association is non-reciprocal). The degree of association represented by the connection is indicated by u(gv). By combining the expressions for the interaction between the aroused discrepancy dissonance and the bound modal dissonance (expression 10.28), and for the interaction between the same aroused discrepancy dissonance and the bound volitional dissonance (expression 11.39), the resultant change in evaluation of the relationship between the government and a voluntary incomes policy, as a consequence of the interaction between the three modes of dissonance, is given by:

$$\text{Delta } u(gv)' = a(\text{discrep:D}) - a_m(\text{bound:D}(g,v,t)) - a_v(\text{bound:D}(g,\underline{v},t)) - P \qquad 11.40$$

Similarly, the resultant change in evaluation of the relationship between the TUC and a voluntary incomes policy, as a consequence of the interaction between the three modes of dissonance, is given by combining expression 10.29 and expression 11.38:

$$\text{Delta } u(tv)' = a(\text{discrep:D}) + a_m(\text{bound:D}(g,v,t)) + a_v(\text{bound:D}(g,\underline{v},t)) - P \qquad 11.41$$

(NB. In the notation used here u(gv)' represents the common connection between the two entities in both its modal and its volitional aspect; for the volitional aspect the directional relationship is read in the usual way and for the modal aspect the relationship is reciprocal: similarly for u(tv)'.)

Expressions 11.40 and 11.41 describe the interaction between the three modes for an individual: who identifies with a voluntary incomes policy; who has favourable referent evaluations of the government, the TUC, and a voluntary incomes policy; who has assimilated the relationships in their modal and volitional aspects between the government and the policy, between the TUC and the policy, and between the government and the TUC; and who, in the first case (expression 11.40), comes across a discrepant point of view with respect to the relationship between the government and the policy and who, in the second case (expression 11.41), subsequently comes across a differing stand on the relationship between the TUC and the policy. In this example, the volitional and modal pressures operate in conjunction, resisting the pressure for accommodative reappraisal in the one case and assisting it in the second. With respect to the change in evaluation of the relationship between the government and a voluntary incomes policy, there would be considerable under-accommodation to the discrepant point of view. With respect to the relationship between the TUC and the policy there would be considerable over-accommodation.

However, given an individual with different referent evaluations or a different identification, it is, of course, possible that the interaction between the internal pressures arising from the bound modal and the bound volitional dissonances would act in opposition. In general, the possible interactions with discrepancy dissonance are given below:-

change in evaluation of the relationship between the two entities a_1 and a_2:

$$\text{Delta } u(a_1a_2) = a(\text{discrep:D}) + a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 11.42$$

$$\text{Delta } u(a_1a_2) = a(\text{discrep:D}) + a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad 11.43$$

$$\text{Delta } u(a_1a_2) = a(\text{discrep:D}) - a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 11.44$$

$$\text{Delta } u(a_1a_2) = a(\text{discrep:D}) - a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad 11.45$$

In the above, a(discrep:D) represents the contribution towards accommodative reappraisal due to discrepancy dissonance, $a_m(\text{bound:}D_m)$ represents the contribution due to bound modal dissonance in support of, or in opposition to accommodative reappraisal, and $a_v(\text{bound:}D_v)$, similarly, the contribution due to bound volitional dissonance. The particular type of interaction (11.42 to 11.45) will depend on the contribution of $u(a_1a_2)$ to the bound modal and volitional dissonances. That is, the type of interaction will depend on whether $u(a_1a_2)$ contributes to consonant or dissonant elements in the modal and the volitional aspects of that portion of the identity structure containing the bound dissonances excited during the present appraisal.

Expression 11.42 indicates that the appraised discrepancy is in the direction of decreasing the bound dissonances in both the modal and the volitional modes, the manifestation of this being the assisting internal pressures towards accommodative reappraisal in both modes. Expression 11.43 corresponds to the case in which the appraised discrepancy is in the direction of decreasing bound dissonance in the modal mode, but of increasing bound dissonance in the volitional mode, and the internal pressures are in opposition. Expression 11.44 likewise corresponds to the case in which internal pressures are in opposition, but in which the appraised discrepancy is in the direction of decreasing bound volitional dissonance. Finally, expression 11.45 indicates that internal pressures resist accommodative reappraisal in both the modal and the volitional modes, and corresponds to the case in which the appraised discrepancy is in the direction of increasing the bound dissonancesin both modes. These possible interactions are experimentally examined in Chapter 13.

It should be noted that only in the first case (expression 11.42) are the three modes of dissonance operating in conjunction. In each of the other three cases, the interaction between the three modes is one of conflicting pressures, and in two of them the internal pressures arising from the bound dissonances are mutually antagonistic. In view of the existence of these possibilities, any explanation of the mechanism of dissonance reduction in terms of a drive towards consistency (c.f. the consistency theorists ⊕ Chapter 2) is totally

untenable, since these cases illustrate that dissonance processes may frequently actively militate against any form of consistency.

The analysis of the internal pressures arising from bound volitional dissonance is more complicated when directional relationships contribute to assimilated possible indirect effects and outcomes, in which case ambiguous pressures can arise from the volitional mode alone. This is true for the directional relationship between the government and the TUC, as it exists in expression 11.37 for bound volitional dissonance. Consideration of the pressures arising from the assimilation of such possible face value and manipulative indirect effects is given in Chapter 13.

In Chapters 9 and 10, and in the present chapter, three modes of appraisal and dissonance arousal have been examined. Two of the modes are related to two aspects of the individual's identity, defined as the modal self and the volitional self aspects (Chapter 5). The third mode of appraisal, the comparison mode, is related to the cognition of discrepancies between environmental features and corresponding beliefs and expectations (which relate to both volitional and modal aspects) within the identity structure*. The interaction between the three modes of dissonance, deriving from the three modes of appraisal, has been discussed in this section. It is readily seen below that such interaction may frequently be one between cognitive and affective states of the individual.

* See Chapter 5 for the position of beliefs and expectations in relation to the identity structure.

It has been argued (Chapters 6 and 9) that the comparison mode is essentially cognitive in its functioning, and that it delineates cognitive discrepancies between the individual's beliefs and expectations, and differing ones encountered in the social and physical environment. Discrepancy dissonance is held to derive its energetics from the cognition of discrepancy between the actuality, assessed by way of the construct system, and the corresponding referent belief or expectation residing within the identity structure*. For the modal and volitional modes, on the other hand, it has been argued that modal and volitional dissonances are essentially affective in nature, and that their energetics derive ultimately from incompatibilities between self-referring affective states (Chapter 6). Hence, an interaction between discrepancy (cognitive) dissonance and either, or both, modal and volitional (affective) dissonances, would be an interaction between cognitive and affective states of the individual. The analysis of this section has given an explicit formulation of such interaction, and the consequences that would arise.

INTERPRETATIONS OF OTHER INVESTIGATIONS:

(1) INTERACTION BETWEEN THE COMPARISON AND THE VOLITIONAL MODES OF APPRAISAL

C. J. Harvey (1966) criticises the "butterfly curve" hypothesis

* Qualifications on the cognitive nature of the comparison mode are given in Chapter 5 (section on cognitive components) and Chapter 6 (section on the comparison plane).

associated with adaptation level theory* (e.g. McClelland et al 1953, Helson 1964), by which equal input discrepancies, either above or below a baseline expectancy, give rise to identical affective consequences and, instead, emphasize that the direction of discrepancy, as well as its magnitude, must be considered when "hope" and "preferences" are involved. To demonstrate the importance of directionality when "hope" is involved, he cites the results of an experiment (Harvey and Clapp 1965) in which subjects indicated both how they hoped and expected to be rated by another person (a relative stranger) on various personally relevant characteristics (e.g. trustworthiness, morality and dependability), and in which they were exposed to discrepant (fictitious) ratings on these characteristics, which deviated from their expected ratings either in the direction of confirming or refuting "hope".

Of specific interest here are the results obtained for the re-evaluation of the subjects' expected ratings after the "communication". These show that the change in expected ratings is significantly greater for the discrepancy which is in the direction of confirming hope, than for the discrepancy which is in the direction of refuting hope. These results are readily explained as follows in terms of the interaction between discrepancy dissonance and volitional dissonance.

* Adaptation level theory is based on a notion of homeostasis; the present formulation rejects homeostasis as a fundamental explanatory principle when applied to dissonance processes (see Chapter 5).

The original discrepancies between expected ratings and hoped-for ratings on the personally relevant characteristics, indicate the likely presence of dissonant elements (either existing or anticipated to exist in a setting in which another may judge him) with respect to the individual's identification with these characteristics. Thus, dissonance in the volitional mode may be presumed to exist (or to be anticipated).

In the experimental situation, discrepancy dissonance with respect to the referent expectations is aroused by the exposure to the discrepant ratings, and results in pressures for the accommodative reappraisal of the referent expectations. But, in addition, due to the presence of volitional dissonance, internal pressures operate such as to resist an accommodative reappraisal which would result in an increase in volitional dissonance (cf. expression 11.39), or assist an accommodative reappraisal which would result in a decrease in volitional dissonance (cf. expression 11.38). Therefore, the exposure to discrepant ratings which would decrease volitional dissonance (i.e. those in the direction of hoped-for ratings) will result in the over-accommodation of the referent expectations, whilst exposure to discrepant ratings which would increase volitional dissonance (i.e. those in the direction opposite to hoped-for ratings) will result in under-accommodation. This interpretation conforms precisely with the results of the experiment*.

* It will be noted that this experiment involves the interaction between the cognitive state of affairs giving rise to discrepancy dissonance and

INTERPRETATIONS OF OTHER INVESTIGATIONS:
(2) INTERACTION BETWEEN THE MODAL AND VOLITIONAL MODES OF APPRAISAL

Rosenberg (1966), noting that consistency theories give an inadequate explanation of attitude dynamics, propounds a "dual force" explanation in which cognitive inconsistency motivation may be opposed by a competing hedonic-antihedonic force. The "cognitive inconsistency motivation" corresponds to the noton that the arousal of "inconsistency" within attitudinal cognitions is considered to be the basic condition for the occurrence of attitude change, and is the basis for the "balance model" formulation of attitude dynamics (e.g. Rosenberg and Abelson, 1960). The close parallel and the logical relationship between the balance model and dissonance in the modal mode has been made explicit in Chapter 10.

The "hedonic-antihedonic" force arises, according to Rosenberg (1966), from attitudinal cognitions that either report or forecast gain in the sense of motive reduction ("hedonic"), or loss in the sense of the heightening or the frustration of a motive ("antihedonic"). Combining the cognitive inconsistency motivation with thehedonic-antihedonic force, Rosenberg propounds the following modification of the cognitive inconsistency hypothesis:
"reactive intolerance for inconsistency will be of lesser intensity if the attitudinal cognition in question conveys a hedonic assertion

*(contd.) the affective state of affairs associated with volitional dissonance.

or promise of gain and of greater intensity if it conveys an antihedonic assertion or promise of loss" (1966, p.133-4).

The following are examples of hypothetical inconsistent attitudinal cognitions, used in the experiment to test the above hypothesis, which illustrate the hedonic and antihedonic aspects:-

hedonic:

"You have written an essay on 'What I Value Most in Life.' You feel that you have really written something meaningful and important and written it well. Professor X whom you dislike and disdain more than any other of your teachers reads the essay. He tells you with obvious sincerity that he found the essay 'a wonderfully lucid display of mature and honest thought.' (- + +)" (p.138)

antihedonic:

"You have written an essay on 'What I Value Most in Life.' You feel that you have really written something meaningful and important and written it well. Professor Y whom you like and respect more than any other of your teachers reads the essay. He tells you with obvious sincerity that he found the essay 'a horribly dreary piece of trashy, adolescent affection'. (+ - +)" (p.138)

(In Rosenberg's notation the first sign refers to the evaluative nature of the one concept "theProfessor", the third sign to the evaluative nature of the second concept "the essay", and the second sign to the relation between the two concepts.)

It is seen that the first example fits Rosenberg's definition of hedonic:

"When an inconsistent attitudinal cognition has direction (i.e. when it comprises one object related toward another object by sentiment or instrumental action) it will be hedonic (i.e. it will convey a state of affairs representing 'gain') if its content consists of a disliked object in positive relation to a positively-evaluated second object (- + +) or in negative relation to a negatively-evaluated second object (+ - -)." (p.133)

The second example complies with Rosenberg's definition of antihedonic:

"When an inconsistent attitudinal cognition has direction it will be antihedonic if its content consists of a liked object in positive relation to a negatively-evaluated second object (+ + -) or in negative relation to a positively-evaluated second object (+ - +)." (p133)

It will also be noted that what is regarded as hedonic and what is regarded as antihedonic by Rosenberg correspond closely to the definitions in the present formulation of consonant and dissonant elements in the volitional mode. These are:

(Definition 6.8) A consonant element is defined as a projected evaluation which is compatible with respect to the referent.

(Definition 6.7) A dissonant element is defined as a projected evaluation which is incompatible with respect to the referent.

A referent is defined (definition 6.5) as an identification (or the

contrary of an identification, a dissociation) or an intention on the part of the individual which features in the context of an appraisal. A projected evaluation is defined (definition 6.6) as the resultant evaluation of an effect or outcome (actual or potential) in the appraisal plane in relation to the referent.

Thus, what is termed antihedonic by Rosenberg corresponds to volitional dissonance, whilst, as has been seen, cognitive inconsistency corresponds to modal dissonance. It follows, therefore, that the combination of "cognitive inconsistency motivation" with the "hedonic-antihedonic force" refers, in the language of the present formulation, to the interaction between dissonances in the modal and the volitional aspects of the identity structure.

That, despite the close correspondence between the two formulations, there are profound differences in conceptualization will be considered later. For the present, predictions according to the two formulations will be compared with the experimental results obtained by Rosenberg.

It is assumed that the arousal of dissonance, whatever its mode, gives rise to a feeling of tension* in the individual, which feeling will be the more intense the greater the dissonance. From this it follows that the arousal of dissonance in more than one mode would generally result in a more intense feeling of tension, than the arousal

* this tension may or may not be emotionally tinged depending on the degree of cognitive dissonance (comparison mode) to affective dissonance (modal and volitional modes)

of dissonance in a single mode (depending, of course, on the magnitudes of dissonance in each mode). For each mode of appraisal, the magnitude of dissonance has been postulated as being dependent on certain factors in addition to the number and strength of dissonant and consonant elements. One of these is ego-involvement in the referent evaluation that is the locus of dissonance. It follows from the expressions of discrepancy, modal, and volitional dissonances that the greater the ego-involvement in the referent the greater would be the aroused dissonance, and, hence, also the intensity of the feeling of accompanying tension. Clearly ego-involvement in more personally relevant referents will be greater than ego-involvement in less personally relevant referents, hence dissonance, when it exists, and the accompanying tension will be greater with respect to the former referents than with respect to the latter.

Rosenberg distinguishes another factor in addition to the hedonic-anithedonic one. This is the personal-general variable which corresponds in the present formulation to the parameter of ego-involvement, such that a more personal "cognition" refers to an appraised situation in which the referent is more personally relevant (higher ego-involvement), compared with a more general "cognition" which refers to an appraised situation in which the referent is less personally relevant (lower ego-involvement).

The essay situation cited before (You have written an essay on "What I Value Most in Life".....) is one of <u>personal</u> content. An example of a situation of <u>general</u> content, also used in the experiment, is the following (given in both its hedonic and anti-hedonic forms):-

<u>hedonic-general:</u>

"You have a strong dislike for political dictators. You regard a certain Latin American dictator as a particularly unsavoury type. You read a highly reliable series of articles showing that this same dictator has achieved wonders in improving the standard of living in his country since coming to power. (- + +)" (p.139)

<u>antihedonic-general:</u>

"You have a great liking for the president of a certain Latin American country. You read a highly reliable series of articles showing that this same president since being elected has consistently opposed and blocked programs which would have vastly improved the standard of living in his country. (+ - +)" (p.139)

Rosenberg's hypothesis regarding the <u>personal-general</u> variable is as follows:

"reactive intolerance for inconsistency will be weaker if the cognition in question is of general content and greater if it is of personal content." (1966, p.135)

In terms of the dissonance formulation, the corresponding hypothesis wouldbe that dissonance aroused with respect to the more

personal issue would be greater than dissonance aroused with respect to the more general issue (this holds whichever mode of appraisal is considered).

In summary the two Rosenberg hypotheses state that: intolerance for inconsistent attitudinal cognitions is weaker when those cognitions are hedonic rather than anti-hedonic and when they are general rather than personal. Rosenberg tests the theoretical propositions about the degree of tension aroused in a person when he finds himself holding an inconsistent attitudinal cognition. Specifically he tests the following:

"Hypothesis 1. Subjects will report themselves less bothered by inconsistency within attitudinal cognitions when the content of those cognitions is hedonic and more bothered when the content is antihedonic."

"Hypothesis 2. Subjects will report themselves less bothered by inconsistency within attitudinal cognitions of general content than within those of personal content." (1966, p.135)

The experiment consisted of presenting to the subjects situations of the type cited in the previous pages, and obtaining from them measures of how much they were "bothered" by these situations (i.e. a self-report measurement of tension). There were four groups of situations: hedonic-personal, hedonic-general, antihedonic-personal and antihedonic-general. Each group contained two types of "inconsistent cognitions"; - + + and - - - for the hedonic groups, both personal and general; and + - + and + + - for the antihedonic groups, both personal and general (the absence of other types will be

commented upon in due course).

The experimental manipulations according to Rosenberg's analysis may be represented as in Table 11.11.

Table 11.11: Tension aroused by "cognitive inconsistency"

Types of situations	Hypothesis 1 (hedonic-antih. variable)	Hypothesis 2 (personal-general variable)	Total tension
Hedonic-Personal	low (a_1)	high (b_1)	(a_1 + b_1)
Hedonic-General	low (a_1)	low (b_2)	(a_1 + b_2)
Antihedonic-Personal	high (a_2)	high (b_1)	(a_2 + b_1)
Antihedonic-General	high (a_2)	low (b_2)	(a_2 + b_2)

However, according to the formulation of dissonance arousal presented in this thesis, the experimental manipulations would be represented as in the Table 11.12. "Cognitive inconsistency" corresponds to the modal mode and the "hedonic-antihedonic" variable corresponds to the volitional mode. "Cognitive inconsistency" refers to modal dissonance, whilst only the "antihedonic" state of affairs refers to volitional dissonance (there being no dissonance in the volitional mode in the "hedonic" condition).

Table 11.12:

Types of situations	Dissonance (magnitude depends on the degree of ego-involvement in referent)		Total Dissonance
	modal mode	volitional mode	
Hedonic-Personal*	high (p_1)	absent	(p_1)
Hedonic-General**	low (p_2)	absent	(p_2)
Antihedonic-Personal*	high (p_1)	high (q_1)	($p_1 + q_1$)
Antihedonic-General**	low (p_2)	low (q_2)	($p_2 + q_2$)

* high ego-involvement

** low ego-involvement

From the two Tables (11.11 and 11.12) it is clear that, according to Rosenberg's analysis, there should be a difference in tension between the situations "Hedonic-Personal" and "Hedonic-General" due to the personal-general variable, and between the situations "Hedonic-Personal" and "Antihedonic-Personal" due to the hedonic-antihedonic variable; whereas, according to the dissonance formulation, there should be a difference between the former pair of situations due solely to the magnitude of modal dissonance, whilst there should be a difference between the latter pair due to the presence or absence of volitional dissonance. There should be a difference between the

situations "Antihedonic-Personal" and "Antihedonic-General" due to the personal-general variable according to Rosenberg, but due to the difference in magnitude of both modal and volitional dissonances according to the dissonance formulation. In other words, analysis according to the dissonance formulation unequivocally predicts an interaction effect between the experimental variables, whereas the Rosenberg hypotheses do not. This does not mean that the Rosenberg hypotheses necessarily exclude an interaction effect, but simply that such an interaction effect cannot be predicted on the basis of them. In other respects the two analyses give essentially similar predictions as will be seen from the two tables - each would predict the least tension for the "Hedonic-General" type of situation, and the most tension for the "Antihedonic-Personal" type of situation.

The experimental results confirm the two experimental hypotheses (p less than 0.001 for both hypotheses, for both male and female subjects), and thus provide support for: (1) the hedonic-antihedonic variable or the presence or absence of volitional dissonance; (2) the personal-general variable or the magnitude of dissonance depending on the degree of ego-involvement; according to the Rosenberg or dissonance interpretation respectively. In addition, the results indicate an interaction effect between the "hedonic-antihedonic" and "personal-general" experimental manipulations (p less than 0.01 for male subjects, p less than 0.001 for female subjects), which provides support for the interpretation in terms of

the existence of modal and volitional dissonances, and the dependence of their magnitudes on the degree of ego-involvement in the issue (or referent), as illustrated in Table 11.12.

Thus, despite the obvious parallels between the two interpretations, the experimental results provide striking evidence in support of the dissonance formulation, which is able to predict an interaction effect that cannot be derived from Rosenberg's "intolerance of cognitive inconsistency" approach.

From Rosenberg's experimental results it is possible to obtain estimates for the relative contributions of the modal and volitional dissonances for each type of situation. The actual results obtained by Rosenberg are listed under the heading "Reported tension" in Tables 11.13 and 11.14 (Table 11.13 is for male subjects, Table 11.14 for female subjects). The estimated mean contributions of modal and volitional dissonances to the reported tension are obtained by performing simple subtractions in conformity with the algebraic summations given in Table 11.12 for the total dissonances expected according to the dissonance analysis.

Table 11.13: Male subjects

Types of situations	Reported tension*	Estimated mean contributions to "reported tension" due to the presence of modal and volitional dissonances*		
		modal mode	volitional mode	
Hedonic-Personal	4.10 (p_1)	4.10 (high: p_1)	0 (absent)	(high ego-involvement)
Hedonic-General	2.87 (p_2)	2.87 (low: p_2)	0 (absent)	(low ego-involvement)
Antihedonic-Personal	7.06 ($p_1 + q_1$)	4.10 (high: p_1)	2.96 (high: q_1)	(high ego-involvement)
Antihedonic-General	4.75 ($p_2 + q_2$)	2.87 (low: p_2)	1.88 (low: q_2)	(low ego-involvement)

* For items in brackets, refer to Table 11.12. The values for "modal mode" and "volitional mode" are derived from those for "reported tension" by performing the appropriate subtractions. The higher the value, the greater is the reported tension.

Table 11.14: Female subjects

Types of situations	Reported tension*	Estimated mean contributions to "reported tension" due to the presence of modal and volitional dissonances*		
		modal mode	volitional mode	
Hedonic-Personal	4.05 (p_1)	4.05 (high: p_1)	0 (absent)	(high ego-involvement)
Hedonic-General	3.09 (p_2)	3.09 (low: p_2)	0 (absent)	(low ego-involvement)
Antihedonic-Personal	7.37 ($p_1 + q_1$)	4.05 (high: p_1)	3.32 (high: q_1)	(high ego-involvement)
Antihedonic-General	5.23 ($p_2 + q_2$)	3.09 (low: p_2)	2.14 (low: q_2)	(low ego-involvement)

* For items in brackets, refer to Table 11.12. The values for "modal mode" and "volitional mode" are derived from those for "reported tension" by performing the appropriate subtractions. The higher the value, the greater is the reported tension.

It is seen on inspection of Tables 11.13 and 11.14 that the estimated ratios for degrees of ego-involvement in the general compared with the personal situations (i.e. p_2/p_1 and q_2/q_1) are of the order 0.7 ± 0.1 for both the modal and volitional modes, and for bothmale and female subjects.

Since there is a certain parallelism between certain aspects of Rosenberg's formulation and certain aspects of the dissonance formulation, it is necessary to distinguish clearly between them in order to avoid confusion. Rosenberg views "cognitive inconsistency"

as an autonomous state of affairs that alone is responsible for attitude dynamics. Other factors such as the ones he has labelled as the "hedonic-antihedonic", and the "personal-general" variables are regarded merely as attenuators of the "reactive intolerance for cognitive inconsistency"; they are regarded as modifying the aroused tension, but a tension that exists only because of a "cognitive inconsistency". It is the "cognitive inconsistency" that is regarded as a "motivating state of affairs"*, with other factors being regarded simply as modifiers of aroused tension. "Cognitive inconsistency" has a quality per se, which is self-evident to Rosenberg and others following the "balance formulations", for example:

"Such writers as Heider (1946, 1958), Newcomb (1963), Cartwright and Harary (1956) and Abelson and Rosenberg (1958) agree in classifying half of these eight possible types of attitudinal cognitions as internally inconsistent (or "unbalanced") and the other four as internally consistent." (Rosenberg 1966, p.131 • my italics)

(The inconsistent types are given as:

+ + −, − + +, + − +, − − −;

and the consistent types as:

+ − −, − − +, + + +, − + −;

* The term "consistency" and the principle of "cognitive inconsistency as a motivating state of affairs" have been rejected as not having any explanatory power. (Chapters 2, 3, 5, 6, 7 and elsewhere)

in which the middle sign refers to a positive or negative relationship between two concepts of positive or negative affective sign.) Making this position quite explicit, Rosenberg elaborates and gives the impression that "cognitive inconsistency" is in some way a pure state of affairs which does not depend on any content factors of the situation. A cognition is self-evidently consistent or inconsistent. By contrast, he states that the "hedonic-antihedonic" variable is content bound, that it depends on the content of the cognition in a way that "cognitive inconsistency" does not. "...it (is) suggested that a number of variables may influence whether specific inconsistent attitudinal cognitions are or are not tolerated...(certain variables) have to do with content aspects of inconsistent cognitions themselves." (1966, pp.131-132)

One of these variables is described as concerning "the hedonic or antihedonic aspect of the content of an attitudinal cognition" (p.132). For another: "it is suggested that content differences, as between personal and general reference, comprise a second variable that may influence whether or not the individual is made sufficiently uncomfortable by a particular inconsistency to undertake its reduction or elimination" (p.135). Note that "inconsistency" is referred to as though it were independent of content, whilst the "content variables" are referred to as though they attenuate the tolerance for "inconsistency".

The present formulation, in terms of modes of appraisal and modes of dissonance arousal, is considerably at variance with the position

adopted by the "cognitive inconsistency" theories. For the theory of appraisal and reappraisal presented in this thesis, content is the essential feature of all appraisal. Indeed, it is meaningless to talk about appraisal and the possible arousal of discrepancy, modal and volitional dissonances without considering the content, and such factors as ego-involvement in the issues, persons, objects identifications, intentions, etc. perceived as relevant in the content of the particular situation being appraised*.

The concentration by Rosenberg on a self-evident notion of "cognitive inconsistency" as the state of affairs responsible for attitude dynamics and the subsidiary role given by him to so-called "content" factors, leads him to ignore two types of situations in his experiment which, according to him, would be "cognitively consistent", yet which, according to the present dissonance formulation, would be expected to arouse tension associated with volitional dissonance. The two types of situation are, in Rosenberg's notation, - - + and - + -. Examples of these might be:

(1) You have written an essay on "What I Value Most in Life". You feel that you have written something meaningful and important and have written it well. Professor X whom you dislike and disdain more than any other of your teachers reads the essay. He tells you with

* Albeit that appraisal may not always be articulate, as when delineation of the distal stimuli is by way of semantically unlabelled constructs.

obvious sincerity that he found the essay "a horribly dreary piece of trashy, adolescent affectation". (- - +)
(disliked Professor (-) directionally dissociates from, i.e. condemns, (-) the fine essay (+).)
(2) Of all the New York theater critics there is one whose writings have convinced you that he is a particularly ignorant and insensitive lout. A fine play that you saw on opening night and enjoyed tremendously seems to be set for a long run because it was endorsed by all the critics except the one you particularly dislike. He strongly opposes the play and largely because of the campaign he wages against it in his column it is forced to close down. (- + -)
(disliked critic (-) directionally associates with, i.e. supports, (+) the closing down (-).)*

According to Rosenberg neither of these examples is "cognitively inconsistent", hence neither of them would give rise to any tension. However, according to the dissonance interpretation, modal dissonance is absent but volitional dissonance is present. The magnitude of the dissonance depends on the degree of ego-involvement, hence the tension would be expected to be greater for the "personal" situation compared with the "general" one. On the basis of Rosenberg's hypotheses, on the other hand, no tension would be expected, let alone differences in magnitude, since the "hedonic-antihedonic" and "personal-general" variables are regarded only as modifiers of tension aroused due to "cognitive inconsistency"; no "cognitive inconsistency" means no tension, which, therefore, cannot be modified.

* Both of these examples are hybrids of actual examples used by (contd.)

Thus, it is seen that despite a degree of parallelism between the two formulations, profound differences in conceptualisation exist between them, which do have practical consequences for analysis and prediction. The two situations above have been ignored by Rosenberg as ones not arousing tension, yet are ones in which tension ratings are to be expected on the basis of aroused volitional dissonance (tension scores to be expected would be approximately 3.00 for the "personal" case, and approximately 2.00 for the "general" case, given the same conditions and subjects of the experiment quoted; these scores are derived from the estimates for volitional dissonance given in Tables 11.13 and 11.14 for mean contributions of modal and volitional dissonances calculated from the results of the experiment).

Given the results of Rosenberg's experiment, the dissonance formulation receives excellent support, especially with regard to the unequivocally predicted interaction effect. Since this is an interaction effect which could not be predicted on the basis of Rosenberg's hypotheses, it is concluded that the explanatory power of the dissonance formulation is greater than that of the "tolerance for cognitive inconsistency" formulation. In addition, the present formulation is able to analyse situations in terms of interaction between discrepancy and volitional dissonances (as in the interpretation of the Harvey and Clapp experiment) and the interaction between all

*(contd.) Rosenberg in his experiment (1966, pp. 138-139).

three modes (Chapter 13). The importance of volitional dissonance (for which there is no real equivalent in Rosenberg's approach) in the psychological process of making a decision is seen in Chapters 8 and 12, and in the interaction with modal and discrepancy dissonances is seen in Chapter 13.

SUMMARY

Attention is concentrated in this chapter on the volitional mode of appraisal, the binding of dissonance in the volitional mode, and on the effect of the interaction of the three modes of dissonance (discrepancy, modal and volitional dissonances) during the process of reappraisal.

Special problems are encountered in the conceptualisation of appraisal in the volitional mode. These arise from the future orientation of this mode and, in particular, from the frequent indeterminancy, for the individual appraising an agent's action or intention, of the (future) outcome of that agent's action or intention.

Much of the chapter is devoted to an attempt to explicate principles whereby the appraisal of possible (future) outcomes may be given in terms of the delineated distal stimuli. In particular, two processes of attribution are considered. One is the attribution of possible "unintentional" indirect effects that might result from an agent's action, considered in terms of a "face value" appraisal of the indirect effect that the agent might have on some recipient by way of its action on an intermediary which, itself, acts upon the

recipient. The other is the attribution of possible "intentional manipulative" effects, elaborated in terms of an appraisal of the indirect effect that an agent might have through the intentional manipulation of an intermediary for its own ends.

The exact nature of the attributed manipulative effect is held to depend on the circumstances of appraisal and on the projection of the referent evaluations of both the agent and the intermediary in question on to the delineated distal stimuli. Thus, one circumstance taken into account is whether the frame of reference of an agent is appraised as conjunctive or disjunctive with that of the individual appraising the situation in which that agent acts. (The frames of reference are defined as conjunctive when the agent's intention is appraised by the individual as supporting his own intention or identification, or disjunctive when the agent's intention is appraised by him as opposing his own intention or identification.)

Extended treatment is given to the interaction of the circumstances of appraisal and the nature of the projection; the results for the attributed manipulative effect are explicitly given for the various conditions considered. As an incidental result of this analysis, it appears that the phenomenon of animism is a natural consequence of the psychological process by which manipulative effects become attributed.

The algebraic notation of Chapter 10 (modal mode) is extended to cope with the delineation of directional (non-reciprocal) relationships in the volitional mode. Both the appraised direct and indirect possible

effects of an agent's actions are expressed in this extended notation.

The magnitude of volitional dissonance aroused during appraisal is given (in a similar manner to modal and discrepancy dissonances) in terms of the strengths of dissonant and consonant elements, the ego-involvement in the referent identification or intention, and the perceived relevance of that referent in the context of the appraisal. Since the projected evaluations of appraised indirect effects, when they exist, may be dissonant or consonant with respect to the referent, they, together with appraised direct effects, contribute to the magnitude of dissonance aroused in the volitional mode.

The binding of dissonance in the volitional mode is considered in the same way as for the modal mode. The subsequent effects of bound volitional dissonance are discussed with particular emphasis on the outcome of the interaction of dissonance bound in the volitional mode, concurrent dissonance bound in the modal mode, and aroused discrepancy dissonance. Algebraic expressions indicate the degree of accommodative reappraisal of referent evaluations expected for the various possible interactions, as it depends on the selective predisposing or constraining pressures arising from the presence of bound dissonances. In addition, it is shown that these pressures will frequently be antagonistic, thus possibly militating against dissonance reduction in one or another mode. Such possibilities render untenable explanations of dissonance reduction in terms of a drive towards consistency.

Experimental findings of other investigators are interpreted in terms of the interaction between modes of dissonance. Harvey and Clapp (1965) found that the discrepancy in discrepant information has a greater effect when it is the direction of a hoped for (though not expected) evaluation. This finding is interpreted in terms of the interaction between discrepancy and volitional dissonances.

An experiment by Rosenberg (1966) in which self-report assessments are obtained of the tension aroused by "cognitively inconsistent" statements concerning greater or less ego-involving issues, is interpreted in terms of the interaction between modal and volitional dissonances. Considerable support for this interpretation derives from the existence of a significant experimental interaction effect obtained by Rosenberg, which could not be predicted on the basis of the "cognitive inconsistency" approach, but which would have been predicted on the basis of the interaction between modal and volitional dissonances.

An experimental evaluation of the theory concerning the interaction of discrepancy, modal and volitional dissonances is given in Chapter 13.

SECTION III: EXPERIMENTAL EVALUATION

CHAPTER 12 DECISION PROCESSES

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INTRODUCTION

The purpose of the experiment reported in this chapter is to demonstrate (a) the validity of the decision theory proposed in Chapter 8 and (b) the changes in the magnitude of aroused dissonance from pre-decision appraisal to post-decision reappraisal in accordance with the principle of maximizing psychological efficiency.

The decision theory requires for its experimental evaluation the ability to obtain quantitative estimates of dissonance aroused with respect to the individual's pre-decision appraisal of each choice. Two problems of experimentation are therefore posed, one in relation to the nature of dissonance and its measurement, the other in relation to obtaining a genuine pre-decision appraisal of the available choices that is uncontaminated by the effects of implicit decisions in the choice situation itself. The latter problem does not arise for the post-decision reappraisal, since it is precisely the effect of the decision on the individual's previous evaluations that is required. However, for the pre-decision appraisal the effects of implicit decisions must be excluded, for otherwise the appraisal obtained will not be a pre-decision one.

With regard to the first problem, the nature of dissonance is such that it cannot be directly measured, but it is possible to make an estimate of its magnitude if hypothesis 6.10 is assumed to hold, i.e. the magnitude of dissonance depends on: a direct relation to the degree of ego-involvement in the referent; a direct relation to the

perceived relevance of the referent in the context of the appraisal; a direct relation to the number and strength of dissonant elements with respect to the referent; an inverse relation to the number and strength of consonant elements with respect to the referent; and if it is possible to obtain adequate measures of the degree of ego-involvement in and perceived relevance of the referent in question, and of the strengths of dissonant and consonant elements.

The question of obtaining adequate measures depends, in part, on the ability to delineate the component aspects of the decision situation being appraised by the individual and to measure his evaluations of them independently. If, in addition, the component aspects of the decision situation can be delineated and the individual's evaluations of them measured before he has knowledge of the choice alternatives and before he is even aware that a decision situation confronts him, then the second problem of experimentation would be solved, since these measures would be uncontaminated by the effects of implicit decisions.

The strategy adopted to overcome these problems is to specify to the subject the component aspects of what will be, in fact, the total context of the decision situation, before he is presented with the actual situation itself. The subject's evaluations of these component aspects are then to be obtained, together with measures of his ego-involvement in certain elicited referent intentions that will subsequently become associated with specific decision alternatives.

On the basis of these measures, and making the assumption that the elicited referent intentions are totally relevant to the subsequent decision alternatives, estimates may be obtained for the magnitudes of dissonance aroused with respect to the appraisal of each choice*, uncontaminated by implicit decisions. From these estimates the prediction of the individual's actual choice may be made on the basis of the decision principle that, that choice, the pre-decision appraisal of which results in the arousal of the least magnitude of dissonance compared with any other available choice, becomes by the operation of the decision process the actual choice.

After the subject's evaluations of the component aspects of the decision situation and measures of his ego-involvement in the referent intentions are obtained, he is confronted with the choice alternatives themselves (i.e. the actual decision situation). After deliberating as long as he wishes he records his choice. Finally, his post-decision reappraisal is obtained in terms of both his re-evaluations of the component aspects of the decision situation and his re-evaluations of ego-involvement in the referent intentions.

A full description of the experimental situation and the methods used to obtain the relevant measures, follows the specification of the basic hypotheses to be tested.

* The term "choice" denotes throughout this chapter: "the acceptance of one alternative and the rejection of others".

HYPOTHESES

Note: The term "choice" denotes "the acceptance of one alternative and the rejection of others". The distinction between "choice" and "chosen alternative" is adhered to throughout this chapter.

1) The choice made by an individual when confronted with a decision situation is determined in accordance with the principle of least dissonance, following on the pre-decision appraisal of the available alternatives, except in a case of "decision reversal".

(The principle of least dissonance is derived from the theoretical hypothesis that the decision process operates at maximal psychological efficiency.)

2) In a case of "decision reversal", the choice made by the individual is determined in accordance with two necessary conditions. These conditions are that, for the choice the pre-decision appraisal of which results in the least dissonance compared with the other available choices,

(i) the dissonance aroused with respect to one of the alternatives tending toward rejection is greater than the dissonance aroused with respect to the alternative tending toward acceptance,

(ii) the dissonance aroused by the appraisal of the possible acceptance of that alternative in question tending

toward rejection, is less than that aroused by the appraisal of its possible rejection.

(i.e. (i) the tension associated with the potential loss of the desirable features of the alternative tending toward rejection is greater than that associated with the alternative tending toward acceptance, and is, therefore, accompanied by an increased salience of those desirable features about to be rejected, (ii) the appraisal of the alternative in question gives rise to less tension when it is appraised as a chosen one, compared with it as a rejected one.)

Given other unspecified conditions the alternative in question would become the accepted one.

Note: Since the sufficient conditions for hypothesis 2 cannot be specified in addition to the necessary conditions, hypothesis 2 is not concerned with the prediction of positive instances of "decision reversal", but states that, in a case of "decision reversal", it should conform to the two conditions specified. Insofar as decision reversal is possible, the predictive power of hypothesis 1 is weakened. However, according to the rationale given in Chapter 8, the more attention given to the decision situation and the more the decision alternatives are thought through, the less likely is "decision reversal" to occur. Hence, by making the component aspects of the decision situation as explicit as possible, the number of "decision reversals" should be kept small.

3) The post-decision reappraisal of the actual choice made by the individual results in an increased psychological efficiency in comparison with that consequent upon the pre-decision appraisal of the same choice, in accordance with the theoretical hypothesis of processes operating to maximise psychological efficiency.

A number of dependent effects are expected to follow from hypothesis 3. They are that, comparing the post-decision reappraisal with the pre-decision appraisal,

(a) the dissonance associated with the actual choice will tend to be reduced,

(b) the psychological efficiency with respect to the chosen alternative will tend to be increased,

(c) the dissonance associated with the chosen alternative will tend to be reduced,

(d) the magnitude of dissonant elements in relation to the chosen alternative will tend to be reduced and that of consonant elements will tend to be increased.

Note: The degree to which the dependent effects (a) to (d) occur, will be a function of the various constraints operating both in the external situation and within the psychological matrix of the individual.

THE EXPERIMENTAL PROCEDURE

The decision situation is set within an academic context which is of concern to postgraduate students in the Social Sciences, who are to act as subjects in the experiment. It has to do with ways of organising the content of postgraduate seminars in the Social Sciences, and the study is introduced as a survey about teaching methods used in these seminars in the following way:

"The Social Sciences are concerned with theory and the development of appropriate models, including mathematical models. For this reason graduate seminars aim to give students an awareness of theory and an understanding of particular fields.
During the past year there has been some discussion about the teaching of theory. It seemed desirable therefore to find out the views of those most concerned with this, namely the graduates."

The above two paragraphs serve the dual purposes of setting the general context of the decision situation (unknown to the subject) and obtaining the subject's interest in the study in a personally involving way. To increase the subject's personal involvement a few details are requested, such as his name, his degree course, the topic of his research thesis, etc. Following this, a specimen example of the type of rating scale to be used in the study is given, after which the subject is asked to complete two practice examples himself. One of these practice examples requests comparative

evaluations of three items on a single scale; the other requests a single evaluation on another scale. Both scales range from zero to 15, and are labelled "unimportant" above the zero end and "very important" above the other end. Following these practice items the study proper begins. (Refer to Appendix A for the actual experimental booklet.)

The context of the study is narrowed to "part of your seminar course is concerned with particular social or economic phenomena which interest you and about which there exist three contending theories", and three statements are presented to the subject which are designed to elicit referent intentions that will each become subsequently associated with a particular decision alternative.

The subject evaluates comparatively each of the statements in terms of their desirability to him on a single (0 to 15) scale, labelled "not desirable" above the zero end and "very desirable" above the other end. These ratings are taken to be comparative measures of the subject's ego-involvement in each of the "referent intentions". The "referent intentions", that is the statements, are as follows:

(A) "To become superficially acquainted with all three theories so that you would know something of the overall differences in formulation;"

(G(p))

(B) "To understand one of the theories in depth so that you would appreciate its special features;"

(G(q))

(C) "To understand all three theories in depth so that you would appreciate the special features of each."

(G(r))

The G(p), G(q), and G(r) denote the ratings of desirability (i.e. ego-involvement) elicited from the subject.

Had these three statements been given as choice alternatives, they would have defined the context of a decision situation in terms of essentially two component aspects, namely:

(1) depth versus superficiality of understanding,

(2) knowledge of three theories versus knowledge of one.

The decision that might be made between these alternatives would have been expected to conform to the preference or desirability ratings elicited (see Chapter 8, decision example 3)*.

* For such a decision to conform with the decision theory, it can be shown algebraically that for those subjects who express a preference for statement (A) or (B) over statement (C), additional elements unspecified in the above statements must be adduced to the situation by the subjects such that they feature as undesirable aspects of statement (C) (e.g. the amount of intellectual effort required to fulfil the demands of statement (C)).

In the experiment the addition of further specific elements in the decision situation itself, and the explicit nature of the decision alternatives presented to the subjects, should have the effect of diminishing the contribution of adduced elements to the sum total strength of the dissonant and consonant elements resulting from the decision situation appraisal.

In the actual experiment only 7 out of a total of 31 subjects gave ratings for statement (A) or (B) higher than for (C).

However, since the subject is not asked to make a decision at this stage, nor is he aware that he will be asked to make one in due course, the next part of the procedure is designed to obtain evaluations of the component aspects that comprise the total context of what will subsequently become the decision situation. The component aspects include those two already specified above and, in addition, two others. The evaluations are obtained in terms of the subject's directional relationships to the items in question, that is, in terms of the strength of his wish to associate or dissociate from each item. The direction is specified in relation to items as follows:

(1) "to gain a deep understand of theory rather than a superficial acquaintance with it": item a_1 = depth of understanding
(directional association: $\underline{u}(a_0a_1)'$)

(2) "to know something about all three theories rather than only one": item a_2 = knowledge of three theories
(directional association: $\underline{u}(a_0a_2)'$)

(3) "to keep within the allotted time (for a topic) rather than spending twice that amount at the expense of other topics": item a_3 = allotted time
(directional association: $\underline{u}(a_0a_3)'$)

(4) "to avoid theory which makes considerable demands on your mathematical ability": item a_4 = mathematics (directional dissociation: $\underline{u}(a_0a_4)'$)

The $\underline{u}(a_0a_i)'$ denote the strengths of the self to item relationships elicited from the subject by the use of four single rating scales, one for each item, ranging from zero to 15, and labelled "unimportant" above the zero end and "very important" above the other end.

The rating scales for the three "referent intentions" and the four "component aspects" of the decision situation to be, are separated such that the one set follows the other in the order given above. The seven evaluations obtained from the subject at this stage provide the data for the calculation of the estimates of dissonance aroused during pre-decision appraisal of each choice. It is on the basis of the estimates that the prediction of the subject's actual choice is made.

The next stage in the procedure is the presentation of the decision situation itself. This comprises three alternative courses of action, one of which is to be chosen by the subject. The decision situation is presented thus:

"When three contending theories exist, methods of presenting theory in seminars allow students the following three possibilities:

(1) to become superficially acquainted with all three theories in the allotted time;

(2) to get a deep understanding in the allotted time of only one theory, this making considerable demands on your mathematical ability;

(3) to obtain a deep understanding of all three theories, this making considerable demands on your mathematical ability, and taking twice the allotted time at the expense of other topics.

Which of these three possibilities would you choose?"

It is evident that the component aspects of the decision situation, which have been delineated from the total context and which have been earlier presented to the subject for his evaluation, are related to the "referent intention" associated with each decision alternative in one of two ways. They are either associated with or dissociated from the referent, the nature of the relationship being imposed by the decision alternative in question. For example, in relation to the <u>first</u> alternative, the referent intention is:

(A) "To become superficially acquainted with all three theories so that you would know something of the overall differences in formulation"

(the subject's ego-involvement in this referent "p" is given by G(p)); and, given the total context of the decision situation, the component aspects of this alternative are related to the above referent in the way indicated below:

(1) "depth of understanding" is dissociated from the referent p,
i.e. $\underline{u}(a_1 p)' = -1$;

(2) "knowledge of three theories" is associated with the referent p,
i.e. $\underline{u}(a_2 p)' = +1$;

(3) "allotted time" is associated with the referent p,
i.e. $\underline{u}(a_3 p)' = +1$;

(4) "mathematics" is dissociated from the referent p,
i.e. $\underline{u}(a_4 p)' = -1$.

These relationships, and corresponding ones for the other two decision alternatives, are summarized in Table 12.1, which gives the complete pre-decision appraisal of the three alternatives in terms of projected evaluations, which are indicated as dissonant or consonant with respect to the appropriate referent intention.

Note: A "plus" in column 2 of Table 12.1 denotes that the self would wish to associate with the relevant entity, a "minus" that the self would wish to dissociate from the relevant entity; the strength of the directional association or dissociation self to entity is denoted by the numerical quantity "e". A "plus" in column 3 denotes that the imposed relationship of the relevant entity to the appropriate referent is an association, a "minus" denotes that it is a dissociation; the strength of the relationship is assumed to be unity (i.e. complete association or dissociation) since the relationships are explicitly defined by the context of the decision situation. A "plus" in column 4

denotes that the relevant projected evaluation is a favourable one, a "minus" that it is an unfavourable one; the strength of the dissonant and consonant elements is again given by the numerical quantity indicated. The strengths of the ego-involvement in the referent intentions are given by the numerical quantities G_1, G_2, G_3; the "plus" indicates that the evaluation of the referent intention is favourable.

Table 12.1: The decision situation: decision alternative (1)

delineated entity:	activation of self's relationship to the delineated entity:	relationship of delineated entity to referent p imposed by decision alternative (1):	projected evaluation dissonant or consonant with respect to the referent p:
a_i	$\underline{u}(a_0a_i)'$	$\underline{u}(a_ip)'$	$\underline{u}(a_0a_i)'\underline{u}(a_ip)'$
depth of understanding	$+ e_1$	- 1.0	$- e_1$ dissonant
knowledge of three theories	$+ e_2$	+ 1.0	$+ e_2$ consonant
allotted time	$+ e_3$	+ 1.0	$+ e_3$ consonant
mathematics	$- e_4$	- 1.0	$+ e_4$ consonant

ego-involvement in referent intention "to become superficially acquainted with all three theories": $G(p) = +G_1$

(...contd.)

Table 12.1 (contd.): decision alternative (2)

delineated entity:	activation of self's relationship to the delineated entity:	relationship of delineated entity to referent q imposed by decision alternative (2):	projected evaluation dissonant or consonant with respect to the referent q:
a_i	$\underline{u}(a_0a_i)'$	$\underline{u}(a_iq)'$	$\underline{u}(a_0a_i)'\underline{u}(a_iq)'$
depth of understanding	$+ e_1$	+ 1.0	$+ e_1$ consonant
knowledge of three theories	$+ e_2$	- 1.0	$- e_2$ dissonant
allotted time	$+ e_3$	+ 1.0	$+ e_3$ consonant
mathematics	$- e_4$	+ 1.0	$- e_4$ dissonant
ego-involvement in referent intention "to understand one of the theories in depth":			$G(q) = +G_2$

(...contd.)

Table 12.1 (contd.): decision alternative (3)

delineated entity:	activation of self's relation-ship to the delineated entity:	relationship of delineated entity to referent r imposed by decision alternative (3):	projected evaluation dissonant or consonant with respect to the referent r:
a_i	$\underline{u}(a_0a_i)'$	$\underline{u}(a_ir)'$	$\underline{u}(a_0a_i)'\underline{u}(a_ir)'$
depth of understanding	$+ e_1$	+ 1.0	$+ e_1$ consonant
knowledge of three theories	$+ e_2$	+ 1.0	$+ e_2$ consonant
allotted time	$+ e_3$	- 1.0	$- e_3$ dissonant
mathematics	$- e_4$	+ 1.0	$- e_4$ dissonant

ego-involvementin referent intention "to understand all three theories in depth": $G(r) = + G_3$

After the presentation of the decision situation, and after the subject records his choice, follows the final stage of the procedure. This is concerned with obtaining the subject's post-decision reappraisal, and consists of obtaining the subject's re-evaluation of the same three "referent intentions" and the same four "component aspects" of the decision situation. The following precautions are taken to minimise the subject's reference to his first set of ratings:

(a) the subject's first evaluations are removed from him whilst he is deliberating about his decision;

(b) the subject is requested to bear in mind the choice he has just made when rating the post-decision scales;

(c) the order of presentation of the items to be evaluated is altered from that given before the decision;

(d) the choice of 0 - 15 (i.e. 16 point) scales is designed to mitigate the simple memory of the initial ratings, in addition to its other purpose to obtain fine discriminations.

The whole procedure from pre-decision appraisal to post-decision reappraisal is summarized in Table 12.2.

Table 12.2

DECISION EXPERIMENT: SEQUENCE OF EVENTS

Stage (1): Pre-decision appraisal
Without any prior knowledge of the decision situation, the subject gives his ratings of his intentions (G) and the elements of the situation (e). These ratings are independent of the decision situation.

STAGE (1)	Initial ratings of intentions	G_1	G_2	G_3	
Initial ratings of elements	STAGE (2): Decision situation The elements of the situation become dissonant (d) or consonant (c) with respect to the subject's intentions. The subject makes his decision.				Final ratings of elements
e_1		d	c	c	e_1
e_2		c	d	c	e_2
e_3		c	c	d	e_3
e_4		c	d	d	e_4
	Final ratings of intentions	G_1	G_2	G_3	STAGE (3)

Stage (3): Post-decision reappraisal
After having made his decision, the subject again gives his ratings of his intentions (G) and the elements of the situation (e). This time, however, the elements of the situation are dissonant or consonant with respect to the particular intention chosen to be pursued by the subject, according to the choice alternative he accepts. The dissonant or consonant nature of the elements is indicated in the central portion of the Table.

ANALYSIS OF DATA

From the theory in Chapter 8 and the contents of Table 12.1 which indicate the dissonant or consonant nature of the projected evaluations with respect to the appropriate referents, the following estimates of dissonance aroused during pre-decision appraisal of the decision alternatives may be given:

alternative (1), referent p

$$D(p) = G(p)r(p)Q(p)$$

$$= G_1 \frac{e_1}{e_2 + e_3 + e_4} \qquad 12.1$$

given in terms of the numerical quantities indicated in Table 12.1 (decision alternative (1)), and obtained for each subject (the initial set of ratings); it is assumed throughout that the perceived relevance of the referent intention to the decision alternative is unity, since the relevance is completely explicit in the experiment (i.e. here, $r(p) = 1$); $Q(p)$ is the ratio of the one dissonant element to the three consonant elements given in 12.1.

alternative (2), referent q (from Table 12.1: decision alternative (2))

$$D(q) = G(q)r(q)Q(q)$$

$$= G_2 \frac{e_2 + e_4}{e_1 + e_3} \qquad 12.2$$

alternative (3), referent r (from Table 12.1: decision alternative (3))

$$D(r) = G(r)r(r)Q(r)$$

$$= G_3 \frac{e_3 + e_4}{e_1 + e_2} \qquad 12.3$$

Estimates of the dissonance aroused during pre-decision appraisal of the rejection of the decision alternatives (i.e. with respect to the negation of the appropriate referents) may likewise be given:

rejection of alternative (1), negation of referent p

$$D(-p) = G(p)r(p) \frac{1}{Q(p)}$$

$$= G_1 \frac{e_2 + e_3 + e_4}{e_1} \qquad 12.4$$

rejection of alternative (2), negation of referent q

$$D(-q) = G(q)r(q) \frac{1}{Q(q)}$$

$$= G_2 \frac{e_1 + e_3}{e_2 + e_4} \qquad 12.5$$

rejection of alternative (3), negation of referent r

$$D(-r) = G(r)r(r) \frac{1}{Q(r)}$$

$$= G_3 \frac{e_1 + e_2}{e_3 + e_4} \qquad 12.6$$

Estimates of the dissonance aroused during pre-decision appraisal of the three choices may be given in terms of the summations:

<u>choice (1); pre-decision appraisal of acceptance of alternative (1), rejection of alternatives (2) and (3)</u>

$$D(p, -q, -r) = D(p) + D(-q) + D(-r) \qquad 12.7$$

i.e. the summation of 12.1, 12.5 and 12.6;

<u>choice (2); pre-decision appraisal of acceptance of alternative (2), rejection of alternatives (1) and (3)</u>

$$D(q, -p, -r) = D(q) + D(-p) + D(-r) \qquad 12.8$$

i.e. the summation of 12.2, 12.4 and 12.6;

<u>choice (3); pre-decision appraisal of acceptance of alternative (3), rejection of alternatives (1) and (2)</u>

$$D(r, -p, -q) = D(r) + D(-p) + D(-q) \qquad 12.9$$

i.e. the summation of 12.3, 12.4 and 12.5.

Thus, by inserting the pre-decision evaluations (c_1, c_2, c_3, e_1, e_2, e_3, and e_4) elicited from the subject into expressions 12.7, 12.8 and 12.9, estimates of the dissonance aroused during the individual's pre-decision appraisal of the three choices may be calculated. These estimates are shown for each of the 31 subjects in the first set of three columns of Table 12.3. On the basis of the principle of least dissonance applied to the pre-decision appraisal, the subject's choice is predicted (corresponding to the underlined estimate). The prediction is recorded in the first column of Table 12.4.

Table 12.3 Estimates of dissonance aroused during the predecision appraisal and post-decision reappraisal of the available choices

Subject:	Estimates of dissonance aroused during: pre-decision appraisal of choice No.			post-decision reappraisal of choice No.		
	(1)	(2)	(3)	(1)	(2)	(3)
01	19.20	26.67	26.67	17.51	27.01	22.24
02	27.74	54.21	42.80	24.60	39.48	43.39
03	25.29	55.54	44.22	17.14	63.11	58.80
04	42.07	76.00	58.60	28.39	86.65	84.25
05	29.43	52.92	42.25	26.37	46.25	43.85
06	31.78	43.66	34.59	42.59	47.82	43.55
07	33.86	43.94	33.84	31.09	57.83	58.94
08	19.28	52.91	59.57	19.24	58.04	52.61
09	22.49	33.20	22.30	25.10	48.00	34.83
10	37.34	69.34	61.34	30.38	78.86	69.98
11	34.76	51.50	39.95	25.59	77.05	68.26
12	33.21	43.75	39.30	30.89	43.64	40.00
13	28.80	41.70	30.30	19.15	60.20	51.35
14	30.82	58.46	51.17	29.25	65.80	60.45
15	36.26	57.66	48.85	35.15	61.72	51.70
16	19.68	108.02	98.10	24.16	98.15	91.72
17	41.46	59.86	49.33	29.70	65.35	59.10
18	30.63	34.01	24.31	25.06	18.02	25.82
19	86.13	90.01	33.20	62.29	48.57	49.65
20	40.33	34.50	21.66	37.61	25.80	28.00

(contd.)

Table 12.3 (contd.)

	(1)	(2)	(3)	(1)	(2)	(3)
21	49.98	55.43	24.53	65.98	79.17	18.18
22	51.46	61.70	28.89	52.50	59.15	25.91
23	69.30	79.48	23.91	incomplete data		
24	91.20	90.51	24.00	127.69	128.16	21.00
25	41.32	64.86	52.49	38.36	55.17	38.32
26	45.47	44.14	22.00	v.large	v.large	12.44
27	74.80	81.52	30.70	77.65	76.45	28.36
28	101.88	90.76	16.89	113.76	112.75	12.43
29	39.39	52.08	28.76	41.80	45.20	28.48
30	35.19	48.67	28.18	46.40	59.55	32.81
31	86.70	97.76	16.64	73.04	93.40	21.10

Table 12.3: Notes

a) The term "choice" refers to the "acceptance of the one alternative and the rejection of the other two". It is to be distinguished from the term "chosen alternative" which refers to the accepted alternative only.

b) The least dissonance aroused is underlined in each case. In the cases of subjects 07 and 09 for whom two estimates differ by less than 0.50 unit, both estimates are underlined.

c) The estimates for dissonance are comparable only within subjects and not across subjects. For example, for subject 01 the quantitative units in which the estimates are given are comparable with respect to his appraisal of the three choices, and are comparable with respect to his pre-decision appraisal and post-

decision reappraisal. However, it cannot be assumed that the quantitative units in which the estimates are given for subject 01 are the same as those in which the estimates are given for subject 02. In other words, it is not legitimate to say that the dissonance aroused with respect to choice (1) is greater for subject 02 than for subject 01.

It will be noted that the subjects are labelled 01 to 31 so that they may be readily identified from table to table. For convenience they have been sorted into four groups as will be evident on inspection of the tables.

In the case of subjects 07 and 09 where ties in estimates exist, predictions are based on the conditions associated with "decision reversal"; these predictions will receive further attention in due course.

The second set of three columns in Table 12.3 give the estimates of dissonance aroused during the immediate post-decision reappraisal of the three choices, and are calculated using the same expressions 12.7, 12.8 and 12.9, but inserting the post-decision evaluations elicited from each subject. Applying again the principle of least dissonance, the subject's choice is once more "predicted" (again corresponding to the underlined estimate) and is recorded in the second column of Table 12.4.

The question of what "prediction" based on post-decision evaluations means, is an interesting one. According to the theory presented in Chapter 8, post-decision reappraisal of the decision situation occurs in such a way that, in effect, it conforms better to the individual's actual choice than did his pre-decision appraisal. Thus, it would be expected that "predictions" based on post-decision evaluations would be better than those based on pre-decision evaluations, which, in fact, is the case.

However, if an observer wishes to predict the subject's decision before his confrontation with the decision situation, then clearly a prediction based on pre-decision evaluations would be the only possible one. But, should the observer wish to establish what decision the subject has actually made (i.e. after the decision) without asking him directly, then he would be able to make a prediction on the basis of post-decision evaluations, one which is likely to be more accurate than if it had been based on pre-decision evaluations.

Table 12.4 Comparison of predicted choices with actual choices

Subject:	Predicted choice based on the principle of least dissonance (refer to Table 12.3 for estimates of dissonance):		Actual choice:	Predicted choice based on simple preferences expressed by evaluations of the "referent intentions":
	pre-decision appraisal	post-decision reappraisal		
01	1	1	1	2
02	1	1	1	3
03	1	1	1	3
04	1	1	1	3
05	1	1	1	3
06	1	1	1	3
07	1*	1	1	3
08	1	1	1	3
09	1*	1	1	3
10	1	1	1	1
11	1	1	1	3
12	1	1	1	3
13	1	1	1	1
14	1	1	1	1
15	1	1	1	1
16	1	1	1	3
17	1	1	1	1
18	3**	2	2	2
19	3**	2	2	3
20	3**	2	2	3

(contd.)

Table 12.4 (contd.)

21	3	3	3	3
22	3	3	3	3
23	3	(3)***	3	3
24	3	3	3	3
25	1**	3	3	3
26	3	3	3	3
27	3	3	3	3
28	3	3	3	3
29	3**	3	1	3
30	3**	3	1	3
31	3**	3	1	3

Table 12.4:Notes

*: In the two cases of ties between the estimates of least dissonance aroused with respect to the pre-decision appraisal of two choices, prediction is based on the "decision reversal" principle (see text).

**: In the seven cases in which prediction based on the least dissonance principle is not successful, the actual choices of all conform to the two necessary conditions for "decision reversal". However, in three cases (29, 30 and 31) post-decision reappraisal does not operate in conformity with "decision reversal" as it does in the other four cases.

***: Although the data for post-decision reappraisal is incomplete in this case, sufficient data exists (about post-decision evaluations of the "component aspects" of the situation) to make the prediction with confidence.

Therefore, and this is the point that is beingmade, it is legitimate to regard both pre-decision and post-decision analyses as predictive of the actual decision, dependentupon the purpose of the observer.

In the experiment, the purpose of which is to test the decision theory, both predictions are of interest and are evaluated in terms of the subject's actual choice, which is recorded in column three of Table 12.4.

The final column of Table 12.4 records predictions that are not based on the decision theory, but which are based simply on the association of that "referent intention", evaluated as the most desirable by each subject, to the relevant decision alternative (i.e. based on whichever of the G_1, G_2 or G_3 is the greatest).

From Table 12.4 it is seen that 24 out of 31 cases (nearly 80%) are predicted correctly on the basis of the principle of least dissonance applied to the estimates of dissonance aroused during pre-decision appraisal, that 28 out of 31 cases (90%) are predicted correctly on the basis of the principle of least dissonance applied to estimates of dissonance aroused during post-decision reappraisal, and that only 14 out of 31 cases (45%) are predicted correctly on the basis of simple preferences.

HYPOTHESIS 1: PREDICTION OF CHOICES

Hypothesis (1) states that: the choice made by an individual when confronted with a decision situation is determined in accordance with

the principle of least dissonance following on the pre-decision appraisal of the available alternatives, except in a case of "decision reversal".

Since decision reversal cannot generally be predicted, it is necessary to restate the hypothesis in order to test it. It is restated as follows:

The choices predicted on the basis of the principle of least dissonance will be predicted correctly to a significantly greater degree than by chance.

This hypothesis is to be tested in relation to (1) predictions based on the principle of least dissonance applied to pre-decision estimates of dissonance, and (2) predictions based on the principle of least dissonance applied to post-decision estimates of dissonance. In addition, and by comparison with the theoretical decision principle, a test of significance will be made of predictions based on a "naive" analysis of simple preferences which correspond to the subjects' referent intentions.

Table 12.5 indicates the correspondence of actual choices to the predictions based on the principle of least dissonance applied to pre-decision estimates, Table 12.6 likewise the correspondence to predictions based on the principle of least dissonance applied to post-decision estimates, and Table 12.7 the correspondence to "naive" predictions based on simple preferences. The contents of these tables are derived directly from Table 12.4.

Table 12.5 Predictions based on the principle of least dissonance applied to pre-decision estimates

		Predicted choice: (1)	(2)	(3)	Totals: "actual choices"
Actual choice:	(1)	17	0	3	20
	(2)	0	0	3	3
	(3)	1	0	7	8
Totals: "predicted choices"		18	0	13	31

Table 12.6 Predictions based on the principle of least dissonance applied to post-decision estimates

		Predicted choice: (1)	(2)	(3)	Totals: "actual choices"
Actual choice:	(1)	17	0	3	20
	(2)	0	3	0	3
	(3)	0	0	8	8
Totals: "predicted choices"		17	3	11	31

Table 12.7 "Naive" predictions based on simple preferences

		Predicted choice: (1)	(2)	(3)	Totals: "actual choices"
Actual choice:	(1)	5	1	14	20
	(2)	0	1	2	3
	(3)	0	0	8	8
Totals: "predicted choices"		5	2	24	31

The hypothesis to be tested for each set of predictions (Tables 12.5, 12.6 and 12.7) is that, of the predicted choices, those predicted correctly have been done so to a significantly greater degree than by chance.

The way in which this hypothesis canbe tested follows from these considerations:

There is a total of N subjects, of which n_1, n_2, and n_3 are observed to make choice (1), choice (2) and choice (3) respectively (i.e. $n_1 + n_2 + n_3 = N$).

Suppose, on the basis of any rationale, a_1 subects are predicted as making choice (1), a_2 predicted as making choice (2), and a_3 predicted as making choice (3).

What is the expectation that these a_1, a_2, and a_3 instances will have been predicted correctly by chance?

Consider those a_1 instances for whom choice (1) is predicted. If every subject were observed to choose (1) then each of these a_1 instances would have been predicted correctly by chance, since these a_1 would of necessity be included in all those choosing (1). That is, the number of correct predictions of choice (1) expected by chance would be a_1. If no subjects were observed to choose (1) then none of these a_1 instances could have been predicted correctly by chance. That is, in this chase, the number of correct predictions of choice (1) expected by chance would be zero. It therefore follows that, when the proportion of the total number of subjects observed to choose (1) is q_1, the number of correct predictions of choice (1) expected by chance would be:

$$E(1)_{correct} = q_1 a_1$$

$$= \frac{n_1}{N} a_1$$

where n_1/N is the proportion of n_1 subjects observed to choose (1) to N the total number of subjects.

The number of incorrect predictions of choice (1) expected by chance would therefore be given by:

$$E(1)_{incorrect} = (1 - q_1)a_1$$

$$= (1 - \frac{n_1}{N}) a_1$$

Consider, in addition, those a_2 instances for whom choice (2) is predicted and those a_3 instances for whom choice (3) is predicted. When the proportion of the total number of subjects observed to choose (2) is q_2, and the proportion observed to choose (3) is q_3, it follows in the same way that:

the number of correct and the number of incorrect predictions of choice (2) expected by chance are given by

$$E(2)_{correct} = q_2 a_2$$

$$= \frac{n_2}{N} a_2 \text{ , and}$$

$$E(2)_{incorrect} = (1 - q_2)a_2$$

$$= (1 - \frac{n_2}{N})a_2 ;$$

the number of correct and the number of incorrect predictions of choice (3) expected by chance are given by

$$E(3)_{correct} = q_3 a_3$$

$$= \frac{n_3}{N} a_3, \text{ and}$$

$$E(3)_{incorrect} = (1 - q_3)a_3$$

$$= (1 - \frac{n_3}{N})a_3$$

The Chi Square test may be used to test whether, of the predictions

based on each of the three rationales (i.e. the principle of least dissonance applied both to pre- and post-decision estimates, and the "naive" predictions), the observed numbers of correct and incorrect predictions differ significantly from those given above expected by chance, and, in particular, to test the hypothesis that those predicted correctly have been done so to a significantly greater degree than by chance.

Note that, since $q_1 = n_1/N$, $q_2 = n_2/N$, and $q_3 = n_3/N$ feature in the expressions above for the expected frequencies, the actual distribution of choies (i.e. n_1 choice (1)'s, n_2 choice (2)'s, and n_3 choice (3)'s) made by the N subjects is taken into account in calculating the expected frequencies. That is, no a priori assumption is made about the probabilities of a subject choosing (1), (2) or (3).

Data

The total number of subjects $N = 31$.

The actual distribution of choices made by these subjects is:

no. of choice (1)'s $n_1 = 20$

no. of choice (2)'s $n_2 = 3$

no. of choice (3)'s $n_3 = 8$

(see Tables 12.5, 12.6 and 12.7)

Thus, the proportions of subjects making the respective choices are given by:

$$q_1 = \frac{n_1}{N} = \frac{20}{31} = 0.645$$

$$q_2 = \frac{n_2}{N} = \frac{3}{31} = 0.097$$

$$q_3 = \frac{n_3}{N} = \frac{8}{31} = 0.258$$

Note that these proportions depend on the actual distribution of choices made and remain the same whatever the rationale behind the predictions.

Chi Square tests of significance

Rationale (1): predictions based on the decision principle applied to pre-decision estimates of dissonance

The numbers of correct predictions are given along the diagonal of Table 12.5. The numbers of incorrect predictions are given by summing the remaining cells under the appropriate predicted choice. Table 12.8 summarizes the results, and, in addition gives in brackets the frequences of correct and incorrect predictions expected by chance, given the actual distribution of choices made.

Table 12.8: Predictions based on the decision principle applied to pre-decision estimates of dissonance

	Predicted choice: (1)	(2)	(3)
No. of correct predictions	17 (11.60)	0 (0)	7 (3.36)
No. of incorrect predictions	1 (6.40)	0 (0)	6 (9.64)
Totals: "predicted choices"	18 (a_1)	0 (a_2)	13 (a_3)

expected frequencies are given in brackets, i.e. $E(1)_{correct} = q_1 a_1$, $E(1)_{incorrect} = (1 - q_1)a_1$, etc.

Combining the cells of Table 12.8, the overall numbers of correct and incorrect predictions, together with the corresponding numbers expected by chance, are as given below:

No. of correct predictions:	24	(14.96)
No. of incorrect predictions:	7	(16.04)

The Chi Square test confirms the hypothesis that, of the predicted choices, those predicted correctly have been done so to a significantly greater degree than by chance, i.e.

Chi-square = 9.45 (corrected for continuity),
df = 1, p = 0.001 one tail test.

Rationale (2): predictions based on the decision principle applied to post-decision estimates of dissonance

The numbers of correct predictions, in this case, are given along the diagonal of Table 12.6. Appropriate summations of the remaining cells of Table 12.6 give the numbers of incorrect predictions. These results are summarized in Table 12.9, in which the corresponding expected frequencies are given in brackets.

Table 12.9: Predictions based on the decision principle applied to post-decision estimates of dissonance

	Predicted choice: (1)	(2)	(3)
No. of correct predictions	17 (10.96)	3 (0.29)	8 (2.81)
No. of incorrect predictions	0 (6.04)	0 (2.71)	3 (8.19)
Totals: "predicted choices"	17 (a_1)	3 (a_2)	11 (a_3)

expected frequencies are given in brackets, i.e. $E(1)_{correct} = q_1 a_1$, $E(1)_{incorrect} = (1 - q_1)a_1$, etc.

Combining the cells of Table 12.9, the overall numbers of correct and incorrect predictions, together with the corresponding numbers expected by chance, are as given below:

No. of correct predictions: 28 (14.06)

No. of incorrect predictions: 3 (16.94)

With respect to the predictions based on the decision principle applied to the post-decision estimates of dissonance, the Chi Square test confirms the hypothesis that, of the predicted choices, those predicted correctly have been done so to a significantly greater degree than by chance, i.e.

Chi-square = 23.5 (corrected for continuity),

df = 1, p less than 0.001 one tail test.

Rationale (3): predictions based on a "naive" analysis of simple preferences

The application of the Chi Square test of significance shows that the success rates of predictions based on the principle of least dissonance are highly significant, both when the predictions were derived from pre-decision estimates of dissonance and when they were derived from post-decision estimates. However, it may be thought that the prediction of a choice could be made more simply on the basis of the similarity between the "referent intentions" and the decision alternatives, that is, on the basis of the similarities between:

the referent intention (A) -

"To become superficially acquainted with all three theories so that you would know something of the overall differences in formulation"

and the decision alternative (1) -
"To become superficially acquainted with all three theories in the allotted time";
the referent intention (B) -
"To understand one of the theories in depth so that you would appreciate its special features"
and the decision alternative (2) -
"To get a deep understanding in the allotted time of only one theory, this making considerable demands on your mathematical ability";
the referent intention (C) -
"To understand all three theories in depth so that you would appreciate the special features of each"
and the decision alternative (3) -
"To obtain a deep understanding of all three theories, this making considerable demands on your mathematical ability and taking twice the allotted time at the expense of other topics".

Thus, according to this "naive" analysis, predictions of choices would be based on the preferences expressed in the pre-decision ratings of desirability of the referent intentions. The referent intention that is rated the highest would be taken to predict the decision alternative that corresponds to that intention.

The correspondence of such "naive" predictions with actual choices has already been given in Table 12.7. The numbers of correct predictions

are given along the diagonal of that table, and the numbers of incorrect predictions are obtained by summing the remaining cells under the appropriate predicted choice. Table 12.10 summarises the numbers of correct and incorrect predictions; the corresponding frequencies of correct and incorrect predictions expected by chance are given in brackets. As before, the Chi Square test is used to test whether the success rate of the predicted choices is better than that expected by chance.

Table 12.10: "Naive" predictions based on simple preferences

	Predicted choice: (1)	(2)	(3)
No. of correct predictions:	5 (3.22)	1 (0.19)	8 (6.19)
No. of incorrect predictions	0 (1.78)	1 (1.81)	16 (17.81)
Totals: "predicted choices"	5 (a_1)	2 (a_2)	24 (a_3)

expected frequencies are given in brackets, i.e. $E(1)_{correct} = q_1 a_1$, $E(1)_{incorrect} = (1 - q_1)a_1$, etc.

The overall numbers of correct and incorrect predictions are obtained by combining the cells of Table 12.10. They, together with the corresponding numbers expected by chance, are given below:

No. of correct predictions: 14 (9.60)

No. of incorrect predictions: 17 (21.40)

The Chi Square test applied to the above data on "naive" predictions, does not support the hypothesis that, of the predicted choices, those predicted correctly have been done so to a significantly greater degree than by chance, i.e.

Chi-square = 2.29 (corrected for continuity),

df = 1, not significant - one tail test.

Thus, predictions based on the "naive" analysis are not significantly more successful than would be expected by chance, whereas those based on the principle of least dissonance are so to a considerable degree.

This conclusion emphasizes a theoretically important feature of the decision process: the decision made by an individual does not necessarily conform to what is his most desirable intention, even when, by choosing the appropriate decision alternative, the pursuit of that intention is possible. The lack of success of the "naive" predictions indicates that, in this experimental decision situation, many subjects choose to pursue one of their less desirable intentions. It is obvious that this is due to the circumstances of the decision situation, which "force" these subjects to make decisions which might be considered to be at variance with their intentions. Thus it is that the influence of the environment can lead to the "unexpected"

course of action being taken. It is precisely this interaction between the psychological matrix of the individual and the circumstances of the environment that is taken into account by the decision theory presented in Chapter 8 and successfully validated here.

Fisher tests of significance

For completeness, it remainsto be shown that the success rates of predictions based on the principle of least dissonance are not only significantly better than those expected by chance, but also significantly better than that based on the "naive" analysis of simple preferences. Table 12.11 gives the number of correct and incorrect predictions obtained on the basis of the principle of least dissonance applied to pre-decision estimates, compared with the corresponding numbers based on "naive" considerations. Table 12.12 does the same for predictions based on the decision principle applied to post-decision estimates of dissonance.

Table 12.11

	No. of predictions: correct	incorrect	Totals
Based on pre-decision estimates of dissonance	24	7	31
Based on "naive" preferences	14	17	31
Totals	38	24	

Table 12.12

	No. of predictions: correct	incorrect	Totals
Based on post-decision estimates of dissonance	28	3	31
Based on "naive" preferences	14	17	31
Totals	42	20	

In both cases, the Fisher test is applied to test whether the number of correct predictions obtained by means of the decision principle is significantly greater than that obtained by means of the "naive" analysis. In both cases, the theoretical predictions are significantly better than the naive ones (p less than 0.01 in both cases).

HYPOTHESIS 2: "DECISION REVERSAL"

Hypothesis (2) states that:

In a case of "decision reversal", the choice made by the individual is determined in accordance with two necessary conditions. These conditions are that, for the choice the pre-decision appraisal of which results in the least dissonance compared with the other available choices,

(i) the dissonance aroused with respect to one of the alternatives tending toward rejection, is greater than

the dissonance aroused with respect to the alternative tending toward acceptance,

(ii) the dissonance aroused by the appraisal of the possible acceptance of that alternative in question tending toward rejection, is less than that aroused by the appraisal of its possible rejection.

The conditions may be readily translated into algebraic terms as follows. In the three-alternative situation, the estimates for pre-decision dissonance aroused with respect to each choice are given by:

for choice (1), $D(p, -q, -r) = D(p) + D(-q) + D(-r)$;

for choice (2), $D(q, -p, -r) = D(q) + D(-p) + D(-r)$;

for choice (3), $D(r, -p, -q) = D(r) + D(-p) + D(-q)$.

There are, of course, three possibilities as to which of these estimates is the smallest. For the sake of an example, however, assume $D(r, -p, -q)$ to be the smallest, so that, according to the principle of least dissonance, choice (3) would be predicted in the absence of "decision reversal". Then, the necessary conditions for decision reversal to occur away from the acceptance of alternative (3) towards the acceptance of alternative (1), are given from hypothesis 2 as:

(i) $D(-p)$ is greater than $D(r)$

(and also that $D(-p)$ is greater than $D(-q)$)*

* The conditions in brackets state simply that whichever of the two alternatives tending toward rejection results in the greater dissonance, becomes the more salient, hence the one prone to decision reversal.

(ii) D(-p) is greater than D(p).

Likewise, the necessary conditions for decision reversal to occur away from the acceptance of alternative (3) towards the acceptance of alternative (2) are given from hypothesis 2 as:

(i) D(-q) is greater than D(r)

(and also that D(-q) is greater than D(-p))*

(ii) D(-q) is greater than D(q).

The respective necessary conditions for decision reversal to occur away from the acceptance of alternative (1) (i.e. D(p, -q, -r) the smallest estimate) towards the acceptance of either alternative (2) or alternative (3), can be specified in a similar manner; likewise for decision reversal away from the acceptance of alternative (2) (i.e. D(q, -p, -r) the smallest estimate) towards the acceptance of either alternative (1) or alternative (3).

It is stressed here that, though conditions (i) and (ii) are regarded as necessary, they are not regarded also as sufficient conditions for decision reversal. Thus, the fact that the two conditions are met, does not mean that decision reversal will actually occur. Indeed, the necessary and sufficient conditions would have to include the breakdown of the appraisal of the relevant choice in terms of the accepted and rejected alternatives, into one restricted to the single alternative featuring as the decision reversal.

* For footnote, see previous page.

An analysis of the seven cases in which the predictions based on the least dissonance principle applied to pre-decision estimates proved incorrect (see Table 12.4), reveals that the two necessary conditions for decision reversal are satisfied unequivocally in six instances and somewhat equivocally in the seventh.

Thus, for subjects 19 and 20, for whom the estimate D(r, -p, -q) is the smallest, it is found that

(i) D(-q) is greater than D(r)

(also D(-q) is greater than D(-p)) and

(ii) D(-q) is greater than D(q).

Therefore, the necessary conditions are satisfied for decision reversal away from alternative (3) towards alternative (2). The somewhat equivocal case is subject 18 for whom the first condition above is satisfied, but for whom the estimate of D(-q) is the same as the estimate of D(q).

For subjects 29, 30 and 31, for whom the estimate D(r, -p, -q) is again the smallest, it is found that

(i) D(-p) is greater than D(r)

(also D(-p) is greater than D(-q)) and

(ii) D(-p) is greater than D(p).

That is, the necessary conditions are satisfied for decision reversal away from alternative (3) towards alternative (1).

For the remaining subject (No. 25) the estimate D(p, -q, -r) is the smallest. Analysis reveals that, for subject 25

(i) D(-r) is greater than D(p)

(also D(-r) is greater than D(-q)) and

(ii) D(-r) is greater than D(r).

That is, the necessary conditions are satisfied for decision reversal away from alternative (1) towards alternative (3). For subjects 07 and 09, for whom ties exist between estimates of least dissonance aroused during pre-decision appraisal, the conditions for decision reversal provide ameans of predicting their choices.

For both subjects the two smallest, and tied, estimates of dissonance are D(p, -q, -r) and D(r, -p, -q). In both cases the two conditions exist for decision reversal away from the acceptance of alternative (1) toward the acceptance of alternative (3), i.e.

(i) D(-r) is greater than D(p)

(and D(-r) is also greater than D(-q)) and

(ii) D(-r) is greater than D(r).

In addition, the two conditions exist in both instances for decision reversal away from the acceptance of alternative (3) toward the acceptance of alternative (1), i.e.

(i) D(-p) is greater than D(r)

(also D(-p) is greater than D(-q)) and

(ii) D(-p) is greater than D(p).

However, in both cases:

the ratio $\frac{D(-p)}{D(p)}$ is greater than the ratio $\frac{D(-r)}{D(r)}$.

In other words, the dissonance aroused by the rejection of alternative (1) compared with the dissonance aroused by the acceptance of alternative (1), is greater than: the dissonance aroused by the rejection of alternative (3) compared with the dissonance aroused by the acceptance of alternative (3). Therefore, the most advantageous outcome on the basis of the two possibilities of "decision reversal" is the acceptance of alternative (1), hence, this is the one predicted as the chosen alternative for both subjects. As is seen from Table 12.4 these predictions are confirmed.

The evidence obtained for hypothesis 2 in regard to "decision reversal" is therefore substantial. Two correct predictions are made on the basis of the hypothesis in the limiting case of ties in the smallest estimates of dissonance (such ties would therefore seem to provide one instance in which a sufficient condition for "decision reversal" also obtains). Six out of seven cases in which predictions on the basis of the principle of least dissonance are not confirmed satisfy hypothesis 2 unequivocally and the seventh somewhat equivocally.

After the occurrence of decision reversal and after the actual (reversed) decision has been made, it would be expected that post-decision reappraisal would operate such that the component aspects of the decision situation become re-evaluated to conform to the decision actually made. From Tables 12.3 and 12.4 it is seen that this is true for subjects 07, 09, 18, 19, 20 and 25, for whom the least dissonance aroused during post-decision reappraisal corresponds to the choice

actually made by each.

However, for subjects 29, 30 and 31 no such reappraisal appears to occur, and it is doubtful in these cases whether the evaluations elicited from these subjects fully represent their interpretations of the decision situation. It is strongly suspected that these individuals have adduced additional elements to the situation which, being unspecified, would not have been recorded, yet which would be responsible for the individuals making decisions which seem so out of keeping with the evaluations actually recorded. For example, subject 29 chooses alternative (1):

"to become superficially acquainted with all three theories in the allotted time"

despite the fact that he evaluates "referent intention" (0):

"To understand all three theories in depth so that you would appreciate the special features of each"

as the most desirable (i.e. at 14 on the 0 to 15 scale), despite his high evaluation of "deep understanding" (13) and his low evaluation of "keeping within the allotted time" (3). If it is suspected that his evaluation of "avoidance of mathematics" (8) is responsible for his decision, then his re-evaluation of that item down to a negligible amount (3) would be incomprehensible.

The other two subjects, 30 and 31, appear to be equally intractable, and it can reasonably be assumed that other untapped factors feature in their appraisals of the decision situation. In view of the degree

to which they are atypical and the extent to which they diverge from the other 90% of the subjects, they are excluded from the rest of the analysis which is concerned, not with prediction of choices, but with the reappraisal process.

HYPOTHESIS 3: POST-DECISION REAPPRAISAL

Hypothesis (3) states that:

The post-decision reappraisal of the actual choice made by the individual results in an increased psychological efficiency in comparison with that consequent upon the pre-decision appraisal of the same choice, in accordance with the theoretical hypothesis of processes operating to maximize psychological efficiency.

For the three choices, the psychological efficiencies associated with their appraisal are given by:

for choice (1)

$$\text{psychological efficiency} = \frac{G_1 + G_2 + G_3}{G_1 + G_2 + G_3 + D(p, -q, -r)} \qquad 12.10$$

in which $D(p, -q, -r)$ is given by expression 12.7 (c.f. expressions 8.46, 8.47, and 8.48 in Chapter 8);

for choice (2)

$$\text{psychological efficiency} = \frac{G_1 + G_2 + G_3}{G_1 + G_2 + G_3 + D(q, -p, -r)} \qquad 12.11$$

in which $D(q, -p, -r)$ is given by expression 12.8;

for choice (3)

$$\text{psychological efficiency} = \frac{G_1 + G_2 + G_3}{G_1 + G_2 + G_3 + D(r, -p, -q)} \qquad 12.12$$

in which $D(r, -p, -q)$ is given by expression 12.9.

The estimates for psychological efficiency accompanying the pre-decision appraisal of the choice actually made, and the post-decision reappraisal of that choice, are tabulated for each subject in Table 12.13. (The estimates are derived by substituting the pre-decision and the post-decision evaluations elicited from each subject into the appropriate one of the expressions 12.10, 12.11, 12.12 above.)

Table 12.13 Estimates of psychological efficiencies accompanying the pre-decision appraisal and the post-decision reappraisal of the choice actually made

Subject:	Actual choice:	Estimate of psychological efficiency (%) with respect to the actual choice made:	
		Pre-decision appraisal	Post-decision reappraisal
01	1	53.4	54.5
02	1	53.6	54.1
03	1	53.4	62.0
04	1	50.0	58.8
05	1	53.6	54.8
06	1	46.8	44.4
07	1	45.3	53.7
08	1	55.5	58.4
09	1	47.1	50.9
10	1	51.1	56.2
11	1	48.7	58.5
12	1	45.7	47.5
13	1	49.3	60.2
14	1	50.9	53.1
15	1	48.4	49.2
16	1	65.9	60.5
17	1	46.5	54.8
18	2	40.3	52.6
19	2	29.7	43.9
20	2	42.0	47.1

Table 12.13 (contd.)

21	3	55.0	62.3
22	3	54.1	55.3
23	3	54.8	?
24	3	55.6	58.8
25	3	42.6	45.6
26	3	50.0	68.5
27	3	52.6	63.5
28	3	57.7	64.9

The change in psychological efficiency for each subject, from pre-decision appraisal to post-decision reappraisal of his actual choice, is recorded in the first column of Table 12.14 (the relevance of the other columns will be dealt with shortly). It is seen that, in every case but two, psychological efficiency associated with the choice made has increased. Hypothesis 3 is therefore strongly supported. In one of the cases of a decrease, subject 16, it is seen that the pre-decision psychological efficiency was exceptionally high at 65.9%, which may be evidence of an unrealistically hopeful appraisal before the decision, that becomes more realistic after it. (It should be noted that, whereas the quantitative estimates for dissonance are not comparable from individual to individual, the quantitative estimates for psychological efficiency are comparable across individuals.)

In addition to the prediction of an increase in psychological efficiency associated with the choice made, a number of dependent effects are expected to follow from hypothesis 3. These are:

(a) the dissonance associated with the actual choice will tend to be reduced,

(b) the psychological efficiency with respect to the chosen alternative will tend to be increased,

(c) the dissonance associated with the chosen alternative will tend to be reduced, and

(d) the magnitude of dissonant elements in relation to the chosen alternative will tend to be reduced and that of the consonant elements will tend to be increased.

Table 12.14 Comparison of post-decision reappraisal with pre-decision appraisal

The changes in psychological efficiencies and in dissonances from pre-decision appraisal to post-decision reappraisal are derived from Tables 12.13, 12.3, 12.15 and 12.16 in that order, and are indicated simply as increases (i) or decreases (d).

Subject:	With respect to actual choice:		With respect to chosen alternative:	
	psychological efficiency	dissonance	psychological efficiency	dissonance
01	i	d	i	d
02	i	d	d	i
03	i	d	i	d
04	i	d	i	d
05	i	d	d	i
06	d	i	d	i
07	i	d	i	i
08	i	0	i	d
09	i	i	i	i
10	i	d	i	d
11	i	d	i	d
12	i	d	i	d
13	i	d	i	d
14	i	d	i	d
15	i	d	i	d
16	d*	i	d	i
17	i(i: 15)	d(d: 13)	i(i:13)	d(d: 11)

* Initial psychological efficiency very high

(contd.)

Table 12.14 (contd.)

18	i	d	i	d
19	i	d	i	d
20	i	d	i	d
21	i	d	i	d
22	i	d	i	d
23	incomplete data			
24	i	d	i	d
25	i	d	i	d
26	i	d	i	d
27	i	d	i	d
28	i	d	i	d

As is indicated in the following tables and graphs, these expected effects all receive general confirmation. Table 12.14, columns 2, 3 and 4, summarize the changes relevant to the expected tendencies (a), (b) and (c) cited above. These are derived from Table 12.3 for column 2, and from the tables to follow, Table 12.15 for column 3 and Table 12.16 for column 4. Figures 12.2 to 12.7 illustrate the changes in dissonant and consonant elements as a consequence of the choice made, and are relevant to the expected tendencies cited in (d) above.

Table 12.15, in which post-decision estimates of psychological efficiency with respect to the chosen alternative only (as opposed to the choice made, which includes the rejected alternatives) are compared with pre-decision estimates, is included for interest rather

than for any direct bearing on the decision theory of Chapter 8. An increase in psychological efficiency with respect to the chosen alternative is regarded as the consequence of an increase in psychological efficiency with respect to the choice made, rather than the consequence of the process of maximizing psychological efficiency operating with respect to the alternative alone. This view is borne out by the fact that in two cases (subjects 02 and 05) for whom increases in psychological efficiency with respect to the choice made occur, there are decreases with respect to the chosen alternative.

Of theoretical interest, however, is the high level of post-decision psychological efficiency with respect to the chosen alternative, as compared with the level of post-decision psychological efficiency with respect to the choice made (compare Tables 12.13 and 12.15). This result is provocative in suggesting an explanation for the normal rapid turning away from the rejected alternatives towards a concentration on the alternative actually chosen after a decision. This explanation, on the basis of the theory of processes operating to maximize psychological efficiency, is that post-decision attention to the rejected alternatives becomes relinquished in favour of the chosen alternative, when this enables psychological efficiency to be increased, as is so in the present case.

Table 12.15 Estimates of psychological efficiencies accompanying the pre-decision appraisal and the post-decision reappraisal of the chosen alternative

Subject:	Chosen alternative:	Estimate of psychological efficiency (%) with respect to the chosen alternative:	
		pre-decision appraisal	post-decision reappraisal
01	1	62.5	63.8
02	1	74.3	70.3
03	1	73.8	80.9
04	1	69.2	79.6
05	1	71.1	68.6
06	1	67.8	61.8
07	1	68.2	72.1
08	1	76.7	79.2
09	1	67.6	71.4
10	1	72.7	77.8
11	1	68.2	79.1
12	1	69.7	70.6
13	1	59.4	76.5
14	1	71.8	75.7
15	1	68.3	70.4
16	1	84.2	83.0
17	1	70.3	77.0
18	2	50.0	58.3
19	2	54.1	69.2
20	2	57.1	67.3
21	3	69.8	78.9
22	3	71.9	72.7
23	3	80.6	?

(contd.)

Table 12.15 (contd.)

24	3	83.3	88.2
25	3	61.4	64.5
26	3	68.2	100.0
27	3	81.3	81.5
28	3	85.2	87.5

Table 12.16 gives the estimates from which are derived the changes in dissonance from pre-decision appraisal to post-decision reappraisal of the chosen alternative, summarized in Table 12.14. It also records the estimates of pre-decision dissonance aroused with respect to each alternative. These are included to show the inferior predictive value of a possible alternative method of predicting the actual choice, based on a principle of least dissonance applied to the appraisal of alternatives (i.e. corresponding to the underlined values), rather thanto the appraisal of choices considered in terms of the potential rejection of certain alternatives as well as the potential acceptance of one.

Table 12.16 Estimates of dissonance aroused during the pre-decision appraisal of each alternative (possible acceptance) and during the post-decision reappraisal of the chosen alternative

Subject:	Chosen alternative:	Estimates of dissonance aroused during: pre-decision appraisal of alternative No.			post-decision reappraisal of chosen alternative
		(1)	(2)	(3)	
					(1)
01	1	4.20	12.00	3.00	2.17
02	1	2.77	14.65	10.09	3.81
03	1	3.90	5.87	10.50	2.36
04	1	6.22	18.70	8.40	3.84
05	1	3.66	14.82	10.50	5.04
06	1	4.28	5.76	7.57	8.66
07	1	3.73	4.56	8.81	5.42
08	1	2.73	9.33	7.20	2.63
09	1	2.87	4.50	6.19	3.60
10	1	5.63	11.87	6.93	4.00
11	1	4.66	11.00	7.55	3.44
12	1	3.91	4.55	7.80	3.75
13	1	8.90	12.50	1.60	4.00
14	1	5.50	8.86	6.25	4.50
15	1	6.96	6.26	6.35	6.30
16	1	2.86	22.50	9.40	3.08
17	1	5.06	6.86	9.13	3.80
					(2)
18	2	1.75	12.00	7.17	9.29
19	2	6.81	11.05	3.50	5.78
20	2	0.00	7.50	8.34	3.40

(contd.)

Table 12.16 (contd.)

					(3)
21	3	2.68	11.50	6.50	4.00
22	3	6.84	11.30	5.47	5.25
23	3	6.30	5.33	3.36	?
24	3	5.00	5.71	3.00	2.00
25	3	5.45	10.04	9.44	7.72
26	3	0.00	4.14	6.53	0.00
27	3	8.20	7.82	3.00	2.96
28	3	3.75	2.11	2.61	2.14

The changes in psychological efficiency and the changes in dissonance, summarized together for each subject in Table 12.14, are of considerable theoretical interest. This interest has to do with the question of whether the theory of psychological efficiency can account for dissonance processes more adequately than the formulation in which dissonance is regarded as a motivating state of affairs.

It has already been pointed out that the decision theory cannot be formulated in terms of dissonance drive reduction dependent on an antecedent state of dissonance, as is, for example, the traditional approach to post-decision dissonance reduction. Instead, the decision theory is based on the principle of least dissonance, which is derived directly from the hypothesis of a decision process operating at maximal psychological efficiency. However, it might be argued that the "drive to reduce dissonance" approach gives a sufficiently good

explanation of "post-decision dissonance reduction". Table 12.14 indicates that this is not so, and that dissonance is not always reduced. On the other hand, the evidence supports the argument that maximizing psychological efficiency is the fundamental process which results in the various dependent effects previously cited, one of which is a tendency toward dissonance reduction.

Thus, with respect to the chosen alternative dissonance is reduced in eleven cases of subjects choosing alternative (1) and in all the other cases; in each of these, psychological efficiency is increased. In four other cases of subjects choosing alternative (1), however, dissonance is not reduced but is increased; at the same time, the evidence indicates that the process of maximising psychological efficiency has operated (i.e. psychological efficiency with respect to the actual choice has increased in these four cases). (In two other cases, dissonance is increased, but in these cases psychological efficiency is decreased, contrary to theoretical expectations). The same is true when considering changes in dissonance with respect to the actual choice. In general, an increase in psychological efficiency is accompanied by a reduction in dissonance as expected, except in two cases in which dissonance reduction does not occur, though an increase in psychological efficiency is manifested.

Thus, the evidence all points to instances of dissonance reduction being dependent effects of the processes operating to maximise psychological efficiency. That dissonance is not reduced, but is

actually increased as a consequence of maximizing psychological efficiency in a small number of cases, is to be expected. For it is explained in Chapter 8 that psychological efficiency can be maximized by means of changes in evaluations of dissonant and consonant elements, and by means of the accommodative reappraisal of the referent intentions. And in certain cases, the effect of the accommodative reappraisal of referent intentions can result in increased dissonance, especially when the dissonant and consonant elements are themselves constrained against substantial changes in evaluation.

Figure 12.1 summarizes the mean changes in psychological efficiency for the groups of subjects making choices (1), (2) and (3) respectively. The following conclusions are evident:

in general

(a) psychological efficiency with respect to the actual choice increases from pre-decision appraisal to post-decision reappraisal;

(b) post-decision psychological efficiency is further increased when attention is concentrated on the chosen alternative and relinquished from the rejected alternatives; (it is also seen that psychological efficiency with respect to the chosen alternative increases from pre-decision appraisal to post-decision reappraisal - indicated by the dotted lines);

comparing groups

(c) psychological efficiency for the subjectsmaking choice (2) is substantially lower, both pre-decision and post-decision, than

for the subjects making choices (1) or (3) - choice (2) is the one in which the chosen alternative is: "to get a deep understanding in the allotted time of only one theory, this making considerable demands on your mathematical ability";

comparing degrees of change

(d) the increase in psychological efficiency in relation to the actual choice is greatest for members of group (2) (from a mean psychological efficiency of 37.3% to a mean of 47.9%), for whom psychological efficiency is initially the lowest;

(e) the increase in psychological efficiency in relation to the actual choice is least for group (1)* (from a mean psychological efficiency of 50.9% to a mean of 54.8%);

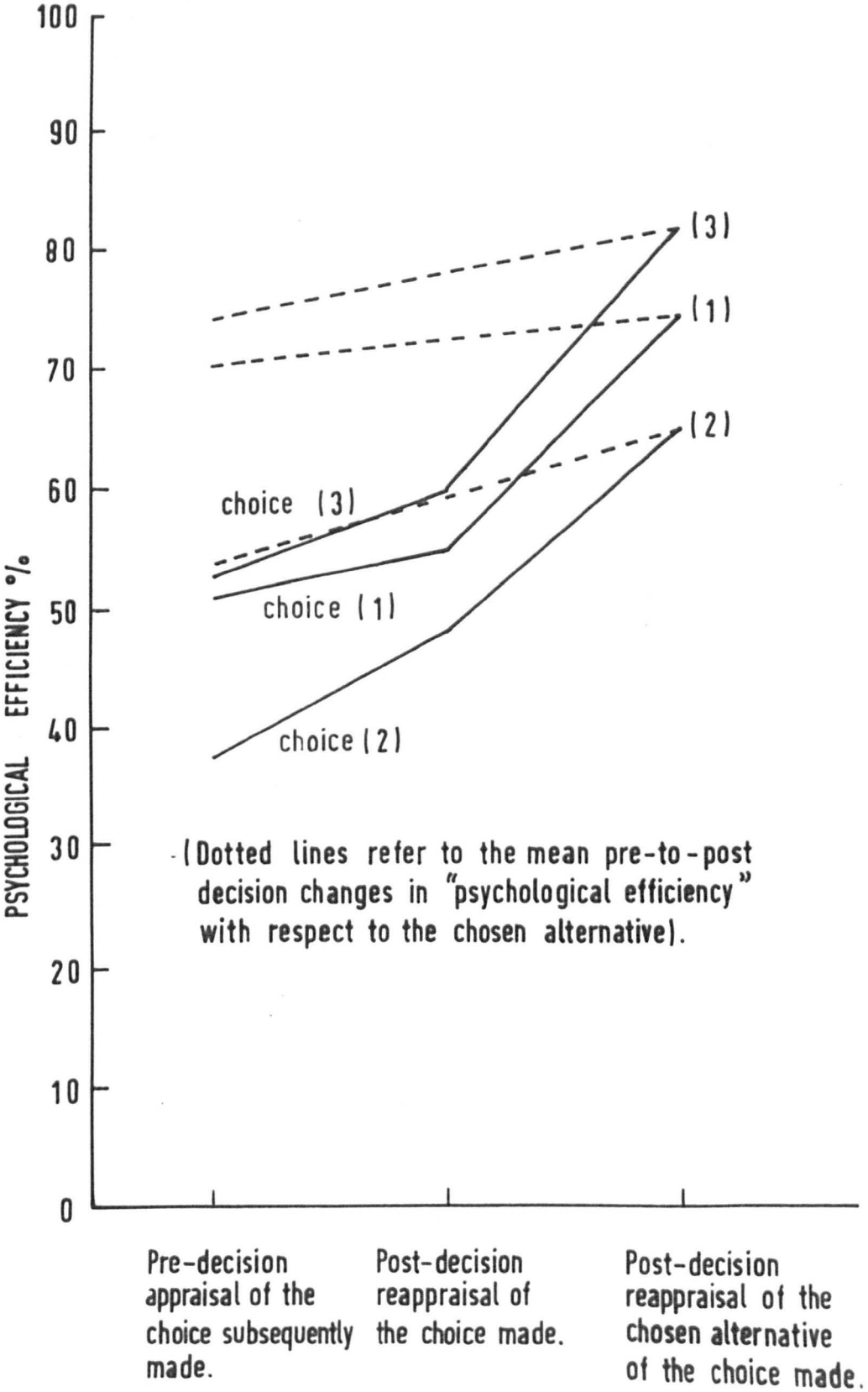
(f) psychological efficiency for group (3)**, which initially is much the same as for group (1), increases more than for group (1) (from a mean psychological efficiency of 52.5% to a mean of 59.8%) - the subjects in this group clearly end up in the most advantageous state compared with other groups.

* Choice (1) is the one in which the chosen alternative is: "to become superficially acquainted with all three theories in the allotted time".

** Choice (3) is the one in which the chosen alternative is: "To obtain a deep understanding of all three theories, this making considerable demands on your mathematical ability, and taking twice the allotted time at the expense of other topics."

Figure 12.1

MEAN CHANGES IN PSYCHOLOGICAL EFFICIENCY ACCORDING TO THE CHOICE MADE.



RE-EVALUATION OF DISSONANT AND CONSONANT ELEMENTS

The mean changes in evaluation of the component aspects of the decision situation for the groups of subjects making choices (1), (2), and (3) respectively, are illustrated in the following graphs. According to the actual choice made, the projected evaluations of these component aspects become dissonant or consonant with respect to the referent intention associated with the chosen alternative. Whether a particular component aspect is dissonant or consonant depends on whichever alternative becomes the chosen one.

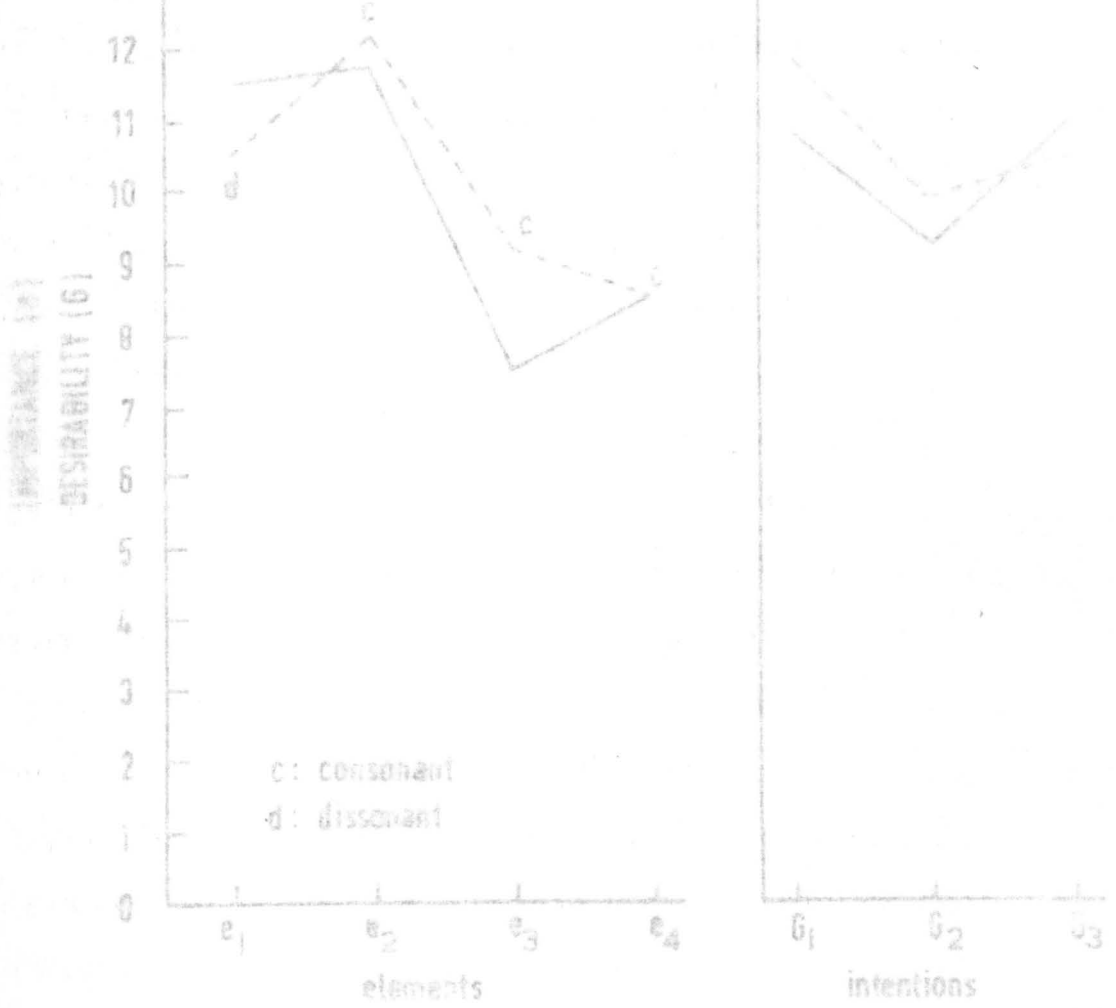
Figure 12.2 shows the difference in evaluations between pre-decision appraisal and post-decision reappraisal of the elements of the situation, and likewise for the referent intentions, for subjects making choice (1). Pre-decision appraisal is denoted by the full line, post-decision reappraisal by the dashed line. The nature of the elements, i.e. whether dissonant or consonant, is indicated.

It will be noted that changes in evaluations of the elements tend to be small, as might be expected from the relatively small mean increase in psychological efficiency for group (1) (see Figure 12.1). However, the magnitude of the single dissonant element (dissociation from "depth of understanding") is decreased as expected, i.e. the importance of "depth of understanding" to these subjects tends to become somewhat diminished after their decision. The magnitude of two of the three consonant elements is increased as expected, i.e. "knowledge of three theories" becomes slightly more important, and keeping within the "allotted time" becomes rather more important.

FIGURE 12.2

COMPARISON OF APPRAISAL AND REAPPRAISAL
FOR SUBJECTS CHOOSING ALTERNATIVE (1)

The magnitude of the remaining consonant element remains unaltered, i.e. "avoidance of mathematics" becomes neither more nor less important. Accommodative reappraisal of the referent intentions, although slight, is in the expected direction.

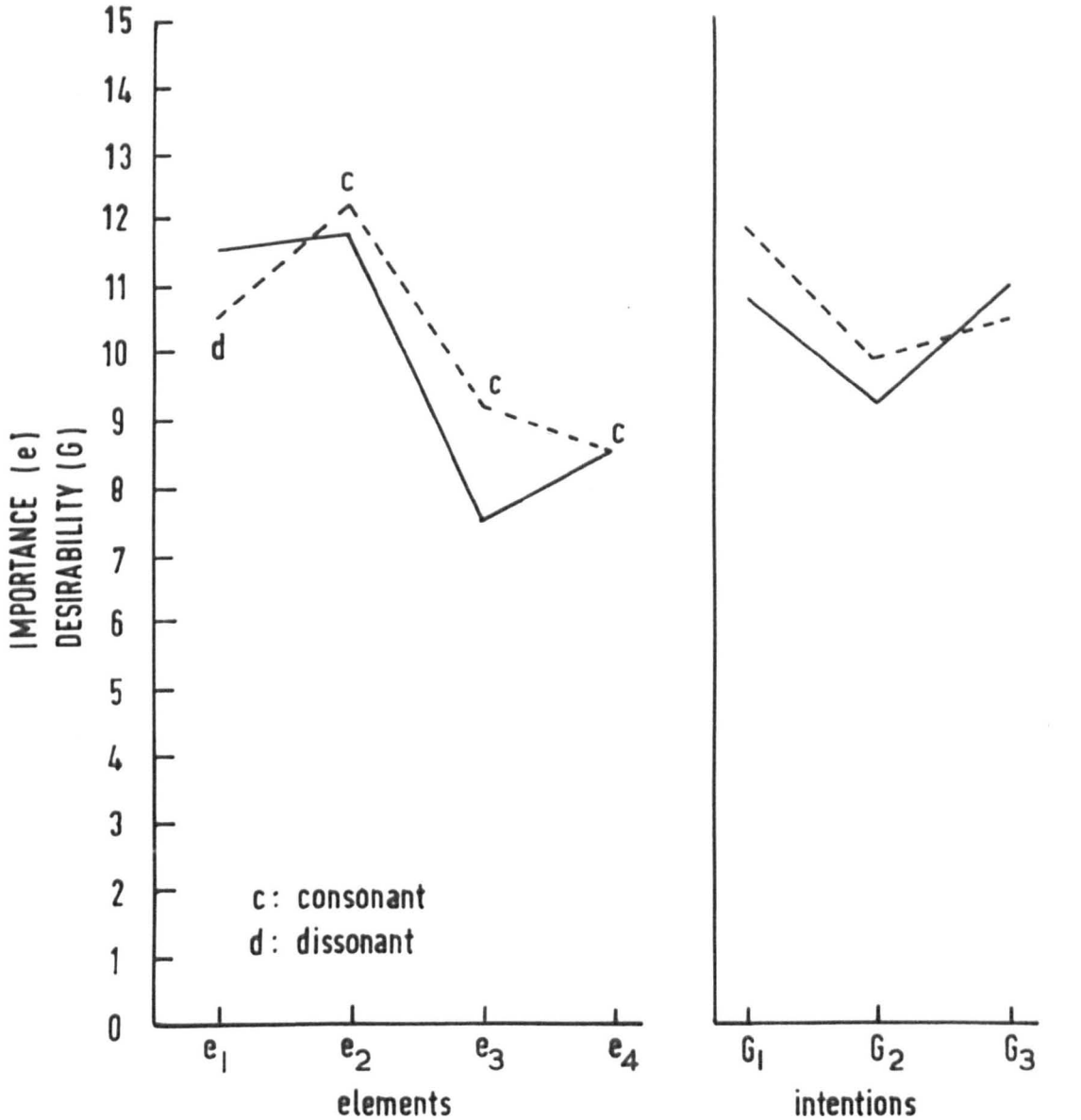


e_1 : depth of understanding
e_2 : knowledge of three theories
e_3 : allotted time
e_4 : avoidance of mathematics

——— pre-decision appraisal ; - - - - post-decision reappraisal

Figure 12.2

COMPARISON OF APPRAISAL AND REAPPRAISAL FOR SUBJECTS CHOOSING ALTERNATIVE (1)



e_1 : depth of understanding

e_2 : knowledge of three theories

e_3 : allotted time

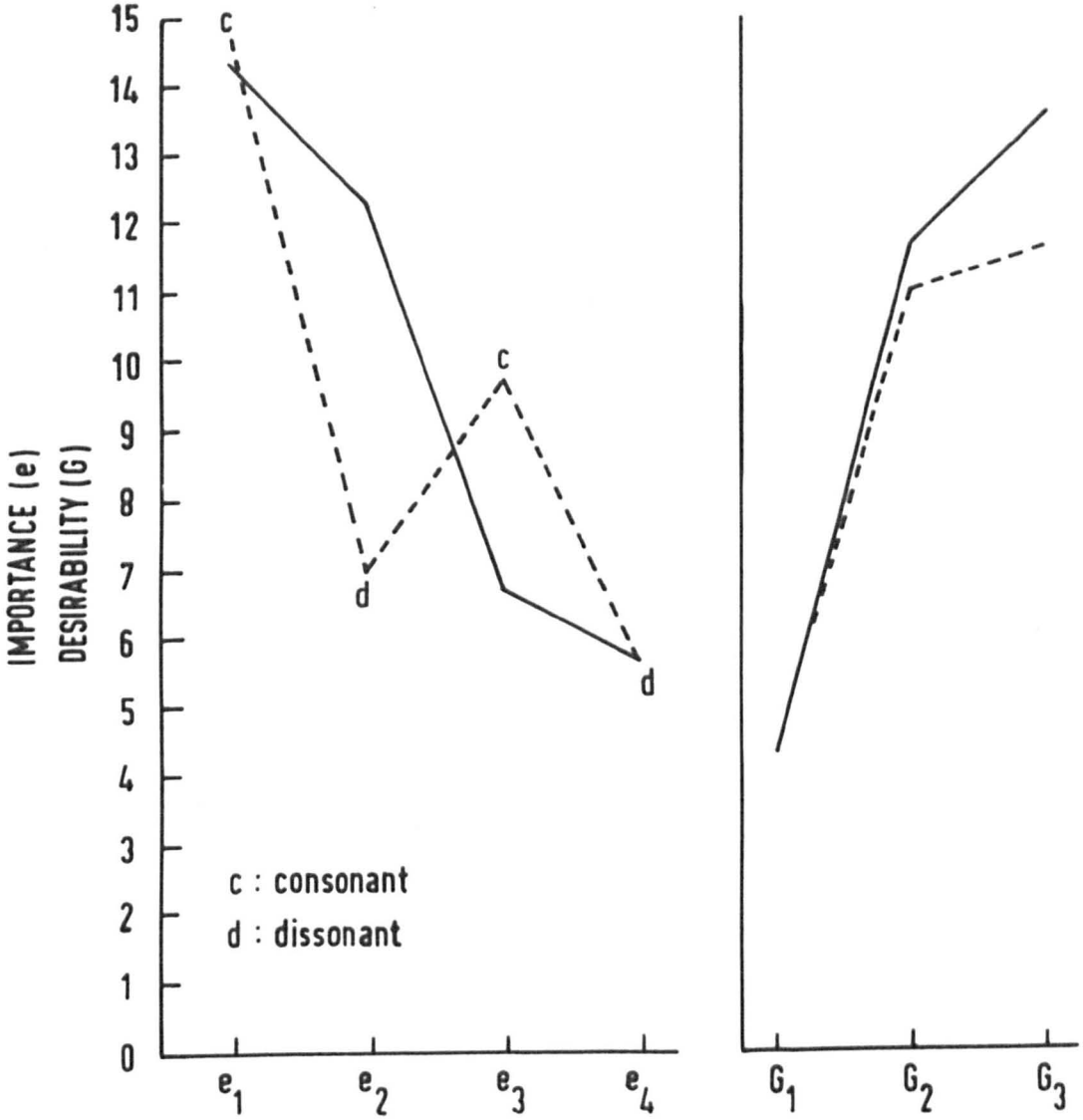
e_4 : avoidance of mathematics.

——— pre-decision appraisal ; - - - - post-decision reappraisal.

Figure 12.3 illustrates pre-decision appraisal and post-decision reappraisal for those subjects making choice (2). In line with the substantial mean increase in psychological efficiency for group (2) (see Figure 12.1), two of the elements become re-evaluated to a considerable degree. The greatest change is in the dissonant element - dissociation from "knowledge of three theories" - the magnitude of which is reduced, i.e. "knowledge of three theories" becomes considerably diminished in importance. The magnitude of the second element, which is the consonant one of association with "allotted time", is substantially increased, i.e. keeping within the "allotted time" becomes more important. The magnitude of the remaining consonant element "depth of understanding" is clearly unable to be increased except marginally, being initially very highly valued. The remaining dissonant element, association with "mathematics", does not change, however, despite the latitude available for change. Accommodative reappraisal of the referent intentions is much as would be expected on the basis of maximising psychological efficiency, when taken in conjunction with the reappraisal of the elements of the situation.

Figure 12.3

COMPARISON OF APPRAISAL AND REAPPRAISAL
FOR SUBJECTS CHOOSING ALTERNATIVE (2)



e_1 : depth of understanding
e_2 : knowledge of three theories
e_3 : allotted time
e_4 : avoidance of mathematics.

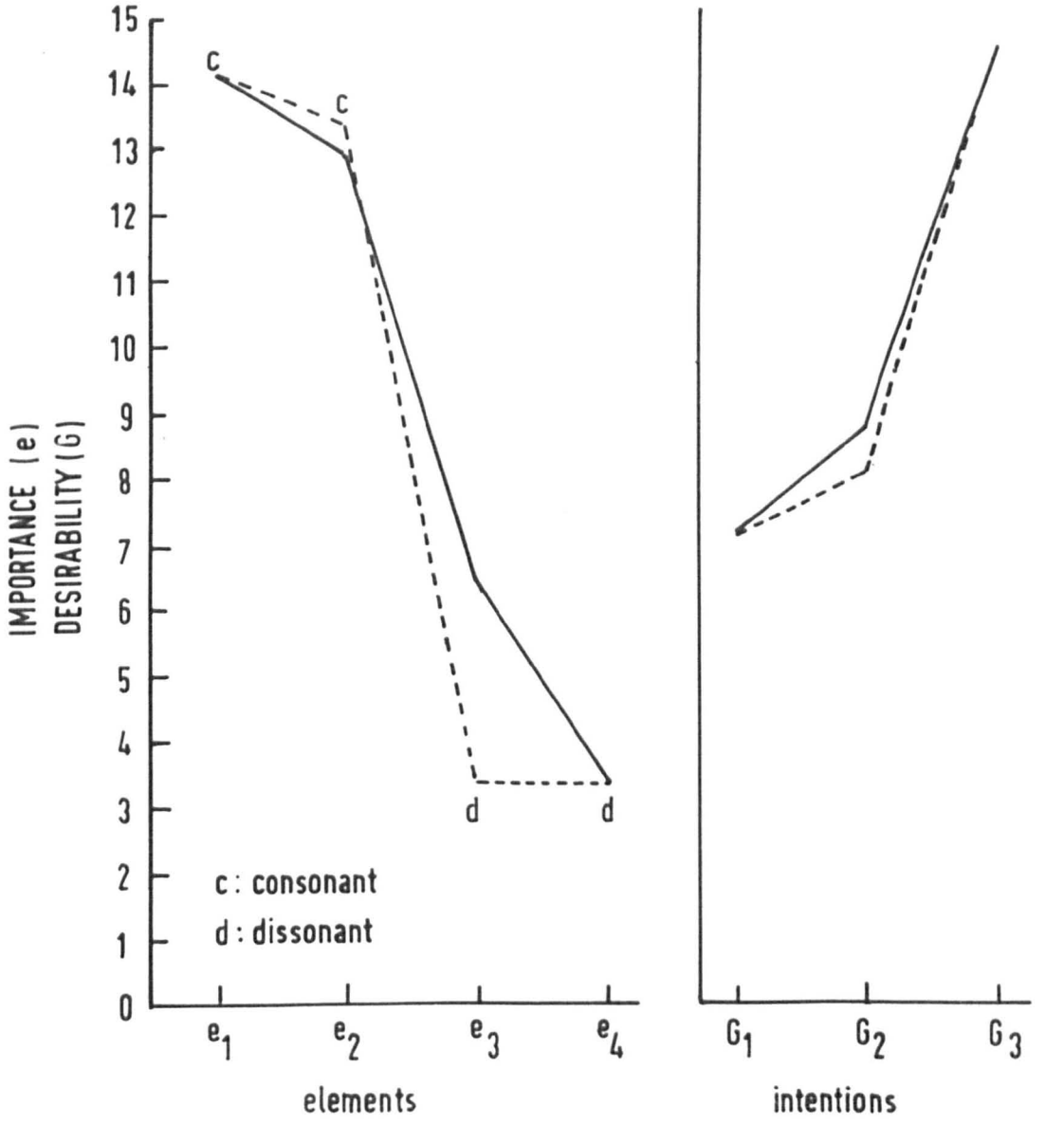
——— pre-decision appraisal ; – – – post-decision reappraisal.

Appraisal and reappraisal for subjects making choice (3) is illustrated in Figure 12.4. For these subjects the chief means of maximizing psychological efficiency is by way of decreasing the magnitude of the dissonant element - dissociation from "allotted time" - i.e. by diminishing substantially the importance to them of keeping within the "allotted time". The highly valued consonant element "knowledge of three theories" is marginally increased in magnitude. The remaining two elements, one consonant and the other dissonant, remain unchanged. The slight reappraisal of the referent intentions is in the expected direction.

Figure 12.5 illustrates the initial differences and similarities between the three groups, and the tendency towards greater divergence between them as a consequence of post-decision reappraisal of the component aspects of the decision situation. The mean pre-decision evaluation of "depth of understanding" for group (1) is somewhat less than for the other two groups, and the mean pre-decision evaluation of "avoidance of mathematics" differs for the three groups. The post-decision divergence with respect to the former aspect is small, and with respect to the latter it is negligible. However, whereas before the decision the mean evaluations for the two elements, "knowledge of three theories" and "allotted time", are roughly the same for all three groups, the subsequent post-decision divergence between the corresponding mean evaluations is considerable. Thus, overall, the groups of subjects become substantially more dissimilar in their evaluation of the situation, following post-decision reappraisal.

Figure 12.4

COMPARISON OF APPRAISAL AND REAPPRAISAL
FOR SUBJECTS CHOOSING ALTERNATIVE (3)



e_1: depth of understanding
e_2: knowledge of three theories
e_3: allotted time
e_4: avoidance of mathematics.

—— pre-decision appraisal ; --- post-decision reappraisal

Figure 12.5

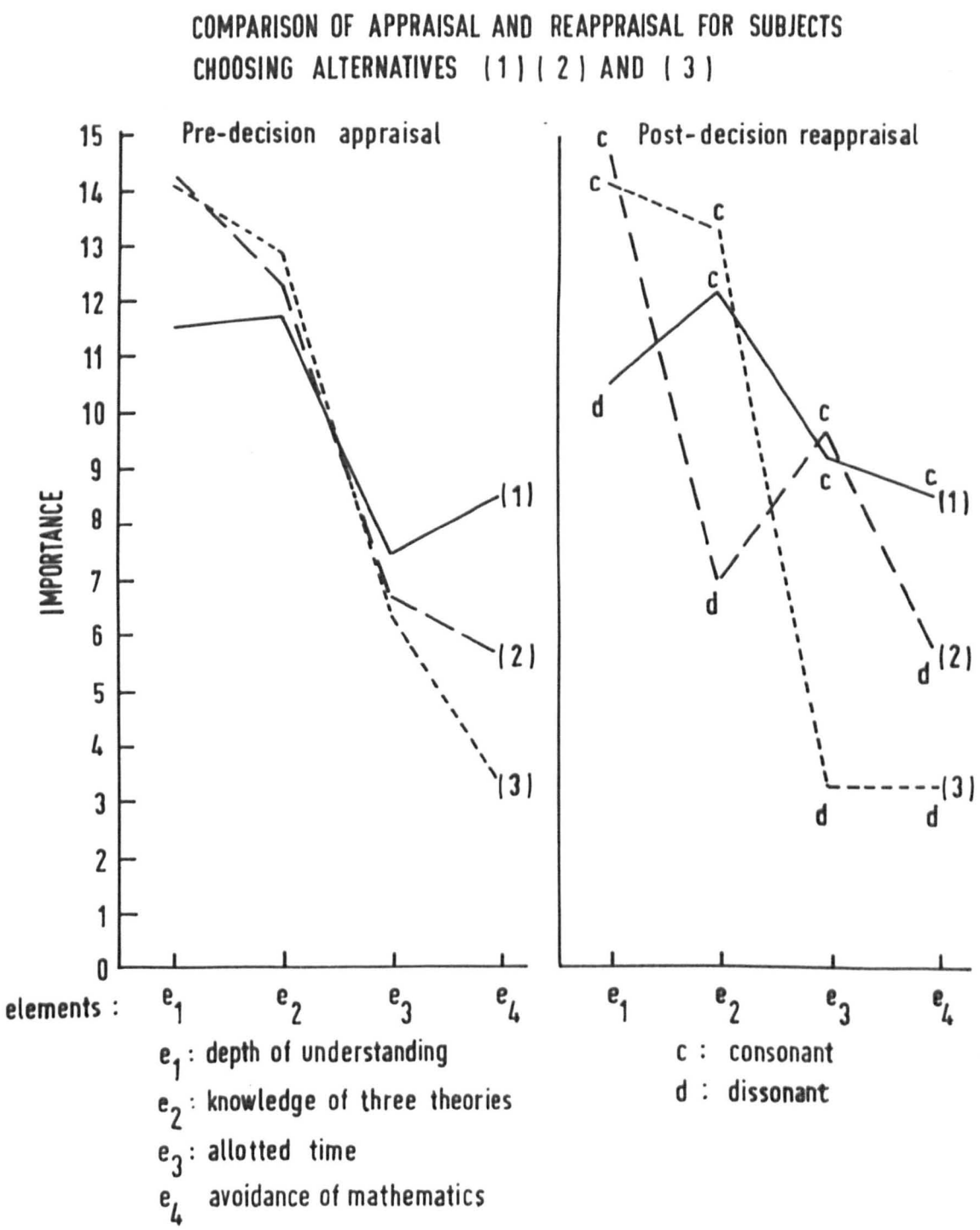

COMPARISON OF APPRAISAL AND REAPPRAISAL FOR SUBJECTS CHOOSING ALTERNATIVES (1) (2) AND (3)
Pre-decision appraisal
Post-decision reappraisal
IMPORTANCE
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
(1)
(2)
(3)
c
d
elements : e1 e2 e3 e4
e1 : depth of understanding
e2 : knowledge of three theories
e3 : allotted time
e4 avoidance of mathematics
c : consonant
d : dissonant

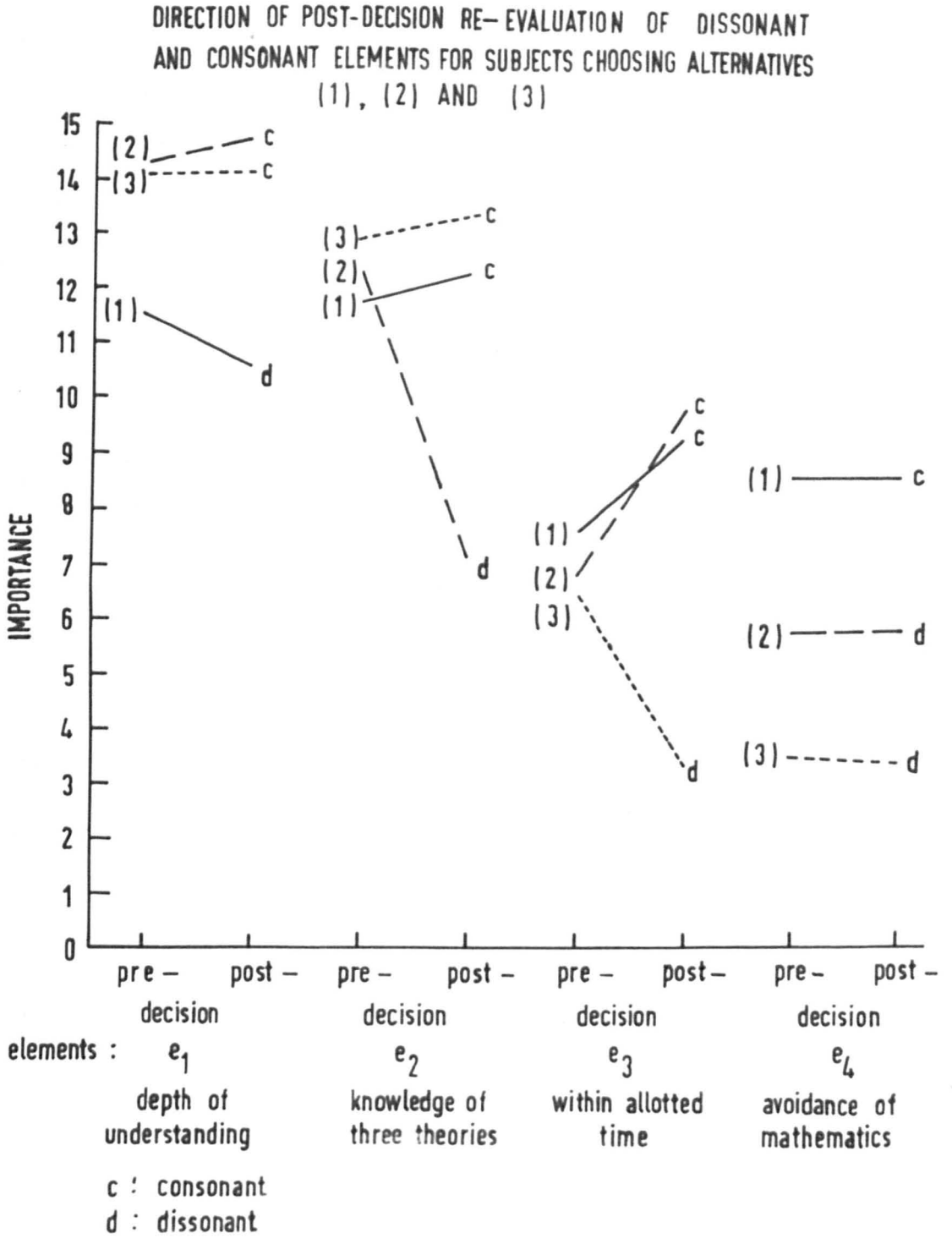
Figure 12.5 also highlights the post-decision advantage that group (3) subjects have in psychological efficiency compared with the other two groups (see Figure 12.1). For this group, the mean post-decision evaluations of the two dissonant elements are very low and those of the two consonant elements are very high. For group (1), despite the three consonant elements to one dissonant element, the mean post-decision psychological efficiency is lower than for group (3), as a result of the high mean post-decision evaluation of the dissonant element, and the only moderately high ones of two of the consonant elements. Group (2) subjects are also at a disadvantage in that the mean post-decision evaluations of the two dissonant elements are still considerable, whilst that of one of the two consonant elements is only moderately high.

Figure 12.6 shows the dependence of the degree and direction of the re-evaluation of the component aspects of the decision situation, on their nature as dissonant or consonant elements with respect to the appropriate chosen alternative. Several features stand out:

(a) The direction of re-evaluation of the same aspect of the situation depends on whether it is appraised as dissonant or consonant;

(b) When it does occur, re-evaluation is such that an aspect of the situation appraised as dissonant becomes so to a smaller degree, and an aspect of the situation appraised as consonant becomes so to a greater degree;

Figure 12.6


DIRECTION OF POST-DECISION RE-EVALUATION OF DISSONANT AND CONSONANT ELEMENTS FOR SUBJECTS CHOOSING ALTERNATIVES (1), (2) AND (3)
IMPORTANCE
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
(2) c
(3) c
(1) d
(3) c
(2) c
(1) d
(1) c
c
(2) d
(3) d
(1) c
(2) — — — d
(3) ------- d
pre – decision
post – decision
pre – decision
post – decision
pre – decision
post – decision
pre – decision
post – decision
elements : e_1 depth of understanding
e_2 knowledge of three theories
e_3 within allotted time
e_4 avoidance of mathematics
c : consonant
d : dissonant

(c) For the groups of subjects for whom the nature of a particular aspect of the situation is consonant, the mean degree of evaluation of that aspect remains similar between those groups, i.e. of "depth of understanding" for groups (2) and (3), of "knowledge of three theories" for groups (1) and (3), and of "allotted time" for groups (1) and (2);

(d) The degree of re-evaluation, given the possible latitude for change, is small for the group (1) dissonant element "depth of understanding", and indicates that this element is fairly strongly constrained against pressures for re-evaluation. This is not surprising since "depth of understanding" will be a continuing important concern for most research students, and, therefore resistant to accommodative reappraisal;

(e) The degree of re-evaluation of "mathematics" is negligible irrespective of the dissonant or consonant nature of this aspect of the situation. This again indicates the existence of strong constraints opposing its accommodative reappraisal. The reason for this is likely to be the subjects' knowledgeable insight into their ability with mathematics. The lack of re-evaluation would, therefore, be regarded as evidence of a strong constraining "reality factor".

(f) By constrast with the two elements constrained against accommodative reappraisal, the remaining two elements, concerning "knowledge of three theories" and "allotted time", both undergo considerable re-evaluation.

CONSTRAINTS AND DISSONANCE REDUCTION

Taken together, the features listed above force attention to an important qualification to one of the central notions of traditional dissonance theory. This notion, which forms the basis of predictions in the so-called "insufficient justification" experiments (see Chapter 1), is that the greater the dissonance aroused, the greater will be the subsequent dissonance reduction.

As has been seen, the arousal of dissonance results in decreased psychological efficiency. The greater the dissonance aroused the lower will be the psychological efficiency, hence the more strongly do the processes maximizing psychological efficiency have to operate in order to decrease the disturbance, and so the greater would be the pressure for accommodative reappraisal. In the absence of constraints and other means of accommodation, it would be expected that, in line with traditional views, the greater pressure would manifest itself in more extensive re-evaluation of dissonant and consonant elements, i.e. in greater dissonance reduction. However, this conclusion has to be modified in the light of the evidence, which indicates that strong pressures constrain the re-evaluation of certain dissonant and consonant elements.

The increase in psychological efficiency for group (2) subjects, for whom the mean psychological efficiency is initially the lowest, is substantial. By comparison, the increase in psychological efficiency for group (1) subjects, for whom the mean psychological

efficiency is initially higher than for group (2), is considerably less. Comparison between these two groups would, therefore, suggest that the lower the initial psychological efficiency, the greater would be the extent to which it is increased. This might also suggest that the greater the initial dissonance, the greater would be the subsequent dissonance reduction.

However, this view cannot be maintained when comparison is extended to the increase in psychological efficiency for group (3) subjects, for whom the mean psychological efficiency is initially the highest, but who, nevertheless, increase their advantage over group (1) subjects. In addition, it will be remembered that group (1) contains four instances in which psychological efficiency is not maximized by way of dissonance reduction (dissonance actually increases with respect to the chosen alternative), but by way of the accommodative reappraisal of the referent intentions. In other words, the degree of dissonance reduction is not necessarily related to the magnitude of dissonance initially aroused.

It is evident from the results that the reason why dissonance for group (1) subjects cannot be effectively reduced, is that strong internal constraints operate on their evaluation of the importance of "depth of understanding", the post-decision dissociation from which provides a large dissonant element. On the other hand, dissonance for group (2) subjects is reduced by way of the fairly drastic reappraisal of the evaluations of "knowledge of three theories" and

"allotted time", which appear to be much less strongly constrained, i.e. "knowledge of three theories" becomes much less important, keeping within the "allotted time" more important. Likewise, dissonance for group (3) subjects is reduced by reappraisal of the lightly constrained evaluation of "allotted time" in the opposite direction to that for group (2), i.e. keeping within the "allotted time" becomes relatively unimportant.

In all three groups, the change in evaluation of "mathematics" is negligible, despite the considerable latitude for change available, and indicates the presence of strong constraining pressures. Thus, of the two aspects of the situation, the subjects' evaluations of which are only lightly constrained, either one or the other features as a dissonant element for groups (2) and (3), and effective reappraisal for these subjects is possible. Neither, however, features as a dissonant element for group (1), for whom, instead, strong internal pressures constrain the magnitude of the single dissonant element.

In conclusion, therefore, it is evident that dissonance reduction is restricted by the internal constraints acting upon the individual's evaluations, and that the degree of dissonance reduction possible is dependent on the strengths of these constraints. Further, the evidence indicates that maximising psychological efficiency may occur by way of the accommodative reappraisal of referent intentions rather than by dissonance reduction alone, when the latter process is severely restricted by constraints. Thus, it is seen that the four cases in which dissonance is increased with respect to the chosen

alternative, and in which psychological efficiency is increased through the accommodative reappraisal of the referent intentions, all belong to group (1) - the group for which the dissonant element is the dissociation from "depth of understanding", the evaluation of which is, for these research students, strongly constrained.

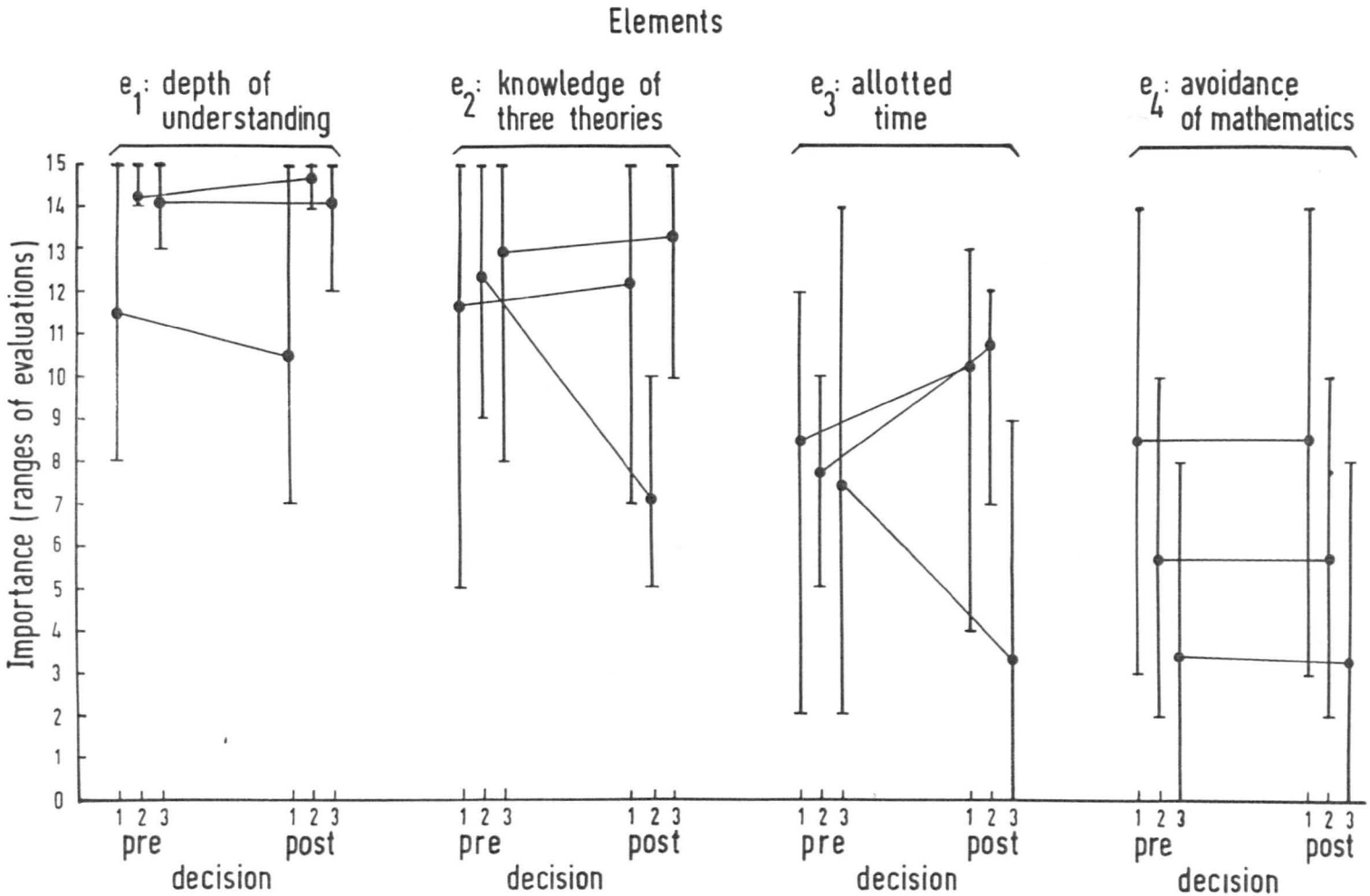
THE MANY DETERMINANTS OF A CHOICE

From the foregoing, the impression may have been formed that the group of subjects making a particular choice is a homogeneous one, in terms of their evaluations of the component aspects of the decision situation, and that subjects making one choice may be readily distinguished from subjects making a different choice on the basis of those evaluations. Such an impression would be quite incorrect, as is shown by Figure 12.7, which indicates the ranges of evaluations obtained for the subjects making each of the three choices.

The ranges for each component aspect of the situation, according to the groups of subjects identified by their common choice, is considerable and is in many cases one-half to two-thirds of the total scale. The only real exceptions are the ranges of evaluations of "depth of understanding" for groups (2) and (3). In addition, the degree of overlap in evaluations between subjects making <u>different</u> choices is also very considerable during pre-decision appraisal.

Figure 12.7

Ranges of evaluation of the elements of the situation for subjects choosing alternatives 1, 2, and 3: pre- and post-decision.



Numbers on the horizontal axis refer to the alternative chosen by the group of subjects in question.

It is evident, therefore, that the particular idiosyncratic appraisal of the total situation determines the subject's choice. In other words, the subject's choice has many determinants, which are his various evaluations of the delineated elements of the decision situation and his referent intentions. For one subject who makes choice (1), it is determined by his high evaluation of keeping within the allotted time in combination with perhaps moderate evaluations of the other aspects of the situation. For another, it is determined by a different configuration of evaluations, one which might include a high evaluation of avoiding mathematics. In general, this simply means that different individuals, frequently make the same choice for different "reasons". In like manner the same "reason" may feature in conjunction with others for individuals making different choices.

The decision theory, expounded in Chapter 8 and evaluated in the present chapter, is based upon conceptualizing the idiosyncratic appraisal of the decision situation, which results from the interaction of the particular psychological matrix of the individual with the particular environment that he encounters. As a consequence of this approach it is possible to predict behavioural consequences, that is, the choice made and the subsequent commitment to the course of action that this entails, from the pre-decision "subjective" appraisal of the decision situation.

Finally, Figure 12.7 also illustrates the divergence after the decision between the three groups, especially between groups (2) and (3) on the factors of "knowledge of three theories" and "allotted time". As a consequence of taking different decisions, the differences between the groups of subjects becomes greater. Thus, if a "decision" is regarded as a behavioural act, this shows the effect of behaviour on evaluations or "attitudes".

CONCLUSIONS

(1) Within the context of the experimental decision situation, the decision theory propounded in Chapter 8 received substantial validation.

Predictions of choices made

(2) The application of the principle of least dissonance to the pre-decision appraisal of the component elements of the decision situation, was successful in predicting correctly nearly 80% of the subsequent choices made between the three available alternatives. Its application to the post-decision evaluations of the elements of the situation was successful in predicting correctly 90% of the choices made. Both success rates were significantly better than those expected by chance. In addition, both prediction rates were also significantly better than that based on a "naive" consideration of simple preferences.

Decision reversal

(3) In six instances out of seven in which the choices made by the

subjects did not correspond to the predictions based on pre-decision evaluations, the two necessary conditions postulated for the appropriate decision reversals were unequivocally fulfilled. In the seventh instance, the fulfilment of the two conditions was somewhat equivocal.

(4) The predictive power of the decision principle was undermined in two instances of ties between the pre-decision appraisal of two different choices in respect of the least magnitude of dissonance aroused. Successful predictions were made in both cases by the use of the decision principle in conjunction with an examination of the conditions for decision reversal.

Maximizing psychological efficiency

(5) The data on pre- to post-decision changes in estimates of psychological efficiency and in estimates of dissonance, gave strong support for the proposition that post-decision reappraisal is due to processes which operate to maximize psychological efficiency. In line with this proposition, the data indicated that post-decision dissonance reduction may, but not necessarily does, occur, and that, in certain cases, post-decision dissonance may become increased, as a consequence of maximizing psychological efficiency.

Constraints and the re-evaluation of dissonant and consonant elements

(6) It was found that the magnitude of consonant elements tended to increase and that of dissonant elements tended to decrease during

post-decision reappraisal, in conformity with the expected dependent effects of the process operating to maximize psychological efficiency. Certain elements were, however, strongly constrained against such re-evaluation.

(7) The existence of strong constraints against the re-evaluation of certain elements resulted in increased post-decision dissonance following the maximization of psychological efficiency in certain cases, and in only small reductions of dissonance in others.

Re-evaluation of intentions

(8) When dissonance reduction was restricted by strong internal constraints, maximization of psychological efficiency tended to operate by way of greater accommodative reappraisal of subjects' referent intentions.

The many determinants of a choice

(9) Subjects who all made the same choice did not form a homogeneous group, but could be described as having different "reasons" for making their choice. Conversely, some subjects who made different choices could be described as having certain "reasons" in common. As a consequence of the circumstances of the decision situation, the choices made by many subjects did not conform to their most desirable intentions. The decision theory was generally successful in making predictions on the basis of individual idiosyncratic appraisals.

Divergences between groups initiated by the act of decision

(10) Post-decision reappraisal, conforming to the maximization of psychological efficiency, resulted in divergences becoming apparent between the groups making different common choices.

Festinger's theory of dissonance

The explanatory power of the theoretical postulates relating to psychological efficiency is seen to be greater than that of Festinger's original notion that dissonance is a drive which motivates the individual to reduce dissonance. On the basis of the experimental evidence presented here, this is evident on two counts:

(1) that the operation of a decision process according to a principle of least dissonance (which principle is strongly supported in the experiment) cannot be derived from a drive-to-reduce-dissonance postulate, but can be derived from the postulate that the decision process operates at maximal psychological efficiency;

(2) that the drive reduction postulate is contravened in certain cases in which there are increases in post-decision dissonance, but in which the experimental evidence continues to indicate that psychological efficiency becomes increased in accordance with the postulate that processes operate to maximize psychological efficiency.

The evidence of the operation of strong internal constraints on the re-evaluation of certain elements, requires that a qualification be

made to one of the traditional predictions derived from dissonance theory. This refers to the prediction that the degree of dissonance reduction (hence, the magnitude of change in evaluation of a certain dissonant element) will be a function of the magnitude of the antecedent dissonance. This is the prediction which the "insufficient justification" experiments, among others, were designed to test (see Chapter 1). The qualification is that, since the extent of dissonance reduction will also be dependent on the strength of internal constraints, it does not necessarily follow (as witnessed in the decision experiment) that the degree of dissonance reduction is any simple function of the magnitude of antecedent dissonance. In other words, it does not necessarily follow that the degree of re-evaluation of a dissonant element bears any direct relation to the magnitude of antecedent dissonance.

SECTION III : EXPERIMENTAL EVALUATION

CHAPTER 13 INTERACTION BETWEEN THE THREE MODES OF APPRAISAL AND REAPPRAISAL

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INTRODUCTION

The aim of the experiment described in this chapter is to demonstrate the interaction between the three modes of appraisal and reappraisal in a partial replication of experimental studies conducted by Rosenberg and Abelson (1960). The experiment is a test of the theoretical propositions concerning the comparison, modal and volitional modes of appraisal, especially with respect to their interaction (see Chapters 9, 10 and 11 - the types of possible interactions are discussed in detail in Chapter 11).

The 1960 Rosenberg and Abelson studies were undertaken to test balance model predictions about the way in which subjects would react to communications which expressed opinions discrepant from their previously internalized beliefs. The principle aims of these studies were to test whether subjects would use the discrepant communications to turn an "imbalanced" structure of beliefs and evaluations into a "balanced" structure in accordance with balance model predictions. As will be seen below, the results of their studies were equivocal with respect to the balance model.

An analysis of the experimental situation used by Rosenberg and Abelson suggested that the failure of the balance model predictions about "balance resolutions", was to be expected if the propositions concerning the interaction of the three modes of appraisal were followed. In addition, by using the same experimental situation, it was possible to test experimentally predictions which were derived

from the theory of the comparison, the modal and the volitional modes and their interaction. It was therefore thought appropriate to test the theoretical predictions about such interaction in a replication of the 1960 experiment, thus, at the same time, enabling an evaluation to be made of the respective merits of the balance model and the theory of modes of appraisal and their interaction.

With these aims in mind, the 1960 Rosenberg and Abelson experiment is first described in some detail and the results of that experiment evaluated. Then follows an analysis of their experimental situation in terms of (a) the appraisal process in the modal mode, and (b) the appraisal process in the volitional mode, during which expressions are derived for the magnitudes of aroused modal dissonance and aroused volitional dissonance. The analysis continues by considering the operation of the appraisalprocess in the comparison mode when the subjects receive the discrepant communications, and the consequent effects on the subjects' re-evaluations of their internalized beliefs arising from the interaction between the aroused discrepancy dissonances, and the dissonances bound in the modal and volitional modes of their identity structures.

The present replication of the 1960 experiment is then described in full detail. Attention is given to the introduction of certain extensions and modifications in the experimental manipulations, which were designed to provide for an adequate statistical evaluation of the predictions derived from the analysis of interacting modes of dissonance,

whilst, at the same time, allowing favourable conditions to exist for "balance resolutions" to occur should such tendencies be present.

THE 1960 ROSENBERG AND ABELSON EXPERIMENT

In order to examine balance model predictions about how individuals react to and possibly resolve "cognitive inconsistencies" or "imbalances", Rosenberg and Abelson experimentally induced "imbalanced" structures of beliefs and evaluations in the minds of their subjects, and subsequently provided them with the means for resolving the "imbalances". In their first study, Rosenberg and Abelson were concerned with balance model predictions about the subjects' reception of the communications which were designed to provide the means for balance resolutions. In their second study, they were, in addition, concerned with the types of balance resolutions that should ultimately have been achieved by the subjects.

The format of the two studies proceeded along the following lines. The initial imbalanced structure of beliefs and evaluations was established by asking each subject to play the role of "the owner of a large department store in a middle-sized, Midwestern city", who possesses certain affective evaluations of three entities: "high sales volume", "modern art" and "Fenwick" who is the manager of the rug department in his store. With the aid of "evidence" supplied in the form of various reports, each subject was expected to acquire the following set of beliefs about the relationships existing between the three entities:

(a) that displays of modern art in department stores reduce the volume of sales;

(b) that Fenwick plans to mount such a display in the rug department; and

(c) that, in his tenure as rug department manager, Fenwick has increased the volume of sales.

The particular type of imbalanced structure established in the subject was related to the favourable or unfavourable nature of the affective evaluations that he, as storeowner, was to possess, and depended on the experimental group to which he was assigned. All subjects were asked to value "high sales volume" very favourably. In addition, subjects assigned to group 1 were asked to value both "Fenwick" and "modern art" favourably, those assigned to group 2 were to have a favourable evaluation of "Fenwick" but an unfavourable evaluation of "modern art", and those assigned to group 3 were to possessunfavourable evaluations to both "Fenwick" and "modern art". Thus, the locus of imbalance was different for each experimental group (assuming, of course, that the role playing proceeded correctly) and is shown underlined in Table 13.1, which summarises for each group the imbalanced structures in terms of "bands" (see Chapter 2 for the balance model definitions).

Table 13.1: Rosenberg and Abelson (1960) - initial imbalanced structures according to experimental group

Band			Group 1	Group 2	Group 3
"modern art"	relation	"sales":	+ n +	- n +	- n +
"Fenwick"	relation	"modern art":	+ p +	+ p -	- p -
"Fenwick"	relation	"sales":	+ p +	+ p +	- p +

"+" refers to a favourably evaluated entity, "-" refers to an unfavourably evaluated entity; "p" refers to a positive relationship, "n" refers to a negative relationship. The imbalanced band for each group is underlined.

According to the balance model, each of the imbalanced configurations given in Table 13.1 may be resolved into a balanced structure (i.e. one containing balanced bands only) in a number of ways, the most direct being by way of a change in the sign of the relationship in the single unbalanced band. Other possible ways would involve an additional number of sign changes and would include a change in evaluation (i.e. a sign change) of at least one entity. Such possible resolutions for group 1 subjects are illustrated in Table 13.2.

Table 13.2: Possible balance resolutions for group 1 subjects
(c.f. Table 13.1: group 1)

	INITIAL	balance resolution:		
	imbalanced	one sign	two sign	three sign
Band	structure	change	change	change
A r S	+ n +	+ p +	- n +	- n +
F r A	+ p +	+ p +	+ n -	- p -
F r S	+ p +	+ p +	+ p +	- n +

A: modern art
S: sales
F: Fenwick

Thus, for example, imbalance would be resolved for a group 1 subject *if* he could re-evaluate the relationship between modern art and sales from the initial negative one to a positive one of, say, the favourable effect that modern art might have on the volume of sales (i.e. one sign change), or *if* he could re-evaluate the relationship between Fenwick and the modern art display from the initial positive one to a negative one of Fenwick dissociating from the art display and *if*, in addition, he could re-evaluate modern art as an unfavourable entity instead of a favourable one (i.e. two sign changes).

Tables 13.3 and 13.4 show the possible balance resolutions for group 2 and group 3 subjects respectively. For group 2 subjects the most direct way to a balanced structure would require a change in the sign of the Fenwick-Art relationship, whilst for group 3 subjects the

most direct way would require a change in the sign of the Fenwick-Sales relationship. Two other possible paths to balance for group 2 subjects would be by way of two sign changes, either by way of a change in sign of the Art-Sales relationship and of the entity Art, or by way of a change in sign of the Fenwick-Sales relationship and of the entity Fenwick.

Table 13.3: Possible balance resolutions for group 2 subjects
(c.f. Table 13.1: group 2)

	INITIAL	balance resolution:		
	imbalanced	one sign	two sign change	
Band	structure	change	(a)	(b)
A r S	- n +	- n +	+ p +	- n +
F r A	+ p -	+ n -	+ p +	- p -
F r S	+ p +	+ p +	+ p +	- n +

Table 13.4: Possible balance resolutions for group 3 subjects
(c.f. Table 13.1: group 3)

	INITIAL	balance resolution:		
	imbalanced	one sign	two sign	three sign
Band	structure	change	change	change
A r S	- n +	- n +	- n +	+ p +
F r A	- p -	- p -	+ n -	- n +
F r S	- p +	- n +	+ p +	- p +

THE 1960 EXPERIMENT: STUDY 1

The basic balance model hypothesis to be tested by Rosenberg and Abelson was that:

"The order of preference for paths toward restoring an unbalanced structure to balance will correspond to an ordering of the paths according to the number of sign changes required, from the least to the most."

In their two studies the experimenters provided the subjects with the means whereby they could resolve the induced imbalanced structures, if they so desired. Thus, they were supplied with three communications which contradicted the "evidence" used to establish the initial configuration of beliefs and which, instead, argued for the existence of relationships between the entities diametrically opposed to those originally specified. In their first study, Rosenberg and Abelson were concerned only with the subjects' reception of these communications. According to the balance model hypothesis, they should have been differentially received in such a way that the particular communication that made available the most direct path to balance resolution, should have been received the most favourably, whilst that one which made available a balance resolution by way of a two-sign-change path should have been received more favourably than that one which made available a three-sign-change resolution.

The three communications, which were presented to all the subjects in the three groups, argued the following:

Art-Sales communication: that modern art displays actually increase the volume of sales;

Fenwick-Art communication: that Fenwick really does not plan to display modern art in the rug department;

Fenwick-Sales communication: that Fenwick really has failed to maintain the volume of sales in the rug department.

Thus, for group 1 subjects, balance resolution could be most readily achieved by accepting the contents of the Art-Sales communication, whereas for group 2 and group 3 subjects, the Fenwick-Art and the Fenwick-Sales communications respectively provide the most direct means to balance resolution.

Two predictions were tested. The primary prediction was that, for each group, that communication which provided the means for balance resolution by way of one sign change would be the most acceptable. That is, the Art-Sales communication for group 1, the Fenwick-Art communication for group 2, and the Fenwick-Sales communication for group 3.

The secondary prediction was that, of the other two communications, the one implying two sign changes for balance resolution would be better received than the one implying three sign changes. That is, according to Rosenberg and Abelson, the Fenwick-Art communication would have more appeal for group 1 subjects than the Fenwick-Sales communication (refer to Table 13.2), and the Fenwick-Art communication would have more appeal for group 3 subjects than the Art-Sales one (refer

to Table 13.4). There would be no differential appeal between the Art-Sales and the Fenwick-Sales communications for group 2 subjects, since both would imply two sign changes (Table 13.3).

It should be noted that, whilst the primary prediction follows directly from the basic balance model hypothesis, the secondary prediction does so only if an additional assumption is made. This assumption which has already been pointed out, but which is not made explicit by Rosenberg and Abelson, is that the evaluation of "high sales volume" is so constrained that it cannot be changed. Otherwise, with the possible sign change in the evaluation of "sales", there would be, in line with group 2, no differential secondary prediction for groups 1 and 3. This assumption is probably a reasonable one, given the instructions to all subjects to place a high positive value on achieving the highest possible sales volume. However, the underlying theoretical issue concerns the insensitivity of the balance model hypothesis to the operation of constraints on changes in evaluations and to the unequal nature of "sign changes" that such constraints entail.

In order to test the primary and secondary predictions, ratings were obtained of the subjects' reception of each of the three communications. Each subject rated the communications on separate five-point scales according to how much each pleased him, how accurate each appeared to him, and how much each persuaded him. The summation of the three ratings for each communication provided a composite index for the subject's reception of it. Hence, from such composite indices

it could be ascertained which of the three communications was the most acceptable to the subject, which was the second and which was the least acceptable.

Appropriate comparisons were made in the analysis of variance performed on the subjects' ratings of the three communications. These were designed to test for the predictions of differential reception of the communications according to the experimental group to which the subjects were assigned. The result of the analysis of variance was that both the primary and secondary predictions were supported ($p < 0.001$ for both predictions). Rosenberg and Abelson concluded that "imbalance reduction within a structure of attitudinal cognitions will tend to follow a least effortful path. If only a single sign change is required, the receptivity to a communication advocating that change is relatively great. As between those implying two sign changes vs. those implying three, there is somewhat less difference, though the least-effort principle is still stongly supported." (1960, p.133)

However, this conclusion might need to be qualified in view of a criticism of Rosenberg and Abelson's methodology. This criticism applies to the instructions given to the subjects on how to perform their role-playing. The particular instructions in question are given in italics in the paragraph quoted below. It should be noted that this paragraph immediately follows the above-quoted conclusion in the text.

"However, one possible objection to be considered at this point would note that the more effortful approaches to balancing these structures involve changing evaluations of concepts as well as of relations. Since the change communications are concerned directly only with the three relations between concepts, the subjects may have felt more hesitant at the prospect of changing their direct evaluations of the concepts than would otherwise have been the case. To this line of argument it may be countered that the subjects were specifically instructed to feel free to change both concept evaluations and perceived relations as they thought through the import of the communications." (1960, p.133/134 - my italics)

The criticism is that, contrary to the initial instruction to the subject that he, himself, is to play the role of the store-owner the best he can, he is given specific suggestions on how he should perform the role-playing - to feel free to change both concept evaluations and perceived relations. In particular, the suggestion concerning the freedom to change concept evaluations is in no way implied by the situation confronting the subjects in their role-playing. In other words, strong suggestions are given by the experimenters to the subjects on how they should react to the situation. Therefore, the confirmation of the predictions may be due, in part, to experimenter bias. The confirmation of the secondary prediction is especially vulnerable to this criticism, since this prediction depends on an equal likelihood of changes in the evaluations of concepts - changes which the subjects are instructed to feel free to make.

THE 1960 EXPERIMENT: STUDY 2

Rosenberg and Abelson's first study did not enquire whether or not the subjects actually achieved balance resolutions, but only concerned itself with the reception of the communications which provided the means for such resolutions. The second study was directed to the question of whether the predicted balance resolutions occurred.

In the second study therefore, though the initial format of the experiment was much the same as in the first, additional information was obtained about what happened to each subject's structure of beliefs and evaluations after he had received the "potentially imbalance-reducing communications". The interest was, of course, in obtaining measures of the changes in a subject's beliefs and evaluations in order to ascertain whether these changes resulted in his attaining a balance resolution. To this end, an instrument containing six rating scales was administered twice during the experiment; the first time was immediately after the subject had read the material establishing the initial configuration of evaluations of the entities and the relationships between them, and the second time was after he had received the three communications. This instrument elicited the subject's evaluations of the three entities "high sales volume", "modern art", and "Fenwick" and his evaluations of the relationships between these entities taken two at a time.

Before examining the data on the numbers and types of balance resolutions achieved by the members of the three experimental groups, a significant departure is noted in the content of one of the communications from the first to the second study. In the first study, evidence was offered in the Fenwick-Art communication supporting the assertion that:

"Fenwick really does not plan to set up a modern art display",

whilst, in the second study, the following assertion was supported:

"Fenwick will be prevented (by the objections and recalcitrance of his employees) from displaying modern art".

In the first assertion Fenwick is simply the agent who acts or does not act (he does not plan...). However, in the second assertion other agents act upon Fenwick (his employees prevent Fenwick from...). According to the theory of the appraisal process in the volitional mode, these two assertions are very different.

That this difference is infact detected can be seen in the results of the analysis of variance performed on the subjects' ratings of the three communications. Thus, in addition to the confirmation, as in the first study, of both the primary and secondary predictions concerning the subjects' receptivity to the communications (p less than 0.001 for both predictions), a significant "residual between cell" effectwas reported (p less than 0.05). An examination of the data (Rosenberg and Abelson, 1960, p.136, Table 14) revealed a fairly

strong bias in favour of the Fenwick-Art communication, which was not present in the first study, accompanied by a smaller bias in favour of the Fenwick-Sales communication, compared with the Art-Sales communication.

Two sets of three groups of subjects were run in the second study. One set operated with the same initial evaluations and beliefs as in the first study. For the other set, an additional modification was introduced. The modification aimed to establish more firmly the initial imbalanced relationship in each of the three structures, in order to test whether "the least effortful path (one sign change) to balance could be blocked off, thus leading to greater use of two- and three-sign-change resolutions." (p.138)

This latter variation was found to have little effect. Thus, although the receptivity to the communications permitting a one-sign-change path to balance was diminished slightly, the receptivity to the other communications was not thereby enhanced. The results for the modified set of groups in the second study again supported the primary prediction, though to a lesser extent ($p < 0.01$ compared with $p < 0.001$ before). The secondary prediction was supported as before ($p < 0.001$). The "residual between cells" effect was again significant ($p < 0.05$) in line with the changed content of the Fenwick-Art communication common to both sets of groups in the second study.

The main interest in the second study was with what happened to the subject's evaluations of the entities and relationships after his reception of the communications and, in particular, with whether the subject resolved the initial imbalanced structure in the way specified by the balance model. According to the balance model, the most appropriate balance resolutions would be by way of the single-sign-change path. These have already been indicated for each experimental group in Tables 13.2, 13.3 and 13.4.

Rosenberg and Abelson combined the results for balance resolutions for the two sets of three groups in the second study. These results indicated that the balance model predictions about balance resolutions were, in general, unsuccessful. Thus, although out of the 26 combined group 1 subjects sixteen achieved balance (61.5%), out of 24 combined group 2 subjects only six (25.0%) and out of 22 combined group 3 subjects only four (18.2%) achieved balance. In terms of "appropriate" balances, the corresponding numbers were: fifteen out of 26 (57.6%) for group 1, only one out of 24 (4.2%) for group 2, and only three out of 22 (13.6%) for group 3. Taking all the subjects together, irrespective of group, only 26 out of 72 (36%) achieved any kind of balance - most of these came from group 1.

It is evident that the subjects in groups 2 and 3 tended not to achieve the appropriate balance resolutions expected of them on the basis of the balance model, nor even other kinds of balance resolutions.

In addition, the fact that a comparatively large number of group 1 subjects succeeded in achieving balance, whilst so few succeeded in groups 2 and 3, suggests that other strong pressures might be operating in such a way to enhance "balance resolutions" in group 1 and to counter such resolutions in groups 2 and 3. It will be seen in the following section that such an interpretation coincides with the analysis of the experimental situation in terms of the interaction between the modal, the volitional and the comparison modes of appraisal. If this line of argument is correct, it is possible that these other pressures were primarily responsible for the high incidence of "balance resolutions" in group 1.

It is clear, in any case, that no confidence can be placed in balance model predictions concerning balance resolutions. Since, in the experimental situation, such resolutions were expected to be attained following the reception of communications which advocated discrepant stands in relation to certain beliefs previously established in the minds of the subjects, it is also clear that the balance model cannot predict the effects that such discrepant communications have on the subjects' evaluations of associated entities and relationships.

Rosenberg and Abelson (1960) acknowledged in part the shortcomings of the balance model and followed them up with a "dual force" conception, which was later elaborated in more detail by Rosenberg (1966). This dual-force approach, which postulates a "cognitive

inconsistency motivation" and a "hedonic-antihedonic force", has already been described and evaluated in Chapter 11 of this thesis. There, the results of an experiment (Rosenberg 1966) designed to test predictions based on this approach were held to be more adequately explained in terms of the conceptualization of an interaction between the appraisal processes operating in the modal and volitional modes.

The interpretation of the 1960 experimental situation in terms of interacting modes of appraisal follows almost immediately. However, before this alternative interpretation is considered, it is interesting to record that whilst the results of the Rosenberg and Abelson study 2 did not support balance model predictions concerning balance resolutions, the results of both study 1 and study 2 did support balance model predictions about the receptivity of the subjects to the three communications contradicting the initial "evidence". What this might mean will be considered after the replication of the 1960 experiment is described and the results of that replication analysed.

INTERPRETATION OF THE ROSENBERG AND ABELSON EXPERIMENT IN TERMS OF INTERACTING MODES OF APPRAISAL

The sequence of events that occurred in the 1960 experiment is viewed here from a radically different vantage point compared with that of the balance model's concern with imbalanced structures and their possible resolutions.

The present interpretation considers first the subject's appraisal of the initial situation in which the relationships holding between the three entities "Fenwick", "modern art" and "sales" are sketched in. The subject's appraisal of the initial situation is analysed in terms of the two modes of its operation: (a) the operation of the appraisal process in the modal mode, that is, in relation to the subject's internalised evaluations of the entities implicated in the situation, considering the associations or dissociations between them; and (b) the operation of the appraisal process in the volitional mode, that is, in relation to the subject's internalised intention to achieve the highest possible volume of sales, considering the favourable or unfavourable effects that certain agents might have.

The assimilation of the elements of the situation, delineated during appraisal, into the subject's identity structure is next considered in terms of the assimilative processes operating in both the modal and the volitional modes. Expressions are derived, per each experimental group, for the magnitudes of the modal and volitional dissonances aroused during appraisal and then bound within the identity structure during the assimilative processes (i.e. during assimilative reappraisal).

The situation that follows in which the three communications contradict the previously assimilated beliefs, is then analysed in terms of the arousal of discrepancy dissonances during appraisal,

at this juncture, in the comparison mode. Finally, the subsequent accommodative reappraisals of these beliefs are considered. At this stage in the analysis, the expected degrees of change in the evaluations of each of the assimilated beliefs are described in terms of their dependence on the aroused discrepancy dissonances and on the additional interacting pressures that are due to the continuing presence of the dissonances bound in the modal and the volitional modes. The first stage of the analysis, then, assumes the internalization by the subject of the affective evaluations of the three entities "Tenwick", "modern art" and "high sales volume", in such a way that he is able to operate with them as temporary contents of his identity structure. In a like manner, the intention to "keep sales at the highest possible volume" is also assumed to be internalized by the subject. The point of view taken here is that, in empathizing with or playing the role of the store owner, the subject attempts to experience the situations presented to him with reference to these affective evaluations and this intention as though they were his own*. The analysis of the sequence of events in the experiment is therefore given in terms of the confrontation between the psychological matrix

* It is obvious that problems exist about role-playing procedures, but the evidence points to role playing as being an adequate if not wholly satisfactory method. Its chief advantage stems from the ease of controlling experimental manipulations. The chief deficiency is likely to be the lack of intensity and concreteness of the role-played character compared with the individual per se.

thus represented in its modal and volitional aspects* and the particular environmental situations encountered as the role-playing proceeds.

THE 1960 EXPERIMENT: MODAL APPRAISAL

The operation of the appraisal process during the subject's confrontation with the initial experimental situation will be first considered in its modal mode. Since the affective evaluations internalized by each subject depend upon the experimental group to which he is assigned, the outcome of appraisal in the modal mode will differ in respect of the modal dissonance aroused depending upon the subject's group membership. Therefore, appraisal in the modal mode is analysed three times for a subject being a member, in turn, of each group.

Group 1

The affective evaluations of the three relevant entities initially internalized by a group 1 subject are all favourable (i.e. positive) evaluations, that is, favourable evaluations of "Fenwick", "modern art" and "sales". The initial situation that confronts the subject, which is the same whatever his group membership, is the following:

* This may be regarded as a truncated portion of the identity structure in which its involvement in the experimental situations is restricted to the three affective evaluations in its modal aspect and the intention in its volitional aspect.

(1) Fenwick has increased sales, (2) displays of modern art in department stores reduce sales, (3) Fenwick plans to mount a display of modern art in the rug department (it will be remembered that each of these relationships in this situation is supported by "evidence").

In line with the conceptualization given in Chapter 10, the transactions that occur during modal appraisal between the identity structure and the environment are considered to be made up of (a) the delineation of the distal stimuli against the construct system in terms of a configuration of associations and dissociations between the delineated entities, together with (b) the projection of the respective evaluative characteristics from the identity structure on to these delineated entities.

The delineation of the distal stimuli is assumed to resolve these elements: the entities - "Fenwick", "modern art" and "sales", and the relationships - a "dissociation" between modern art and sales (denoted by u(as) = u(sa)), an "association" between Fenwick and sales (denoted by u(fs) = u(sf)), and an "association" between Fenwick and modern art (denoted by u(fa) = u(af)). The referent evaluations of the entities, activated during appraisal and projected on to the delineated distal stimuli, are denoted thus: R(f) for Fenwick, R(a) for modern art, and R(s) for sales. The resultant projected evaluations in the appraisal plane arising from these transactions in the modal mode are therefore as given in Table 13.5. In this table the projected evaluations are indicated as either consonant or

dissonant with respect to their referent evaluations in the identity structure. It will be noted on inspection that whether elements are dissonant or consonant depends on both the nature of the delineated relationships and on the nature of the affective evaluations projected on to the delineated entities.

Table 13.5: Modal appraisal for group 1 subjects

IDENTITY STRUCTURE	MODAL APPRAISAL PLANE	
referent evaluations:	projected evaluations:	
	u(fa) R(a)	(+)(+) = (+) consonant
R(f) (+)	u(fs) R(s)	(+)(+) = (+) consonant
	u(ff) R(f)	(+)(+) = (+) consonant
	u(af) R(f)	(+)(+) = (+) consonant
R(a) (+)	u(as) R(s)	(-)(+) = (-) dissonant
	u(aa) R(a)	(+)(+) = (+) consonant
	u(sf) R(f)	(+)(+) = (+) consonant
R(s) (+)	u(sa) R(a)	(-)(+) = (-) dissonant
	u(ss) R(s)	(+)(+) = (+) consonant

NB. u(ff), u(aa) and u(ss) denote the identity relationships between the respective referent evaluation and its projection on to the appraisal plane.

As can be seen from Table 13.5, no modal dissonance is aroused with respect to the referent "Fenwick". The magnitude of modal dissonance aroused with respect to the referent "modern art" is given by:

$$D(a) = G(a)r(a) \frac{/u(as)R(s)/}{/u(af)R(f)/+/u(aa)R(a)/} \qquad 13.1$$

where G(a) is the ego-involvement in "modern art" and r(a) is the perceived relevance of "modern art" in the context of the appraisal*.

The magnitude of modal dissonance aroused with respect to the referent "sales" is likewise given by:

$$D(s) = G(s)r(s) \frac{/u(sa)R(a)/}{/u(sf)R(f)/+/u(ss)R(s)/} \qquad 13.2$$

where G(s) and r(s) are the ego-involvement in and the perceived relevance of "sales" respectively.

Thus, for group 1 subjects, the loci of disturbances to the identity structure (modal dissonance) are the referent entities "modern art" and "sales". The operation of processes tending to maximize psychological efficiency during appraisal may therefore result in the

* The magnitude of dissonance being given by hypothesis 6.10 as dependent on:
a direct relation to the degree of ego-involvement in the referent;
a direct relation to the perceived relevance of the referent in the context of the appraisal;
a direct relation to the number and strength of dissonant elements with respect to the referent; and
an inverse relation to the number and strength of consonant elements with respect to the referent.

immediate accommodative reappraisal of the referent evaluations of "modern art" and "sales" (internal constraints permitting), or to a distortion of the appraisal (construct system permitting) such as to minimise the arousal of dissonance. From expressions 13.1 and 13.2, it is evident that distortion of appraisal in the modal mode would centre on the dissociative relationship between "modern art" and "sales", u(as), such that it would tend towards an associative relationship (i.e. tending towards: modern art displays <u>increase</u> sales).

If no accommodative reappraisal of the referent evaluations and if no distortion of appraisal take place, the assimilation of the appraised relationships will lead to an elaboration of the identity structure (assimilative reappraisal) by which the modal dissonance, given by expressions 13.1 and 13.2, becomes bound. The total modal dissonance thus bound is given by summing expressions 13.1 and 13.2: (noting that D(f) = 0)

bound: $D(f,a,s) = D(f) + D(a) + D(s)$
(group 1)

$$= G(a)r(a)\,\frac{/u(as)R(s)/}{/u(af)R(f)/+/u(aa)R(a)/} + G(s)r(s)\,\frac{/u(sa)R(a)/}{/u(sf)R(f)/+/u(ff)R(f)/}$$

Simplifying,

bound: $D(f,a,s) = /u(as)/\left(\frac{G(a)r(a)/R(s)/}{/u(af)R(f)/+/u(aa)R(a)/} + \frac{G(s)r(s)/R(a)/}{/u(sf)R(f)/+/u(ff)R(f)/}\right)$
(group 1)

13.3

where "bound:D(f,a,s)" indicates that the disturbed portion of the identity structure contains the referent entities "Fenwick", "modern art" and "sales".

Group 2

In his role-playing, the group 2 subject internalizes these affective evaluations: favourable (i.e. positive) evaluations of "Fenwick" and "sales", and an unfavourable (i.e. negative) evaluation of "modern art". The situation confronting him is the same as for the group 1 subject. The same entities and the same relationships are delineated as before. However, owing to the different affective evaluation of "modern art", the projected evaluations in his appraisal plane (modal aspect) are different. Table 13.6 indicates the contents of the modal appraisal plane for the group 2 subject on his appraisal of the initial situation.

For the group 2 subject the loci of the modal dissonance aroused during appraisal, are the referent evaluations of "Fenwick" and "modern art", which might therefore suffer immediate accommodative reappraisal. The possibility of accommodative reappraisal will be dependent on the weakness of internal constraints. From Table 13.6 and the expression for the magnitude of modal dissonance aroused during appraisal, it is evident that the relationship that might be susceptible to distortion during appraisal is the association between Fenwick and modern art. The possibility of this distortion will be dependent on both the ambiguity of the distal stimuli and on the

resilience of the construct system against which the distal stimuli are delineated.

Table 13.6: Modal appraisal for group 2 subjects

IDENTITY STRUCTURE	MODAL APPRAISAL PLANE	
referent evaluations:	projected evaluations:	
	u(fa) R(a)	(+)(-) = (-) dissonant
R(f) (+)	u(fs) R(s)	(+)(+) = (+) consonant
	u(ff) R(f)	(+)(+) = (+) consonant
	u(af) R(f)	(+)(+) = (+) dissonant
R(a) (-)	u(as) R(s)	(-)(+) = (-) consonant
	u(aa) R(a)	(+)(-) = (-) consonant
	u(sf) R(f)	(+)(+) = (+) consonant
R(s) (+)	u(sa) R(a)	(-)(-) = (+) consonant
	u(ss) R(s)	(+)(+) = (+) consonant

In the absence of accommodative reappraisal of the referent evaluations and distortion during appraisal, the modal dissonance, bound by the assimilation of the delineated relationships, is given by:

$$\text{Bound:}D(f,a,s) = D(f) + D(a) + D(s) \quad \text{(group 2)}$$

which becomes, on inserting the values of dissonant and consonant elements, and of the relevant ego-involvements and perceived relevances:

$$\text{bound:}D(f,a,s) = /u(fa)/\left(\frac{G(f)r(f)/R(a)/}{/u(fs)R(s)/+/u(ff)R(f)/} + \frac{G(a)r(a)/R(f)/}{/u(as)R(s)/+/u(aa)R(a)/}\right) \qquad 13.4$$

($D(s) = 0$)

Group 3

The referent evaluations internalized by the group 3 subject are: a favourable evaluation of "sales", and unfavourable evaluations of "Fenwick" and "modern art".

The situation initially confronting the group 3 subject is again the same as for the group 1 and the group 2 subject. The contents of the modal appraisal plane for the group 3 subject appraising the situation, are given in Table 13.7. The differences in projected evaluations in this table, compared with Tables 13.5 and 13.6, stem from the differences in internalized affective evaluations.

Table 13.7: Modal appraisal for group 3 subjects

IDENTITY STRUCTURE	MODAL APPRAISAL PLANE	
referent evaluations:	projected evaluations:	
R(f) (-)	u(fa) R(a)	(+)(-) = (-) consonant
	u(fs) R(s)	(+)(+) = (+) dissonant
	u(ff) R(f)	(+)(-) = (-) consonant
R(a) (-)	u(af) R(f)	(+)(-) = (-) consonant
	u(as) R(s)	(-)(+) = (-) consonant
	u(aa) R(a)	(+)(-) = (-) consonant
R(s) (+)	u(sf) R(f)	(+)(-) = (-) dissonant
	u(sa) R(a)	(-)(-) = (+) consonant
	u(ss) R(s)	(+)(+) = (+) consonant

The loci of modal dissonance for the group 3 subject are the referent evaluations of "Fenwick" and "sales". The referent evaluations of both, therefore, suffer pressures for immediate accommodative reappraisal, a reappraisal which would, however, depend on a lack of internal constraints. The relationship that might suffer distortion during appraisal, constraints permitting, would be the association between "Fenwick" and "sales", the tendency of the distortion being towards a dissociation (i.e. towards: Fenwick has reduced sales).

In the absence of accommodative reappraisal and distortion during appraisal, the assimilation of the delineated relationships into the identity structure gives rise to a magnitude of bound modal dissonance:

$$\text{bound: } D(f,a,s) = D(f) + D(a) + D(s)$$

(group 3)

$$= /u(fs)/ \left(\frac{G(f)r(f)/R(s)/}{/u(fa)R(a)/+/u(ff)R(f)/} + \frac{G(s)r(s)/R(f)/}{/u(sa)R(a)/+/u(ss)R(s)/} \right) \qquad 13.5$$

($D(a) = 0$)

Appraisal of the initial situation in the modal mode, the resultant arousal of modal dissonance, and the binding of that dissonance on the assimilation into the subject's identity structure of the beliefs about the relationships holding between the three entities in the situation, have been analysed for the three experimental groups. The similarities which are apparent between the modal mode analysis and the balance formulation have been previously demonstrated and commented upon in Chapter 10. Appraisal in the volitional mode, the analysis of which now

follows, has no real equivalent in the balance formulation*.

THE 1960 EXPERIMENT: VOLITIONAL APPRAISAL

The operation of the appraisal process in its volitional mode is now considered for all subjects in relation to their confrontation with the initial situation. In general terms, the outcome of appraisal in the volitional mode is common to all subjects irrespective of their group membership, except for the existence of one projected evaluation (concerning a possible indirect effect attributed to Fenwick's actions) which is dependent, according to the analysis of Chapter 11, on the nature of the affective evaluations internalized by the subjects.

The appraisal process in the volitional mode is considered to operate with respect to the future orientation of the individual. It is regarded as delineating the possible effects that certain agents might have or the outcomes of actions undertaken by various agents in relation to his identifications or intentions. Such effects or outcomes are in general directional - they are appraised as being the results of actions or influences initiated by the various agents which are, themselves, not generally the recipients of identical reciprocal actions or influences.

The whole procedure for transforming the contents of the modal appraisal plane into the contents of the volitional appraisal plane is given in Chapter 11. Here, however, for the sake of brevity, the initial stages are omitted.

* The apparent similarities between the "hedonic-antihedonic" conception of Rosenberg (1966) and that of appraisal in the volitional mode are,

(contd.)

Subjects of all three experimental groups, in role-playing the store owner, internalize the intention "to keep sales at the highest possible volume". Using the notation of Chapter 11, this common referent intention for all subjects is denoted thus: R(s). The straightforward appraisal of the initial situation is represented in the following way: (1) Fenwick increases sales - R(f)u(fs)', (2) displays of modern art in department stores reduce sales - R(a)u(as)', and (3) Fenwick plans to mount a display of modern art - R(f)u(fa)'.

R(a), R(f) denote the agents "modern art" and "Fenwick" respectively. u(as)' denotes the directional relationship between the agent "modern art" and the recipient "sales", which is here a directional dissociation*. u(fs)' and u(fa)' denote the directional associations between the agent "Fenwick" and the recipients "sales" and "modern art" respectively.

R(a)u(as)' represents the operation of the agent "modern art" on the directional dissociation between itself and the recipient "sales", and denotes the appraised effect of its action on "sales". The appraised effect corresponds to the straightforward appraisal, i.e.

$$R(a)u(as)' = u(as)' \qquad 13.6$$

(that is, "modern art" is appraised as having only a direct effect on "sales", which is to reduce sales).

(* contd.)
in fact, superficial, as will have been evident from the discussion on the interaction between modal and volitional modes in Chapter 11.

*As it is delineated against the construct system.

In the cases of $\underline{R}(f)\underline{u}(fs)'$ and $\underline{R}(f)\underline{u}(fa)'$, the attributed effects or outcomes of the agent's (i.e. Fenwick's) action with respect to the recipients "sales" and "modern art", have also to be taken into account. Thus, the appraised direct effects may be represented as above for "modern art", i.e.

$$\underline{R}(f)\underline{u}(fs) = \underline{u}(fs)' \qquad 13.7$$

$$\underline{R}(f)\underline{u}(fa)' = \underline{u}(fa)' \qquad 13.8$$

In addition, the appraisal of, or the attribution of possible indirect effects of Fenwick's actions is denoted as follows:

$$\underline{R}(f)\underline{u}(fa)'_i = \underline{R}(f)(\underline{u}(fx)'\underline{u}(xa)'), \quad \text{and} \qquad 13.9$$

$$\underline{R}(f)\underline{u}(fs)'_i = \underline{R}(f)(\underline{u}(fx)'\underline{u}(xs)') \qquad 13.10$$

in which $\underline{u}(fa)'_i$ and $\underline{u}(fs)'_i$ denote the possible indirect relationships between the agent "Fenwick" and the recipients "modern art" and "sales" respectively, and "x" denotes the possible, as yet unspecified, intermediary entities (see Chapter 11: The specification of indirect effects).

With reference to expression 13.9 above, the indicated directional relationship, $\underline{u}(xa)'$, does not correspond to any of the delineated relationships (see expressions 13.6, 13.7 and 13.8) except $\underline{u}(fa)'$. This rules out the possible existence of an intermediary between "Fenwick" and "modern art", since on the substitution of "f" for "x" in expression 13.9, $\underline{R}(f)(\underline{u}(fx)'\underline{u}(xa)'$ would become $\underline{R}(f)(\underline{u}(ff)'\underline{u}(fa)')$ which is zero (because $\underline{u}(ff)'$, "the effect that Fenwick has upon

himself", is non-existent in this appraisal). In other words, the attributed indirect effect: $\underline{R}(f)\underline{u}(fa)'_i = 0$, and the only possible effect that "Fenwick" can be appraised as having on "modern art" is that of mounting the display (i.e. the straightforward appraisal of Fenwick's action with respect to modern art).

For expression 13.10, the only delineated directional relationship (see expressions 13.6, 13.7 and 13.8) which could correspond to $\underline{u}(xs)'$ is $\underline{u}(as)'$. On substituting "a" for "x", expression 13.10 reads:

$$\underline{R}(f)\underline{u}(fs)'_i = \underline{R}(f)\underline{u}(fa)'\underline{u}(as)' \qquad 13.11$$

from which it follows that "Fenwick" may be appraised as having possible indirect effects on "sales" by way of the intermediary "modern art" ("a"). The appraised possible indirect effects may be of two kinds, (1) a <u>face value</u> one, and (2) one of <u>intentional manipulation</u> by Fenwick of the intermediary "modern art" for his own ends (i.e. his intention to promote sales by mounting a display of modern art). This follows on expanding expression 13.11, i.e.

$$\underline{R}(f)\underline{u}(fs)'_i = \underline{R}(f)\,(\underline{u}(fa)'\underline{u}(as)')$$

$$= (\underline{R}(f)\underline{u}(fa)')\,\underline{u}(as)' + \underline{u}(fa)'\,(\underline{R}(f)\underline{u}(as)') \qquad 13.12$$

$$= \underbrace{\underline{u}(fa)'\underline{u}(as)'}_{\text{(face value effect)}} + \underbrace{\underline{u}(fa)'p(as)'}_{\text{(intentional manipulation)}} \qquad 13.13$$

The first part of expression 13.13 is derived by using result 13.8. In the second part, $p(as)' = \underline{R}(f)\underline{u}(as)'$ denotes the appraised probability of the effect that "Fenwick" has on "sales" as a consequence of the manipulation of "modern art" attributed to him.

(see Chapter 11: Appraisal of indirect manipulative effect).

Since modern art is appraised as decreasing sales (u(as)' negative), the appraised face value indirect effect of Fenwick on sales is seen to correspond to an overall directional dissociation, such that Fenwick is appraised as potentially causing a loss in sales through his plan to mount a modern art display (u(fa)' positive). It is evident that, despite this possible result, Fenwick's actual intention would be appraised as a desire to promote sales through the use of the art display. The term u(fa)'u(as)', therefore, corresponds to the appraisal of a potential unintended effect. The term u(fa)'p(as)', on the other hand, corresponds to the appraisal of the possible outcome (i.e. the success or otherwise) of Fenwick's manipulation of modern art in pursuit of his desire to promote sales. This attributed possibility, it is argued in Chapter 11, is dependent on the referent evaluations of Fenwick and modern art.

The various items of the appraisal of the initial situation in the volitional mode can now be given. For all subjects the single referent intention is "to keep sales at the highest possible volume". For all subjects the dissonant or consonant nature of all but one projected evaluations is the same. The nature and the magnitude of these appraised effects, as contents of the volitional appraisal plane, are represented as below:

r(a)u(as)' (result 13.6): modern art decreases sales (directional dissociation - negative): dissonant with respect to the referent intention "to keep sales at the highest possible volume";

r(f)u(fs)' (result 13.7): Fenwick increases sales (directional association - positive): consonant with respect to the referent intention;

r(f)u(fa)'u(as)' (part of result 13.13): Fenwick potentially decreases sales through the intermediary "modern art" (face value indirect effect: directional dissociation - negative): dissonant with respect to the referent intention.

(NB. The intensities of the projected evaluations are indicated as being dependent on the perceived relevancies, r(a) and r(f), of the agents "modern art" and "Fenwick".)

The remaining projected evaluation concerning the appraised (here, attributed) intentional manipulation by Fenwick of modern art in order to promote sales, r(f)u(fa)'p(as)' (part of result 13.13), is clearly consonant with respect to the subject's referent intention, if appraised as potentially successful, or non-existent, if appraised as not occurring. Whether the nature of this projected evaluation is consonant or non-existent, depends on the conditions of the situation being appraised and on the referent evaluations of Fenwick and modern art held by the subjects. It will, therefore, differ depending upon the experimental group to which the subject belongs. The way in which

this projected evaluation is expected to depend on the referent evaluations will be considered shortly. In the meantime Table 13.18 represents the appraisal in the volitional mode of the initial situation for all subjects.

From the contents of Table 13.8 it follows that the magnitude of volitional dissonance with respect to the referent intention "to promote sales", aroused during the appraisal of the initial situation confronting the subjects, is given by:

$$D(\underline{s}) = G(s)r(s)\frac{\text{sum of dissonant elements}}{\text{sum of consonant elements}}$$

$$= G(s)r(s)\frac{r(a)/\underline{u}(as)'/ + r(f)/\underline{u}(fa)'\underline{u}(as)'/}{r(f)/\underline{u}(fs)'/ + r(f)/\underline{u}(fa)'p(as)'/} \qquad 13.14$$

in which G(s) refers to the ego-involvement in, and r(s) refers to the perceived relevance of the referent intention.

Table 13.8: Volitional appraisal for all subjects

VOLITIONAL APPRAISAL PLANE	IDENTITY STRUCTURE
projected evaluations: (appraised direct and indirect effects)	referent intention:
r(a)u(as)' (-): dissonant	
r(f)u(fs)' (+): consonant	
r(f)u(fa)'u(as)' (+)(-) = (-): dissonant (face value indirect effect)	R(s): (+)
r(f)u(fa)'p(as)' (+)(+) = (+): consonant* or (+)(0) = (0): zero* (indirect manipulative effect)	
r(f)u(fa)'	no referent intention

* depending on the referent evaluations of Fenwick (R(f)) and modern art (R(a)).

The term u(fa)'p(as)' in expression 13.14 represents the appraisal of Fenwick's action with respect to modern art, together with the appraised effectiveness of his possible manipulation of the effect that modern art has on sales. The conditions for its presence or absence will now be examined.

In line with the analysis of Chapter 11, the following identity is assumed*:

$$p(as)' = p(f.a)p(fs)' \qquad 13.15$$

which reads that, the appraised probability of outcome of the manipulation of the directional relationship between modern art and sales, p(as)', is dependent on: the product of the appraised probability of effective manipulation of modern art by Fenwick, p(f.a), and the appraised probability of outcome of the directional relationship between Fenwick and sales, p(fs)'. In other words, if either effective manipulation of modern art by Fenwick is appraised as unlikely (p(f.a) = 0), or the outcome of Fenwick's ability to increase sales is appraised as ineffectual (p(fs)' = 0), then no effective potential manipulation of the effect of modern art on sales would be appraised.

In the absence of firm information in the distal stimuli about the probability of effective manipulation, p(f.a), and about the probability of outcome of Fenwick's intention with respect to sales, p(fs)', it is assumed that the projection of referent evaluations in the identity structure on to the agent (Fenwick) and the intermediary (modern art), would result in a projected evaluation of the effectiveness of the agent's manipulative action.

* It should be remembered that $p(as)' = \underline{R}(f)\underline{u}(as)'$.

At this stage, appeal is made to the results of the analysis in Chapter 11 for the case of conjunctive frames of reference. This is the case in which the agent's intention is appraised by the individual as supporting the self's intention (see Chapter 11: Conjunctive and disjunctive frames of reference), i.e. in the 1960 experiment the self's (qua store-owner's) referent intention is to "keep sales at the highest possible volume" and the agent's (Fenwick's) intention is appraised as a conjunctive desire to promote sales.

Thus, for the case in which the delineated directional relationship $\underline{u}(fs)'$ (Fenwick increases sales) is appraised as conjunctive but uncertain in outcome, the results 11.24 and 11.25 (Chapter 11) are used, i.e.

$$p(f.a)p(fs)' = \underline{u}(fs)' \qquad 13.16$$

when the referent evaluation of the agent "Fenwick" is favourable irrespective of the referent evaluation of the intermediary "modern art" ($\underline{u}(fs)'$ is the delineated directional relationship between "Fenwick" and "sales"); and

$$p(f.a)p(fs)' = 0 \qquad 13.17$$

when the referent evaluation of "Fenwick" is unfavourable irrespective of the referent evaluation of "modern art".

The term $\underline{u}(fa)'p(as)'$ ($= \underline{u}(fa)'p(f.a)p(fs)'$) in expression 13.14 is therefore taken to be either $\underline{u}(fa)'\underline{u}(fs)'$ if condition 13.16 holds,

or zero if condition 13.17 holds. Thus, the magnitude of volitional dissonance aroused during appraisal of the initial situation confronting the subjects, and bound on the assimilation of the contents of the volitional appraisal plane in the absence of distortion during appraisal, becomes:

$$\text{bound:}D(f,a,\underline{s}) = G(s)r(s)\,\frac{r(a)/\underline{u}(as)'/ + r(f)/\underline{u}(fa)'\underline{u}(as)'/}{r(f)/\underline{u}(fs)'/ + r(f)/\underline{u}(fa)'\underline{u}(fs)'/} \qquad 13.18$$

for those subjects for whom the referent evaluation of Fenwick is favourable (irrespective of the evaluation of modern art), i.e. for group 1 and group 2 subjects. (bound:D(f,a,$\underline{s}$) indicates that the portion of the identity structure in which the volitional dissonance is bound contains the entities "Fenwick", "modern art" and "sales", and the referent intention concerning "sales", $\underline{s}$)

For group 3 subjects, for whom the referent evaluation of Fenwick is unfavourable, the corresponding magnitude of bound volitional dissonance is given by:

$$\text{bound:}D(f,a,\underline{s}) = G(s)r(s)\,\frac{r(a)/\underline{u}(as)'/ + r(f)/\underline{u}(fa)'\underline{u}(as)'/}{r(f)/\underline{u}(fs)'/} \qquad 13.19$$

In essence, the difference between expressions 13.18 and 13.19 is that subjects possessing a favourable evaluation of Fenwick are likely to form an additional consonant projected evaluation, compared with those possessing an unfavourable evaluation of him. This

difference would correspond to an attributed potentially effective manipulation of modern art by Fenwick for his own (and the subject's) ends in the former case, compared with a lack of such attributed potentially effective manipulation in the latter case.

The analysis of appraisal in the volitional mode of the initial situation confronting the subjects in the 1960 experiment, together with the analysis of appraisal in the modal mode, completes the total appraisal of the initial situation*. The inclusion, in the volitional mode, of the appraised effects of Fenwick and modern art on sales, and the appraised possible indirect effects of Fenwick on sales (both unintentional - the appraised face value indirect effect, and intentional - the appraised manipulation of modern art in order to promote sales), extends the analysis considerably beyond that given by Rosenberg and Abelson.

THE 1960 EXPERIMENT: INTERACTION BETWEEN DISCREPANCY, MODAL AND VOLITIONAL DISSONANCES

The second distinct situation encountered by the subject during the course of his role-playing the store owner, is defined by the set of three communications which negate the previously assimilated beliefs about the relationships existing between the three entities. This is,

*NB. It is possible that, for individual subjects, one or the other mode predominates.

of course, the time when changes in these beliefs would be expected. It remains, then, to consider the effects of pressures that might assist or resist their change. It is at this stage in the analysis that the extent of the changes in beliefs will be described in terms of their dependence on the interacting pressures arising from the three modes of dissonance.

It will be remembered that the contents of the three communications were:

Art-Sales (AS) communication

that modern art displays actually increase sales volume;

Fenwick-Art (FA) communication

that Fenwick really does not plan to display modern art in the rug department;

Fenwick-Sales (FS) communication

that Fenwick really has failed to maintain sales volume in the rug department.

Each of these communications announces a point of view discrepant with respect to the one previously assimilated into the identity structure. The appraisal of each, therefore, results in the arousal of discrepancy dissonance with respect to the relevant (previously assimilated) referent belief, such that the referent belief will tend to become accommodated to the discrepant point of view, to an extent depending on pressures arising from the external situation and on

pressures arising internally from the identity structure itself. The magnitude of discrepancy dissonance represents the pressure arising from the external situation (dependent on factors examined in Chapter 9), whilst the internal pressures are ones arising from the contributions of the referent beliefs to dissonances bound in both the modal and volitional modes within the identity structure.

In either mode, the direction of the internal pressure (whether it assists or resists the pressure of discrepancy dissonance) depends on whether the referent belief in question contributes to a dissonant or a consonant element associated with the portion of the identity structure containing the bound dissonances. Thus, in one mode the referent belief may contribute to a dissonant element associated with bound dissonance in that mode, and in the other mode the same referent belief may contribute to a consonant element associated with bound dissonance in this second mode, in which case the directions of the respective internal pressures would oppose each other, with the one assisting and the other resisting the pressure of discrepancy dissonance (see Chapter 11: Interaction between discrepancy dissonance, modal dissonance, and volitional dissonance). Such interacting between the three modes of dissonance are now examined for the subjects of the three experimental groups defined by Rosenberg and Abelson.

Group 1 subjects

In the absence of immediate accommodative reappraisal of the internalized referent evaluations of "Fenwick", "modern art" and "sales",

and in the absence of distortion during the appraisal of the initial situation, the dissonances bound in the modal and volitional modes, on the assimilation of the delineated relationships of the initial situation, are given by expressions 13.3 and 13.18, i.e.

$$\text{bound:}D_m = /u(as)/ \left(\frac{G(a)r(a)/R(s)/}{/u(af)R(f)/+/u(aa)R(a)/} + \frac{G(s)r(s)/R(a)/}{/u(sf)R(f)/+/u(ff)R(f)/} \right)$$

(modal dissonance) (13.3)

$$\text{bound:}D_v = G(s)r(s) \frac{r(a)/\underline{u}(as)'/ + r(f)/\underline{u}(fa)'\underline{u}(as)'/}{r(f)/\underline{u}(fs)'/ + r(f)/\underline{u}(fa)'\underline{u}(fs)'/} \qquad (13.18)$$

(volitional dissonance)

Expression 13.18 can be simplified as follows:

$$\text{bound:}D_v = G(s)r(s) \frac{(r(a)+r(f)/\underline{u}(fa)'/)/\underline{u}(as)'/}{r(f) (1+/\underline{u}(fa)'/)/\underline{u}(fs)'/} \qquad 13.20$$

In the above, "bound:D_m" refers to dissonance bound in the modal mode, and "bound:D_v" refers to dissonance bound in the volitional mode.

AS communication

Appraisal of the AS communication results in discrepancy dissonance with respect to the referent (i.e. previously assimilated) belief about the relationship between "modern art" and "sales", and hence results in a pressure for the accommodative reappraisal of this belief. In addition, this referent belief contributes to dissonant elements associated with dissonances bound in both the modal and volitional modes, as is indicated by the presence of u(as) and $\underline{u}(as)'$ in the

numerators of expressions 13.3 and 13.20 above. It follows, therefore, that the tendency for accommodative reappraisal due to the pressure of aroused discrepancy dissonance is such as would tend to decrease dissonances bound in both modes. Since the operation of the processes tending to maximize psychological efficiency is also such as would tend to decrease the bound dissonances, the internal pressures in the modal and volitional modes will tend to assist the accommodative reappraisal of the referent belief about the relationship between "modern art" and "sales", i.e.

the change in evaluation of the relationship between "modern art" and "sales" may be represented by:

$$\text{Delta } u(as) = a(\text{discrep:}D) + a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 13.21$$

in which "a(discrep:D)" represents the contribution towards accommodative reappraisal due to discrepancy dissonance, "a_m(bound:D_m)" represents the contribution supporting accommodative reappraisal due to bound modal dissonance, and "a_v(bound:D_v)" arepresents a similar contribution due to bound volitional dissonance. "P" represents the factor of internal constraints due to the strength of binding of the referent. (c.f. expression 11.42 in Chapter 11)

It is evident that expression 13.21 indicates an over-accommodation of the relationship u(as) to the discrepant point of view expressed in the AS communication, compared with what would bethe case in the absence of the bound dissonances associated with the particular

configuration of affective evaluations and beliefs in the identity structure of group 1 subjects.

FS communication

The appraisal of the point of view, expressed in the FS communication, that Fenwick really fails to maintain sales, results in the arousal of discrepancy dissonance with respect to the referent belief that Fenwick increases sales. But, in this case, the pressure for the accommodative reappraisal of this referent belief due to the discrepancy dissonance is resisted by the internal pressures arising from the bound dissonances in both the modal and volitional modes. This is because the referent belief about the relationship between "Fenwick" and "sales" contributes to consonant elements associated with the bound dissonances in both modes, as is indicated by the presence of u(sf) and u(fs)' in the denominators of expressions 13.3 and 13.20. Since the processes tending to maximize psychological efficiency in the modal and volitional modes operate to minimize any additional increase in the bound dissonances, the resulting pressures are such as would tend to resist an accommodative reappraisal which would diminish such contributions to the relevant consonant elements. Thus, for group 1 subjects:

the change in evaluation of the relationship between "Fenwick" and "sales" is given by:

$$\text{Delta } u(fs) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad 13.22$$

which indicates an under-accommodation of the relationship u(fs) to the discrepant point of view expressed in the FS communication, by comparison with the change in evaluation to be expected in the absence of the particular bound dissonances expressed by 13.3 and 13.20 for group 1 subjects. (c.f. expression 11.45 in Chapter 11)

FA communication

As with the appraisal of the other two communications, appraisal of the FA communication arouses discrepancy dissonance with respect to the relevant referent belief, that is, the previously assimilated belief that "Fenwick" intends to mount a display of "modern art". On examination of expression 13.3, it is evident that the referent belief u(af) contributes to a consonant element associated with bound modal dissonance. Since the pressure for accommodative reappraisal due to the aroused discrepancy dissonance is such as would decrease the contribution of the referent belief to the consonant element, it follows that the accommodative reappraisal of u(af) will tend to be resisted by the internal pressure arising from the presence of bound dissonance in the modal mode.

In the volitional mode, however, the referent belief u(fa)' contributes to both a consonant element (denominator of expression 13.20) and a dissonant element (numerator). This dual role arises as a consequence of the presence of the referent belief (Fenwick intends to mount a modern art display) in both of the previously assimilated possible indirect effects, one of which is dissonant (the face value

indirect effect), the other consonant (the indirect manipulative effect). Thus, considering the bound dissonance in the volitional mode, it follows that, in so far that the referent belief contributes to a consonant element, its accommodative reappraisal will tend to be resisted, but, in so far that it also contributes to a dissonant element, its accommodative reappraisal will tend to be assisted.

Taking into account all the pressures operating: the change in evaluation of the relationship between "Fenwick" and "modern art" is given by:

$$\begin{aligned}\text{Delta } u(fa) &= a(\text{discrep:}D) - a_m(\text{bound:}D_m) \\ &\quad - a_{v1}(\text{bound:}D_v) + a_{v2}(\text{bound:}D_v) - P \\ &= a(\text{discrep:}D) - a_m(\text{bound:}D_m) - (a_{v1} - a_{v2})(\text{bound:}D_v) - P\end{aligned} \qquad 13.23$$

Whether the net effect of the internal pressures in the volitional mode is that of resistance or assitance to the pressure for accommodative reappraisal would depend on whether $(a_{v1} - a_{v2})$ is positive or negative.

Expressions 13.21, 13.22 and 13.23 summarize the expected changes in evaluation of the group 1 subject's beliefs about the three relationships after reading the counter-communications. If it can be assumed that each counter-communication is identical in its ability to arouse discrepancy dissonance, it is evident from the three expressions that: the greatest change to be expected in the direction of the

counter-communications is in the subject's evaluation of the relationship between "modern art" and "sales" (u(as) - expression 13.21), the least in the subject's evaluation of the relationship between "Fenwick" and "sales" (u(fs) - expression 13.22), with the change in the subject's evaluation of the relationship between "Fenwick" and "modern art" (u(fa) - expression 13.23) being inbetween.

A comparison of the expected changes in evaluations, derived from the analysis of interactions between discrepancy, modal and volitional dissonances, with the balance model predictions concerning the "path towards appropriate balance" indicates that both formulations lead to similar gross conclusions for group 1 subjects. Thus, in order to reach "appropriate balance" according to the balance model the (single) sign change required would be the one involving the Art-Sales relationship, that is, the change in evaluation of this relationship would have to be substantial, whilst the changes in evaluation of the Fenwick-Sales and Fenwick-Art relationships would have to be small. It is evident that, in a gross fashion, this agrees with the present analysis.

However, bearing in mind the equivalence between the balance representation and modal dissonance, the predictions made on the balance model with respect to "appropriate balance" can be considered to be summarized by expression 13.21, 13.22 and 13.23 by omitting the contributions due to volitional dissonance in these expressions. Examination of the terms thus omitted demonstrates that the contributions due to volitional dissonance act in conjunction with the contributions

due to modal dissonance for the accommodative reappraisal of two of the evaluations (expressions 13.21 and 13.22). (In the third case the contribution due to volitional dissonance is seen to be small by comparison with the other two.) In other words, the contributions due to volitional dissonance are also such as would tend to result in "appropriate balance".

From this it follows that instances of "appropriate balance" achieved in the 1960 experiment may just as wellbe explained in terms of volitional dissonance pressures, as in terms of balance predictions (modal dissonance pressures), or as in terms of the interaction between modal and volitional pressures. Thus, the fact that so many group 1 subjects in the 1960 experiment achieved "appropriate balance" can be well explained in terms of the volitional mode and modal mode pressures operating in conjunction. Moreover, it is possible that the presence of the volitional mode pressure is mainly responsible for the large number of group 1 "appropriate balances".

The relative weights of the discrepancy, modal and volitional pressures affecting accommodative reappraisal are likely to vary from individual to individual. In the absence of any knowledge of the subjects' propensities with respect to the operation of the dissonance pressures in the three modes, it remains an empirical matter to determine the mean relative weights for the group as a whole. However, whatever the relative weights, the operation in conjunction of modal and volitional pressures for group 1 subjects, would be expected to result in a high incidence of "appropriate balance" in this group.

Group 2 subjects

The assimilation following the appraisal of the initial situation (without distortion of the distal stimuli and without immediate accommodative reappraisal of referent evaluations) of the delineated relationships into the identity structure of group 2 subjects, results in dissonances being bound in the modal and volitional modes. The magnitude of bound modal dissonance is given by expression 13.4, and that of bound volitional dissonance is given by expression 13.18 (or simplified: expression 13.20), i.e.

$$\text{bound:}D_m = /u(fa)/ \left(\frac{G(f)r(f)/R(a)/}{/u(fs)R(s)/+/u(ff)R(f)/} + \frac{G(a)r(a)/R(f)/}{/u(as)R(s)/+/u(aa)R(a)/} \right)$$

(modal dissonance) 13.4

$$\text{bound:}D_v = G(s)r(s) \frac{(r(a) + r(f)/\underline{u}(fa)'/)/\underline{u}(as)'/}{r(f) (1 + /\underline{u}(fa)'/)/\underline{u}(fs)'/} \qquad (13.20)$$

(volitional dissonance)

The expected accommodative reappraisals of the beliefs about the three relationships, on appraisal of the three counter-communications, are given below for group 2 subjects. (The analysis is carried out in the same manner as for group 1 subjects, with consideration being given to the contribution of the referent beliefs to dissonant or consonant elements associated with bound dissonances in the modal and volitional modes. The appearance of a referent belief in the numerator of the above expressions denotes its contribution to a dissonant element, whilst its appearance in the denominator denotes its contribution to a consonant element.)

AS communication

The change in evaluation of the relationship between "modern art" and "sales" is given by:

$$\text{Delta } u(as) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 13.24$$

(c.f. expression 11.44 in Chapter 11)

FS communication

The change in evaluation of the relationship between "Fenwick" and "sales" is given by:

$$\text{Delta } u(fs) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad 13.25$$

FA communication

The change in evaluation of the relationship between "Fenwick" and "modern art" is given by:

$$\text{Delta } u(fa) = a(\text{discrep:}D) + a_m(\text{bound:}D_m) - (a_{v1}-a_{v2})(\text{bound:}D_v) - P \qquad 13.26$$

Comparison between the group 2 expressions (13.24, 13.25 and 13.26) for accommodative reappraisal of the three referent beliefs and the corresponding group 1 expressions (13.21, 13.22 and 13.23), reveals that the contribution of volitional pressures is the same for both groups. This is because bound volitional dissonance is the same for both groups. But the contribution of modal pressures differ for two of the three referent beliefs, those concerning the Art-Sales relationship (13.21 and 13.24) and the Fenwick-Art relationship (13.23 and 13.26).

As before, on omitting the volitional mode contributions, the

remaining modal contributions would correspond, in their effects, to the balance model prediction concerning the single-sign-change path to "appropriate balance". Thus, for the Fenwick-Art relationship (the locus of "imbalance") the modal dissonance pressure assists the discrepancy dissonance pressures towards accommodative reappraisal, whilst for the other two relationships, the modal pressures tend to resist their accommodative reappraisals.

However, the contributions of volitional dissonance pressures upset this "appropriate balance resolution", since they continue to operate in the same manner as for group 1 subjects, and, as is evident on inspection of expressions 13.24 and 13.26, they operate in opposition to the modal dissonance pressures*. Thus, whereas for group 1 subjects the volitional pressures are such as support the modal pressures and hence "appropriate balance", by contrast for group 2 subjects, these pressures tend to be antagonistic and militate against "appropriate balance".

Group 3 subjects

The magnitudes of bound modal and bound volitional dissonances for group 3 subjects, are given by expressions 13.5 and 13.19 respectively, i.e.

$$\text{bound: } D_m = /u(fs)/ \left(\frac{G(f)r(f)/R(s)/}{/u(fa)R(a)/+/u(ff)R(f)/} + \frac{G(s)r(s)/R(f)/}{/u(sa)R(a)/+/u(ss)R(s)/} \right) \quad (13.5)$$

(modal dissonance)

* This is clearly evident in expression 13.24, but depends on whether $(a_{v1} - a_{v2})$ is positive or negative in expression 13.26, which may well vary from individual to individual.

$$\text{bound:}D_v = G(s)r(s)\,\frac{r(a)/\underline{u}(as)'/ + r(f)/\underline{u}(fa)'\underline{u}(as)'/}{r(f)/\underline{u}(fs)'/} \qquad (13.19)$$

(volitional dissonance)

Expression 13.19 may be simplified to:

$$\text{bound:}D_v = G(s)r(s)\,\frac{(\,r(a) + r(f)/\underline{u}(fa)'/)/\underline{u}(as)'/}{r(f)/\underline{u}(fs)'/} \qquad 13.27$$

With the aid of expressions 13.5 and 13.27 above, the expected accommodative reappraisal of the referent beliefs for group 3 subjects, following the appraisal of the counter-communications, may be derived.

AS communication

The change in evaluation of the relationship between "modern art" and "sales" is given by:

$$\text{Delta } u(as) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 13.28$$

FS communication

The change in evaluation of the relationship between "Fenwick" and "sales" is given by:

$$\text{Delta } u(fs) = a(\text{discrep:}D) + a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad 13.29$$

(c.f. expression 11.43 in chapter 11)

FA communication

The change in evaluation of the relationship between "Fenwick" and "modern art" is given by:

$$\text{Delta } u(fa) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 13.30$$

Examination of expressions 13.28, 13.29 and 13.30 indicates that the modal dissonance pressures tend to operate towards an "appropriate balance resolution" for group 3 subjects, but that they are opposed by the volitional dissonance pressures, which therefore militate against such a resolution. The volitional dissonance pressures operate in the same way as for group 1 and group 2 subjects on the referent beliefs about the Art-Sales and Fenwick-Sales relationships, i.e. they support the accommodative reappraisal of the Art-Sales relationship, but oppose that of the Fenwick-Sales relationship. For the Fenwick-Art relationship, however, the volitional pressure assists the accommodative reappraisal of the referent belief, in contrast to the ambiguous volitional pressures operating in the cases of group 1 and group 2 subjects. This is because of the absence of an assimilated possible indirect manipulative effect in the identity structure of the group 3 subject, due to the unfavourable referent evaluation of Fenwick.

In summary, by comparing the interpretation in terms of interacting modes of dissonance with the balance formulation of the 1960 experiment, it is seen that very different predictions would be made for the three experimental groups on the basis of the analysis of interacting modes. For group 1 subjects, volitional mode pressures are seen to operate in conjunction with modal mode pressures, thereby enhancing the likelihood of instances of "appropriate balance". For group 2 and group 3 subjects, the volitional pressures operate in opposition to the modal pressures and militate against instances of "appropriate balance". The actual empirical results obtained by Rosenberg and Abelson are suggestive in this

respect. Whilst 15 out of 26 of group 1 subjects achieved "appropriate balance", only one out of 24 of group 2 subjects and only three out of 22 of group 3 subjectsdid so.

In order to investigate empirically the predictions based on the analysis of interacting discrepancy, modal, and volitional dissonance pressures during accommodative reappraisal, a partial replication of the 1960 experiment was performed. The hypotheses to be tested and the modifications incorporated in this replication will now be described.

PARTIAL REPLICATION OF THE 1960 ROSENBERG AND ABELSON EXPERIMENT

In the partial replication of the 1960 Rosenberg and Abelson experiment, the general procedure and subject matter of the original experiment were followed. Thus, the subjects were asked to role play a "department store owner" who is confronted with the almost identical situation as in the original, which involved his concern with "achieving the highest possible sales volume", Fenwick - the Rug Department sales manager, and a display of modern art. Communications, in the form of three reports, were presented to the subjects and had basically the same import as those used by Rosenberg and Abelson.

The general aims of the partial replication were:

(1) to test predictions concerning the changes in evaluations of certain beliefs* according to the analysis of interacting pressures

* The beliefs are ones that the subjects assimilate whilst playing the role of the store owner.

arising from the simultaneous presence of discrepancy, modal, and volitional dissonances during accommodative reappraisal;

(2) to obtain estimates of the magnitudes of modal and volitional dissonances for each subject before and after accommodative reappraisal, so that changes in modal and volitional dissonances could be followed;

(3) to provide favourable circumstances for "balance resolutions" that would be expected on the basis of balance model predictions, whilst circumventing the methodological criticism concerning possible "experimenter bias" in the instruction "to feel free to change both concept evaluations and perceived relations" in the 1960 experiment.

The inclusion of (3) above was designed to test for the efficacy of the balance model predictions, as compared with those derived from the analysis of interacting modes of dissonance.

Description of the present study

As in the original experiment each subject was given a pamphlet which, after a few preliminary questions about sex, age, and occupation (the subjects for the present study were drawn mainly from outside the university), introduced the role-playing purpose of the study in the following way:

"We would like you to try the best you can to act out the role of another person and deal with the problems that he might have to face. You will be told about some of this person's basic values and the kind of situation

confronting him. You are to try and be this person and to report on how you feel in his position."

A major methodological consideration in the present replication was to minimize as much as possible the effects of extraneous pressures. Since one source of such effects might be the nature of the "supporting evidence" used to establish the person, his values, and the situation he encounters, the bare minimum of "information" was included. Thus, the person to be role played and his values were described in minimum outline only. For example, group 2 subjects were instructed in the following way:

"THE PERSON :

'You are a department store owner. You are much concerned with achieving the highest possible sales volume and you take a strong interest in sales promotion. You have a very high opinion of your Rug Department sales manager, Fenwick, whom you like very much. But you have a very strong dislike for modern art.'"

The relationships between the entities "modern art", "sales" and "Fenwick" were established with the minimum of "supporting evidence". Thus, all subjects were instructed about the situation confronting them as follows:

"THE SITUATION :

'On your desk is a report by a leading market research organization which finds that modern art displays are found distracting by customers and lead to loss in sales. Today Fenwick told you that he intended to mount

a display of modern art and had been working on the details during the week. Yesterday an outside firm of auditors produced figures showing that Fenwick had increased sales substantially in the Rug Department since the tenure of his position one year ago.'"

Following the description of the person and the situation confronting him, the subjects were further instructed as follows: "Study carefully the person and the situation above. In order to find out whether you have understood the situation and the values you hold as store owner, a few straightforward questions will be asked of you."

The questions that followed were designed to elicit:

(a) the internalized degree of evaluation of each entity - Fenwick, Modern art, Sales - by way of ratings on three 21 point scales labelled "very negative (dislike)" at the left hand end and "very positive (like)" at the right hand end (i.e. giving numerical values for R(f), R(a) and R(s));

(b) measures of the degree of ego-involvement in the three entities by way of comparative ratings on a single 11 point scale labelled "unimportant" at the zero end and "very important" at the other end - the instruction preceeding the scale was:

"Irrespective of how much you like or dislike Fenwick, Modern Art, and promoting Sales, how strongly do you, as store owner, feel about them in everyday life? How much do they normally concern you? How important are they to you in general?" (i.e. giving numerical values for G(f), G(a) and G(s));

(c) the extent and type of relationship perceived to hold between the entities taken two at a time, by way of three 21 point scales (i.e. giving numerical values for both u(fs) = u(sf), u(fa) = u(af), and u(as) = u(sa) in the modal mode and u(fs)', u(fa)' and u(as)' in the volitional mode);

(d) measures of the perceived relevance of the entities within the context of the situation, by way of comparative ratings on a single 11 point scale labelled "irrelevant" at the zero end and "very relevant" at the other end (i.e. giving numerical values for r(f), r(a) and r(s)).

Full details of the instructions and the scales may be found in Appendix B which gives a specimen example of the pamphlet used.

The additional measures (b) and (d), i.e. measures of ego-involvement in and perceived relevance of the three entities, were included in the present study so that estimates of modal and volitional dissonance could be determined for each subject. After their completion of the rating scales concerned with the initial situation, the subjects read the three communications containing the discrepant information. Again, only the very minimum of "supporting evidence" was given in an effort to prevent inherent biases in the persuasive powers of the communications. In addition, care was taken with the Fenwick-Art communication to maintain Fenwick as the acting agent, in contrast to the situation in the 1960 experiment in which other agents acted upon him (so as to prevent him from displaying modern art). The communications were presented as follows:

"The following day you receive these reports:

1. 'A store officer has just come back from completing some investigations into market trends. General market trends in rugs appear to be booming. Compared with these, Fenwick's performance on sales seems rather poor.'
(i.e. the Fenwick-Sales communication)

2. 'A second market research organization in a report you are reading challenges data purporting to show that sales decline when modern art is displayed in showrooms. It contends that such displays stimulate attention, promote interest, and help sales.'
(i.e. the Art-Sales communication)

3. 'Another store officer walks in and during a chat says that Fenwick is having second thoughts about mounting the modern art display.'"
(i.e. the Fenwick-Art communication)

As in the 1960 experiment the subjects reception of the three communications was obtained. This was done in order to evaluate the two Rosenberg and Abelson predictions about <u>receptivity</u> to these communications i.e. the "primary prediction" that the communication which provided the means for balance by way of one sign change would be the most acceptable of the three, and the "secondary prediction" that, of the other two communications, the one implying two sign changes to reach balance would be better received that the one implying three sign changes. The outcome

of the test of these predictions, which were both confirmed in the 1960 experiment, would indicate the degree to which the present study replicated the original.

The subject's reception of the three communications was obtained by way of comparative ratings on a single 11 point scale labelled "inaccurate" at the zero end and "completely accurate" at the other end*. The methodological criticism of the original study concerning the instruction to the subjects "to feel free to change both concept evaluations and perceived relations as they thought through the import of the communications" was avoided, and no instructions were given in the present study which might suggest how the subjects should proceed with their role-playing.

Following the reception of the three reports, and the consequent probable reappraisal of his original evaluations of the relationships between Fenwick, Modern Art, and Sales, the subject was asked to indicate his present evaluations of these relationships. He was also asked about his present evaluations of Fenwick, Modern Art, and Sales, about his present ego-involvement in these three entities, and about their relevance in the present situation. The set of eight rating scales used for this purpose was identical to the one used to elicit the subject's appraisal of the initial situation. This second set was preceeded by the general comment:

* In the original experiment three separate five point scales were used for each communication to evaluate how much each pleased the subject, how much each persuaded him, and how accurate each appeared to him. Since analyses of variance on all three ratings gave identical conclusions, one only

(contd.)

"These reports will probably have led you to reappraise the situation and your feelings about it. This being so, we want to know what your present feelings are."

The second set of rating scales enabled:

(a) relative changes in evaluation of the relationships between the entities to be compared with the corresponding predictions based on the analysis of interacting modes of dissonance;

(b) estimates of the magnitudes of modal and volitional dissonances remaining after reappraisal to be determined and compared with pre-reappraisal estimates; and

(c) the number of balance resolutions to be ascertained.

Finally, the subject was asked what action he would take, whether or not he would dismiss Fenwick, transfer him to another post, or direct him not to mount the modern art display. These questions, besides giving additional useful information, allowed the role-playing sequence to be brought to a natural close.

ASPECT I: HYPOTHESES: "INTERACTING MODES OF DISSONANCE" - THREE COUNTER-COMMUNICATIONS

There are two aspects of the present study. These correspond roughly to the two sets of three groups run by Rosenberg and Abelson (1960) in their second study. The first aspect follows the pattern of the first set of three groups in that study and is described directly. The second aspect is concerned with imposing constraints on the

(*contd.)
(the accuracy scale) was used in the present study in the interests of economy.

"single-sign-change path to balance resolution" and will be considered later; this aspect parallels roughly the second set of three groups in the original study.

In the 1960 study, the subjects were assigned to three experimental groups, the analyses of which have already been given in terms of interacting modes of dissonance. In the present study a fourth group was introduced in order to provide for a more adequate test of the present theoretical formulation, and also because it was one neglected by Rosenberg and Abelson.

The four groups of the present study are summarized in Table 13.9 in terms of the affective evaluations that the subjects were requested to internalize. The additional group is the one in which the subjects were asked to hold favourable evaluations of "high sales volume" and "modern art", but an unfavourable evaluation of "Fenwick". The other three correspond to the ones used by Rosenberg and Abelson.

Table 13.9: Affective evaluations internalized by members of the four experimental groups in which the affective evaluations toward the three entities are favourable (+) or unfavourable (-) as indicated

	affective evaluation of:		
group No.	high sales volume	Fenwick	modern art
1	+	+	+
2	+	+	-
3	+	-	-
4	+	-	+

Before the hypotheses to be tested can be stated, the analysis

of appraisal and reappraisal for members of the fourth experimental group has to be given. Modal appraisal is summarized in Table 13.10, and the corresponding expression for bound modal dissonance on the assimilation of the contents of the appraisal plane is given below:

$$\begin{aligned} \text{bound:}D_m &= D(f) + D(a) + D(s) \\ \text{(group 4)} &= G(f)r(f)\,\frac{/u(fa)R(a)/ + /u(fs)R(s)/}{/u(ff)R(f)/} \\ &\quad + G(a)r(a)\,\frac{/u(af)R(f)/ + /u(as)R(s)/}{/u(aa)R(a)/} \\ &\quad + G(s)r(s)\,\frac{/u(sf)R(f)/ + /u(sa)R(a)/}{/u(ss)R(s)/} \end{aligned} \qquad 13.31$$

Expression 13.31 may be rearranged as follows:

$$\begin{aligned} \text{bound:}D_m &= /u(fa)/\left(\frac{G(f)r(f)/R(a)/}{/u(ff)R(f)/} + \frac{G(a)r(a)/R(f)/}{/u(aa)R(a)/}\right) \\ \text{(group 4)} &\quad + /u(fs)/\left(\frac{G(f)r(f)/R(s)/}{/u(ff)R(f)/} + \frac{G(s)r(s)/R(f)/}{/u(ss)R(s)/}\right) \\ &\quad + /u(as)/\left(\frac{G(a)r(a)/R(s)/}{/u(aa)R(a)/} + \frac{G(s)r(s)/R(a)/}{/u(ss)R(s)/}\right) \end{aligned} \qquad 13.32$$

(It will be remembered that u(fa) = u(af), u(fs) = u(sf), and u(as) = u(sa) in the modal mode.)

By comparison with groups 1, 2 and 3 (see expressions 13.3, 13.4, and 13.5), the expression for bound modal dissonance is very different for group 4. This is because all three delineated relationships,

u(fa), u(fs) and u(as), contribute to dissonant elements in the modal mode for group 4 subjects, in contrast to the case for the subjects of groups 1, 2 and 3, for whom only one of the delineated relationships contributes to dissonant elements (i.e. u(as) for group 1, u(fa) for group 2, and u(fs) for group 3).

Table 13.10: Modal appraisal for group 4 subjects

(cf. Tables 13.5, 13.6, and 13.7 for group 1, group 2 and group 3 subjects respectively)

IDENTITY STRUCTURE	MODAL APPRAISAL PLANE	
referent evaluations:	projected evaluations:	
	u(fa) R(a)	(+)(+) = (+) dissonant
R(f) (-)	u(fs) R(s)	(+)(+) = (+) dissonant
	u(ff) R(f)	(+)(-) = (-) consonant
	u(af) R(f)	(+)(-) = (-) dissonant
R(a) (+)	u(as) R(s)	(-)(+) = (-) dissonant
	u(aa) R(a)	(+)(+) = (+) consonant
	u(sf) R(f)	(+)(-) = (-) dissonant
R(s) (+)	u(sa) R(a)	(-)(+) = (-) dissonant
	u(ss) R(s)	(+)(+) = (+) consonant

Translated into "balance model" terminology, the analysis of modal dissonance for group 4 subjects would indicate that no "one-sign-change path to balance resolution" exists for these subjects, and that all paths to balance resolution would involve two or more sign changes. Since the three counter-communications point directly to the three-sign-change resolution, it is evident that the balance model would be in difficulties with regard to making predictions about the paths to balance.

The expression for bound volitional dissonance for group 4 subjects is the same as for group 3 subjects, for whom the referent evaluation of Fenwick is also unfavourable. It is:

$$\text{bound:}D_v = \mathcal{C}(s)r(s)\,\frac{(\,r(a) + r(f)/\underline{u}(fa)'/)/\underline{u}(as)'/}{r(f)/\underline{u}(fs)'/}$$

(13.27, simplified from 13.19)

The expected accommodative reappraisal of the referent beliefs for group 4 subjects following the appraisal of the counter-communications, may be derived with the aid of expressions 13.32 and 13.27 above.

AS communication

The change in evaluation of the relationship between "modern art" and "sales" is given by:

$$\text{Delta } u(as) = a(\text{discrep:}D) + a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 13.33$$

(It will be remembered that pressures resisting discrepancy dissonance derive from the contributions of the referent beliefs to bound consonant elements, i.e. to ones present in the denominators of expressions 13.32 and

13.27, and that assisting pressures derive from their contributions to bound dissonant elements, i.e. to ones present in the numerators of expressions 13.32 and 13.27).

FS communication

The change in evaluation of the relationship between "Fenwick" and "sales" is given by:

$$\text{Delta } u(fs) = a(\text{discrep.}D) + a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad 13.34$$

FA communication

The change in evaluation of the relationship between "Fenwick" and "modern art" is given by:

$$\text{Delta } u(fa) = a(\text{discrep:}D) + a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 13.35$$

The analysis given above for group 4 subjects may now be combined with the analyses previously given for the other groups, and a set of predictions derived. The hypotheses to be tested, concerning the postulated interaction between the aroused discrepancy dissonance and the bound dissonances in the modal and volitional aspects of the identity structure, focus on the expected differences across experimental groups in accommodative reappraisal of the previously established beliefs about the relationships between "modern art" and "sales", u(as), between "Fenwick" and "sales", u(fs), and between "Fenwick" and "modern art", u(fa). Thus, Table 13.11 summarizes the expected changes in evaluations of the Art-Sales relationship for the four experimental groups, where these are given in terms of the previously derived expressions (indicated in brackets).

Table 13.11: Expected changes in evaluation of the Art-Sales relationship following the AS communication

EXPECTED CHANGE (experimental group)	CONTRIBUTION TO EXPECTED CHANGE DUE TO: arcused discrepancy dissonance	bound modal dissonance	bound volitional dissonance	internal constraint of binding
(1) Delta u(as) =	$a(\text{discrep:}D) + a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P$			(13.21)
(2) Delta u(as) =	$a(\text{discrep:}D) - a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P$			(13.24)
(3) Delta u(as) =	$a(\text{discrep:}D) - a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P$			(13.28)
(4) Delta u(as) =	$a(\text{discrep:}D) + a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P$			(13.33)

The values of the factors "a", "a_m", and "a_v" will, in general, differ from individual to individual depending on the relative intensities of the activated modes for each individual, such that for certain individuals their prime mode of operation may be the modal mode, whereas for others it may be the volitional mode, and so on. If it is assumed, however, that such individual characteristics are randomised within each group of subjects, then it follows from the above that the mean effect for certain groups should differ from the mean effect for other groups.

In particular, the mean change in evaluation of u(as) should be greater for groups 1 and 4 than for groups 2 and 3, and, in addition, there should be no differences in the mean change between groups 1 and 4

and likewise between groups 2 and 3. This is because, in groups 1 and 4, both modal and volitional pressures assist the tendency towards accommodative reappraisal due to discrepancy dissonance, whilst in groups 2 and 3 volitional pressures assist but modal pressures resist accommodative reappraisal. Thus, in terms of the expected outcomes after the subjects' reception of the AS communication, it is predicted that the subjects of groups 1 and 4 will have beliefs tending more towards an associative relationship between Art and Sales than will the subjects of groups 2 and 3 (the originally established belief being a dissociative one). Therefore, in relation to the Art-Sales relationship, the hypothesis to be tested is that:

Hypothesis I-AS

The outcome beliefs about the Art-Sales relationship for groups 1 and 4 will tend towards an associative relationship to a greater extent than will the corresponding outcome beliefs for groups 2 and 3 and, in addition, no systematic differences in these outcome beliefs will exist between groups 1 and 4, and between groups 2 and 3.

Table 13.12: Expected changes in evaluation of the Fenwick-Sales relationship following the FS communication

EXPECTED CHANGE (experimental group)	CONTRIBUTION TO EXPECTED CHANGE DUE TO: aroused discrepancy dissonance	bound modal dissonance	bound volitional dissonance	internal constraint of binding
(1) Delta u(fs) =	a(discrep:D) -	a_m(bound:D_m) -	a_v(bound:D_v) -	P (13.22)
(2) Delta u(fs) =	a(discrep:D) -	a_m(bound:D_m) -	a_v(bound:D_v) -	P (13.25)
(3) Delta u(fs) =	a(discrep:D) +	a_m(bound:D_m) -	a_v(bound:D_v) -	P (13.29)
(4) Delta u(fs) =	a(discrep:D) +	a_m(bound:D_m) -	a_v(bound:D_v) -	P (13.34)

In the case of the Fenwick-Sales relationship (Table 13.12), volitional pressures resist the tendency towards accommodative reappraisal due to the presence of discrepancy dissonance in all groups, but in groups 1 and 2, modal pressures also resist, whilst in groups 3 and 4, modal pressures assist that tendency. Thus, using the same arguments as before, it follows that the mean change in evaluation of u(fs) should be greater for groups 3 and 4, than for groups 1 and 2, and that there should be no differences in mean change between groups 1 and 2, and between groups 3 and 4. The hypothesis to be tested in relation to the Fenwick-Sales relationship is therefore that:

Hypothesis I-FS

The outcome beliefs about the Fenwick-Sales relationship for groups 3 and 4, will tend away from an associative relationship to a greater extent than will the corresponding outcome beliefs for groups 1 and 2 and, in addition, no systematic differences in these outcome beliefs will exist between groups 1 and 2, and between groups 3 and 4.

It should be remembered that the originally established belief for all subjects is that of an associative relationship between Fenwick and Sales. It will also be noted that, on treating the expressions for change in the Art-Sales relationship on a comparable basis with the expressions for change in the Fenwick-Sales relationship*, the greatest mean change to be expected is in the Art-Sales relationship for groups 1 and 4, and the least mean change to be expected is in the Fenwick-Sales relationship for groups 1 and 2 (i.e. assuming that the original establishment of the two beliefs and the effectiveness of the corresponding counter-communications are comparable). This follows from the role of volitional pressures, which assist the accommodative reappraisal of the Art-Sales relationship for all groups, but which resist the accommodative reappraisal of the Fenwick-Sales relationship for all groups, together with the particular role of the modal pressures for the above-mentioned groups.

* comparing the expressions in Table 13.11 for the Art-Sales relationship with those in Table 13.12 for the Fenwick-Sales relationship.

Table 13.13: Expected changes in evaluation of the Fenwick-Art relationship following the FA communication

EXPECTED CHANGE (experimental group)	CONTRIBUTION TO EXPECTED CHANGE DUE TO: aroused discrepancy dissonance	bound modal dissonance	bound volitional dissonance	internal constraint of binding
(1) Delta u(fa) =	$a(\text{discrep:}D)$	$-a_m(\text{bound:}D_m)$	$-(a_{v1}-a_{v2})(\text{bound:}D_v)$	$-P$ (13.23)
(2) Delta u(fa) =	$a(\text{discrep:}D)$	$+a_m(\text{bound:}D_m)$	$-(a_{v1}-a_{v2})(\text{bound:}D_v)$	$-P$ (13.26)
(3) Delta u(fa) =	$a(\text{discrep:}D)$	$-a_m(\text{bound:}D_m)$	$+a_v(\text{bound:}D_v)$	$-P$ (13.30)
(4) Delta u(fa) =	$a(\text{discrep:}D)$	$+a_m(\text{bound:}D_m)$	$+a_v(\text{bound:}D_v)$	$-P$ (13.35)

It is evident that in the case of the Fenwick-Art relationship (Table 13.13), the modal mode pressure plays the same role for the subjects of groups 1 and 3 (for whom it resists accommodative reappraisal), and again, but in a different sense, for the subjects of groups 2 and 4 (for whom it assists accommodative reappraisal). In addition, the ambiguity of the volitional pressure is the same for the subjects of groups 1 and 2; also, the assisting nature of the volitional pressure is the same for the subjects of groups 3 and 4.

Thus, it is predicted that a comparison of the mean outcome of beliefs about the Fenwick-Art relationship for groups 1 and 3 pooled together,

against the corresponding mean outcome for groups 2 and 4 also pooled together, would indicated that the latter tends away from the original associative relationship to a greater extent than the former (i.e. corresponding to the effect of modal pressures). It is also predicted that a comparison of the mean outcome of beliefs about the Fenwick-Art relationship for groups 3 and 4 taken together, against the corresponding mean outcome for groups 1 and 2 taken together, would indicate a greater tendency away from an associative relationship for the latter, compared with the former (i.e. corresponding to the effect of volitional pressures). In other words, two hypotheses concerning the Fenwick-Art relationship are to be tested:

Hypothesis I-FA(1) (modal effect)

The mean outcome of beliefs about the Fenwick-Art relationship for groups 2 and 4 taken together, will tend away from an associative relationship to a greater extent than will the corresponding mean outcome of beliefs for groups 1 and 3 taken together.

Hypothesis I-FA(2) (volitional effect)

The mean outcome of beliefs about the Fenwick-Art relationship for groups 3 and 4 taken together, will tend away from an associative relationship to a greater extent than will the corresponding mean outcome of beliefs for groups 1 and 2 taken together.

It also follows that no systematic difference should be detected between the mean of the pooled outcome beliefs for groups 1 and 4, and the mean of the pooled outcome beliefs for groups 2 and 3.

ASPECT I: ENHANCED CONDITIONS FOR "TWO-SIGN-CHANGE BALANCE RESOLUTIONS"

Before the results of testing the above hypotheses are given, another experimental manipulation, which was designed to enhance the possibility of "two-sign-change balance resolutions", is described. This manipulation simply involved an attempt to lessen the constraining pressure against changing the evaluations of the entities Fenwick and Modern Art, so that, for a possible two-sign-change path to balance, the appropriate entity (or concept) evaluations would be relatively free to change. Its purpose was to replace the inadmissable instruction to "feel free to change concept evaluations" of the original 1960 experiment, whilst at the same time providing favourable circumstances for such changes in accordance with the balance model hypothesis.

Thus, each of the groups 1, 2 and 3 (corresponding to the three groups used by Rosenberg and Abelson) was subdivided into three, such that the subjects of the first subgroup were instructed to feel a very strong like or dislike for Fenwick and Modern Art, the subjects of the second subgroup were instructed to feel very strongly about Fenwick but only mildly about Modern Art, and the subjects of the third subgroup were instructed to feel mildly about Fenwick but strongly about Modern Art. In every case the subject was instructed to feel strongly about achieving the highest possible sales volume. These subgroups are summarized below:

	high sales volume	Fenwick	modern art	
group 1	+ +	+ +	+ +	subgroup A
	+ +	+ +	+	" B
	+ +	+	+ +	" C
group 2	+ +	+ +	- -	subgroup D
	+ +	+ +	-	" E
	+ +	+	- -	" F
group 3	+ +	- -	- -	subgroup G
	+ +	- -	-	" H
	+ +	-	- -	" I

in which the affective evaluations towards the three entities were to be very favourable (++) or very unfavourable (--), or only mildly favourable (+), or mildly unfavourable (-), as indicated.

The following are examples of the instructions to the subjects which illustrate the relevant manipulations for the three subgroups of group 2:

subgroup D

"You have a very high opinion of your Rug Department sales manager, Fenwick, whom you like very much.
But you have a very strong dislike for modern art."

subgroup E

"You have a very high opinion of your Rug Department sales manager, Fenwick, whom you like very much.
You rather dislike modern art though you have no strong feelings about it."

subgroup F

"You rather like your Rug Department sales manager, Fenwick, although

you have no strong feelings about him.

But you have a very strong dislike for modern art."

From the respective attenuation of the constraints on changing appropriate entity evaluations, it follows from the balance model hypothesis that the possibility of two-sign-change balance resolutions should be enhanced for the following subgroups, for whichthe appropriate resolutions are shown:

Configuration of affective evaluations and beliefs about the relationships between the entities, in terms of "bands";

	Initially	On successful two-sign-change balance resolution	
Group 1 subgroup B			
A relation S	+n+	-n+	(in which the evaluation of
F " A	+p+	+n-	Modern Art has changed from
F " S	+p+	+p+	favourable to unfavourable)
Group 2 subgroup E			
A relation S	-n+	+p+	(in which the evaluation of
F " A	+p-	+p+	Modern Art has changed from
F " S	+p+	+p+	unfavourable to favourable)
Group 2 subgroup F			
A relation S	-n+	-n+	(in which the evaluation of
F " A	+p-	-p-	Fenwick has changed from
F " S	+p+	-n+	favourable to unfavourable)
Group 3 subgroup I			
A relation S	-n+	-n+	(in which the evaluation of
F " A	-p-	+n-	Fenwick has changed from
F " S	-p+	+p+	unfavourable to favourable)

It will be remembered that the "most appropriate path to balance" (ie. one sign change) involves the changing of the evaluation of the relationship: for group 1, between Art and Sales from a dissociation to an association; for group 2, between Fenwick and Art from an association to a dissociation; and for group 3, between Fenwick and Sales from an association to a dissociation. In addition to such instances of the "most appropriate path to balance" it would be expected that instances of two-sign-change resolutions would tend to conform to the subgroups listed above.

ASPECT I: RESULTS

The subjects used in the experiment, who were of both sexes, were drawn from a number of sources and were extremely heterogeneous in terms of age (ranging from just under 20 to several cases of over 50) and of levels of occupation (ranging from junior clerks to business executives, and including a minority of University students, and some housewives).*

The following are the number of subjects per group who both correctly internalized the affective evaluations of the three entities

* Sources of subjects were: A Market Research Organisation; the administrative headquarters of an Oil Company; a Management Consultant Company; Extra-Mural evening classes; classes at University and Technical School. A total of 284 subjects was used of which 75 were classified as "errors", which are to be examined later. This left 104 subjects for the analysis of aspect I of the study, and 105 for the analysis of aspect II, which is to be given later.

as instructed and, in their appraisal of the initial situation, correctly perceived the relationships between those entities (i.e. as measured by the first set of rating scales):

group 1 - 22, group 2 - 32,

group 3 - 28, group 4 - 22.

The degree to which the present study replicated the original 1960 study was checked by examining the data obtained for the reception of the three counter-communications. In the original study two predictions were confirmed. They were:

the "primary prediction" that

the communication which provided the means for balance by way of one sign change would be the most acceptable of the three;

and the "secondary prediction" that

of the other two communications, the one implying two sign changes to reach balance would be better received than the one implying three sign changes.

The mean accuracy ratings attributed to the counter-communications for the three groups in the 1960 study (i.e. Study 2) are reproduced in Table 13.14, together with the corresponding ratings for the four groups of the present study.

Table 13.14: Ratings of the accuracy of the counter-communications

Rosenberg and Abelson: Study 2 (from Table 14, 1960, p.136)

Mean accuracy ratings on 0 - 5 scale of communication:

Group	N	Art-Sales	Fenwick-Art	Fenwick-Sales
1	13	3.54	3.15	3.15
2	11	2.45	3.82	3.18
3	11	2.45	4.09	3.82

Present study

Mean accuracy ratings on 0 - 10 scale of communication:

Group	N	Art-Sales	Fenwick-Art	Fenwick-Sales
1	22	6.55	5.64	4.23
2	31*	4.42	6.00	5.71
3	28	4.11	6.00	6.50
4	22	6.18	6.64	6.73

* One of the 32 subjects in group 2 omitted rating the accuracy of the reports.

Two analyses of variance were performed on the present data, the first on the data for the groups 1, 2 and 3 corresponding to the three groups of the original study, and the second on the data for all four groups. In the first analysis of variance two comparisons were formed, as in the original study, corresponding to the two predictions. Thus, to test the primary prediction the following comparison was formed:

Comparison 1

Group	communication: Art-Sales	Fenwick-Art	Fenwick-Sales
1	+2	- 1	- 1
2	- 1	+ 2	- 1
3	- 1	- 1	+ 2

This comparison tests for the predicted greater receptivity to the AS communication for group 1 subjects, to the FA communication for group 2 subjects, and to the FS communication for group 3 subjects (i.e. the primary prediction).

Comparison 2

Group	communication: Art-Sales	Fenwick-Art	Fenwick-Sales
1	0	+ 1	- 1
2	0	0	0
3	- 1	+ 1	0

Comparison 2 tests for the greater receptitivity to the FA communication compared with the FS one for group 1 subjects, and to the FA communication compared with the AS one for group 3 subjects (i.e. the secondary prediction).

The analysis of variance given in Table 13.15 shows that the primary prediction (comparison 1) is borne out, but that the secondary prediction (comparison 2) is not.

Table 13.15: First analysis of variance on accuracy ratings (three groups)

Source	df	Mean square	F	p
Between groups	2	0.57	0.09	not sig.
Between reports	2	4.35	0.67	not. sig.
Comparison 1	1	79.76	12.25	less than 0.001
Comparison 2	1	4.91	0.75	not sig.
Remaining interaction	2	8.29	1.27	not sig.
Within cells residual	234	6.51	-	-

The fact that the primary prediction is borne out suggests that the present study is in part successful as a replication of the original. The pattern of the mean accuracy ratings in the present study (see Table 13.14) seems to conform to what would be expected on the basis of the balance model for the secondary prediction as well as the primary. However, the second comparison proves to be insignificant and suggests that very considerable variation exists in the ratings in the present study. This may be a consequence of the heterogeneous nature of the subjects (in the 1960 experiment the subjects were all undergraduates), or a consequence of differences in instructions to the subjects and differences in the materials used. Thus, whilst the primary prediction of the balance model concerning the reception of the counter-communications is upheld (p less than 0.001), the secondary prediction (concerning preferences for communications related to two-sign-change paths to balance over those related to three-sign-change

paths) is not confirmed.

Other conclusions that may be derived from the analysis of variance (Table 13.15), are that there are no intrinsic differences between the three groups in terms of the general level of the accuracy ratings, and that there are no intrinsic differences in the general effect of the three counter-communications (i.e. reports) with respect to their reception.

In the second analysis of variance, performed on all four groups, two comparisons were again formed. In this case, since no differential prediction could be made concerning the reception of the counter-communications for group 4 subjects, the primary prediction was tested by forming the following comparison:

Comparison 1

Group	Art-Sales communication:	Fenwick-Art	Fenwick-Sales
1	+ 2	- 1	- 1
2	- 1	+ 2	- 1
3	- 1	- 1	+ 2
4	0	0	0

Likewise, the comparison formed to test the secondary prediction was:

Comparison 2

Group	Art-Sales communication:	Fenwick-Art	Fenwick-Sales
1	0	+ 1	- 1
2	0	0	0
3	- 1	+ 1	0
4	0	0	0

The analysis of variance is given in Table 13.16. Little difference exists between the results of this second analysis compared with the first, except that there is a significant between groups effect which is attributed wholly to the presence of the fourth group in the second analysis.

Table 13.16: Second analysis of variance on accuracy ratings (four groups)

Source	df	Mean square	F	p
Between groups	3	19.73	3.07	less than 0.05
Between reports	2	5.90	0.92	not sig.
Comparison 1	1	79.75	12.41	less than 0.001
Comparison 2	1	2.86	0.37	not sig.
Remaining interaction	4	4.85	0.75	not sig.
Within cells residual	297	6.42	-	-

On inspection of the mean accuracy ratings for the fourth group compared with the other three (Table 13.14), it is apparent that the significant between groups effect is due to the uniformly higher ratings of all three counter-communications by subjects of the fourth group. Thus, for the case in which all the originally established beliefs contribute to modal dissonance (c.f. only one belief for groups 1, 2 and 3), each one of the counter-communications is rated high on accuracy.

ASPECT I: TESTS OF HYPOTHESES: "INTERACTING MODES OF DISSONANCE"

The main interest of the present study is with what occurs after the reception of the reports, in particular, with the comparative degrees of accommodative reappraisal of the beliefs held about the relevant entities, which were initially established during the appraisal of the situation first presented to the subjects. First, therefore, tests of the predictions based on the interaction of aroused discrepancy dissonance with bound modal and volitional dissonances will be presented. This will then be followed by an analysis of the number and type of balance resolutions attained by the subjects.

Table 13.17 gives the mean ratings per group of the subjects' final beliefs about the relationships existing between Art and Sales, u(as), between Fenwick and Sales, u(fs), and between Fenwick and Art, u(fa).

Table 13.17 Final beliefs about the relationships existing between the relevant entities

Group	N	Final beliefs after receiving counter-communications*: u(as)	u(fs)	u(fa)
1	22	+1.59	+5.64	+3.50
2	32	-1.00	+5.03	+3.03
3	28	-1.04	+3.71	+2.46
4	22	+1.32	+3.36	-0.68

Initial beliefs for all groups were: a dissociative relationship between Art and Sales, and associative relationships between Fenwick and Sales, and between Fenwick and Art.

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* Scale: (- 10) - (+ 10); negative values indicate dissociations between pairs of entities, and positive values indicate associations between pairs.

Three analyses of variance were performed to test for the contribution of the three modes of dissonance to accommodative reappraisal, the first on outcome beliefs about the relationship between Art and Sales, the second on outcome beliefs about the relationship between Fenwick and Sales, and the third on outcome beliefs about the relationship between Fenwick and Art.

The hypothesis to be tested concerning the Art-Sales relationship is reproduced below:

Hypothesis I-AS

The outcome beliefs about the Art-Sales relationship for groups 1 and 4 will tend towards an associative relationship to a greater extent than will the corresponding outcome beliefs for groups 2 and 3, and, in addition, no systematic differences in these outcome beliefs will exist between groups 1 and 4, and between groups 2 and 3.

To test this prediction the following three comparisons were formed in the analysis of variance:

Art-Sales relationship - u(as)

	groups:			
comparisons	1	2	3	4
C_1 :	+1	-1	-1	+1
C_2 :	-1	0	0	+1
C_3 :	0	-1	+1	0

Comparison C_1 tests the predicted effect of assisting modal pressures for the accommodative reappraisal of the Art-Sales relationship for groups 1 and 4, compared with the resisting modal pressures for groups 2 and 3. Comparisons C_2 and C_3 tests whether or not differences exist between groups 1 and 4, and between groups 2 and 3 respectively.

Table 13.18 Analysis of variance on outcome beliefs about the Art-Sales relationship

Source	df	Mean square	F	p
Comparison 1	1	155.0	11.2	less than 0.01
Comparison 2	1	0.8	less than 1	not sig.
Comparison 3	1	0.0	less than 1	not sig.
Error	100	13.35	-	-

The analysis of variance, which is given in Table 13.18, supports the prediction in relation to the outcome beliefs about the Art-Sales relationship (comparison 1) and, in addition, indicates that there are no significant effects between groups 1 and 4 and between groups 2 and 3 (comparisons 2 and 3).

The following is the hypothesis to be tested concerning the Fenwick-Sales relationship:

Hypothesis I-FS

The outcome beliefs about the Fenwick-Sales relationship for groups 3 and 4, will tend away from an associative relationship to a greater extent than will the corresponding outcome beliefs for groups 1 and 2 and, in addition, no systematic differences in these outcome beliefs will exist between groups 1 and 2, and between groups 3 and 4.

In the analysis of variance performed on the outcome beliefs about the relationship between Fenwick and Sales, this prediction was tested by forming the following three comparisons:

Fenwick-Sales relationship - u(fs)

	groups:			
comparisons	1	2	3	4
C_1 :	+1	+1	-1	-1
C_2 :	-1	+1	0	0
C_3 :	0	0	-1	+1

Comparison C_1 tests the predicted effect of assisting modal pressures for the accommodative reappraisal of Fenwick-Sales relationship for groups 3 and 4, compared with the resisting modal pressures for groups 1 and 2. Comparisons C_2 and C_3 test whether or not differences exist between groups 1 and 2, and between groups 3 and 4 respectively.

Table 13.19 Analysis of variance on outcome beliefs about the Fenwick-Sales relationship

Source	df	Mean square	F	p
Comparison 1	1	81.9	4.47	less than 0.05
Comparison 2	1	4.8	less than 1	not sig.
Comparison 3	1	1.5	less than 1	not sig.
Error	100	18.3	-	-

The analysis of variance, given in Table 13.19, supports the prediction (comparison 1), and indicates the absence of significant effects between groups 1 and 2, and between groups 3 and 4 (comparisons 2 and 3).

The third analysis of variance concerns the outcome beliefs about the Fenwick-Art relationship, and the following two predictions:

Hypothesis I-FA(1) (modal effect)

The mean outcome of beliefs about the Fenwick-Art relationship for groups 2 and 4 taken together, will tend away from an associative relationship to a greater extent than will the corresponding mean outcome of beliefs for groups 1 and 3 taken together.

Hypothesis I-FA(2) (volitional effect)

The mean outcome of beliefs about the Fenwick-Art relationship for groups 3 and 4 taken together, will tend away from an associative relationship to a greater extent than will the corresponding mean outcome of beliefs for groups 1 and 2 taken together.

In addition, it follows from the analysis of the contributions of the three modes of dissonance to accommodative reappraisal, that there should be no systematic difference between the mean of the pooled outcome beliefs for groups 1 and 4, and the mean of the pooled outcome beliefs for groups 2 and 3.

The two predictions were tested by forming the comparisons C_1 and C_2 below, and comparison C_3 was formed to test whether or not a difference existed between the mean of the pooled outcome beliefs for groups 1 and 4, and that for groups 2 and 3:

Fenwick-Art relationship - u(fa)

	groups: 1	2	3	4	
comparisons					
C_1 :	+ 1	- 1	+ 1	- 1	(modal effect)
C_2 :	+ 1	+ 1	- 1	- 1	(volitional effect)
C_3 :	- 1	+ 1	+ 1	- 1	

Table 13.20 Analysis of variance on outcome beliefs about the Fenwick-Art relationship

Source	df	Mean square	F	p
Comparison 1	1	82.6	5.10	less than 0.05
Comparison 2	1	142.3	8.80	less than 0.01
Comparison 3	1	45.0	2.78	not sig.
Error	100	16.2	-	-

The analysis of variance, given in Table 13.20, supports both predictions (comparison 1 for the modal effect; comparison 2 for the volitional effect), and indicates the absence of a significant difference between the mean of the pooled outcome beliefs for groups 1 and 4, and that for groups 2 and 3 (comparison 3).

The three analyses of variance taken together, provide substantial support for the theoretical propositions concerning the interaction of aroused discrepancy dissonance with dissonances bound in the modal and volitional modes of the identity structure.

ASPECT I: THE COMPARATIVE EFFECTS OF MODAL AND VOLITIONAL BIASES IN THE DEGREE OF ACCOMMODATIVE REAPPRAISAL

Estimates of the contributions of modal and volitional pressures to accommodative reappraisal, compared with that of discrepancy dissonance pressures, may be readily obtained, if two reasonable assumptions are made about the experimental situation. The first assumption is that there exist no substantial intrinsic biases in the description of the initial situation confronting the "store owner", in the sense that no one relationship between the three entities (Fenwick, Modern Art, and Sales) is described as intrinsically stronger than the others*. The second assumption is that there exist, again, no biases in the intrinsic appeals of the three counter-communications. The latter assumption is, in fact, supported by the analysis of variance

* That there might be bias in the assimilation by the subjects of these relationships, is a different matter, and is to be expected on the basis of theory (see Chapter 11).

performed on the reception of the counter-communications (previously given in Table 13.16), in which no detectable biases between reports were found.

Accepting these two assumptions, estimates of the relative contributions of discrepancy dissonance, bound modal and volitional dissonances to the accommodative reappraisal following the counter-communications, can be calculated from the data on the mean changes, for each group, in the beliefs about the Art-Sales relationship and the Fenwick-Sales relationship. The procedure is as follows. First consider the theoretical expressions for the changes in beliefs about the Art-Sales relationship. These are:

<u>for groups 1 and 4</u> (expressions 13.21 and 13.33)

$$\text{Delta } u(as) = a(\text{discrep:}D) + a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 13.36$$

<u>and for groups 2 and 3</u> (expressions 13.24 and 13.28)

$$\text{Delta } u(as) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 13.37$$

Also consider the theoretical expressions for the changes in beliefs about the Fenwick-Sales relationship:

<u>for groups 3 and 4</u> (expressions 13.29 and 13.34)

$$\text{Delta } u(fs) = a(\text{discrep:}D) + a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad 13.38$$

<u>and for groups 1 and 2</u> (expressions 13.22 and 13.25)

$$\text{Delta } u(fs) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad 13.39$$

In each of these expressions, the values of the parameters, a, a_m, a_v,

will vary from individual to individual in line with the variable contributions of the three modes of dissonance to accommodative reappraisal across individuals. However, for any random group of individuals, the variations in these parameters from individual to individual are expected also to be random. This being the case, the mean contributions of each mode of dissonance to accommodative reappraisal of the Art-Sales and the Fenwick-Sales relationships, averaged for the relevant experimental groups, may be derived from expressions 13.36 to 13.39, and expressed in the following way:

$$\text{mean Delta } u(as)_{1,4} = t = a_0 + a_1 + a_2 \qquad 13.40$$

(where t = mean Delta $u(as)_{1,4}$ refers to the mean change in the Art-Sales relationship for groups 1 and 4 combined;
where a_0 = mean (a(discrep:D) - P);
where a_1 = mean a_m(bound:D_m); and
where a_2 = mean a_v(bound:D_v):
from expression 13.36)

$$\text{mean Delta } u(as)_{2,3} = u = a_0 - a_1 + a_2 \qquad 13.41$$

(where u = mean Delta $u(as)_{2,3}$ refers to the mean change in the Art-Sales relationship for groups 2 and 3 combined; where a_0, a_1 and a_2 are as in 13.40: from expression 13.37)

$$\text{mean Delta } u(fs)_{3,4} = v = a_0 + a_1 - a_2 \qquad 13.42$$

(where v = mean Delta $u(fs)_{3,4}$ refers to the mean change in the Fenwick-Sales relationship for groups 3 and 4 combined: from expression 13.38)

$$\text{mean Delta } u(fs)_{1,2} = w = a_0 - a_1 - a_2 \qquad 13.43$$

(where w = mean Delta $u(fs)_{1,2}$ refers to the mean change in the Fenwick-Sales relationship for groups 1 and 2 combined; from expression 13.39)

Now, assuming that there exist no intrinsic differences in the initial distal stimuli relating to the strengths of the Art-Sales and Fenwick-Sales relationships, and assuming also that there are no intrinsic biases in the subsequent counter-communications, the above four equations may be treated as simultaneous equations, which can be solved to give estimates of a_0, a_1 and a_2. Best estimates are given by forming additions and subtractions of equations 13.40 to 13.43, i.e.

a_0, from the sum (13.40) + (13.41) + (13.42) + (13.43), is given by:

$$4\,a_0 = t + u + v + w \qquad 13.44$$

a_1, from the sum (13.40) $\bar{+}$ (13.41) + (13.42) $\bar{+}$ (13.43), is given by:

$$4\,a_1 = t - u + v - w \qquad 13.45$$

a_2, from the sum (13.40) + (13.41) $\bar{+}$ (13.42) $\bar{+}$ (13.43), is given by:

$$4\,a_2 = t + u - v - w \qquad 13.46$$

Table 13.21 gives the data obtained for the mean changes in the beliefs about the Art-Sales and Fenwick-Sales relationships for the four experimental groups and, in addition, the values of t, u, v and w.

Table 13.21: Mean changes in evaluations of the Art-Sales and the Fenwick-Sales relationships

Group	N	Mean Delta u(as)	Mean Delta u(fs)
1	22	7.32	2.59
2	32	6.47	3.10
3	28	6.03	4.15
4	22	7.68	4.82

t = Mean Delta $u(as)_{1,4}$ = 7.50
u = Mean Delta $u(as)_{2,3}$ = 6.27
v = Mean Delta $u(fs)_{3,4}$ = 4.44
w = Mean Delta $u(fs)_{1,2}$ = 2.89

NB. all changes are expressed in absolute values

On substituting the values for t, u, v and w, given in Table 13.21, into equations 13.44, 13.45, and 13.46, the following estimates are obtained for the relative contributions of effective discrepancy dissonance*, bound modal dissonance, and bound volitional dissonance to accommodative reappraisal:

source of contribution to accommodative reappraisal of u(as) and u(fs)	extent of mean contribution
effective discrepancy dissonance*	a_0 = 5.274
bound modal dissonance	a_1 = 0.696
bound volitional dissonance	a_2 = 1.610

* By effective discrepancy dissonance is meant the quantity (a (discrep:D) - P) = a_0, i.e. the contribution to accommodative reappraisal of the pressure due to aroused discrepancy dissonance after subtracting the constraining pressure due to the binding energy of the referent belief.

Table 13.22 indicates the degree to which the changes in beliefs calculated on the basis of these estimated contributions, match those from which the estimates are derived.

Table 13.22: Comparison of mean estimated changes with actual changes

Group	Changes based on estimated contributions of discrepancy, modal and volitional dissonances	Actual mean changes (means of combined groups - 1 and 4, 2 and 3 - given in brackets)	
	Relationship u(as)		
1	$a_0 + a_1 + a_2 = 7.58$	(7.50)	7.32
2	$a_0 - a_1 + a_2 = 6.19$	(6.27)	6.47
3	$a_0 - a_1 + a_2 = 6.19$	(6.27)	6.03
4	$a_0 + a_1 + a_2 = 7.58$	(7.50)	7.68
	Relationship u(fs)		
1	$a_0 - a_1 - a_2 = 2.97$	(2.89)	2.59
2	$a_0 - a_1 - a_2 = 2.97$	(2.89)	3.10
3	$a_0 + a_1 - a_2 = 4.36$	(4.44)	4.15
4	$a_0 + a_1 - a_2 = 4.36$	(4.44)	4.82

The most outstanding feature of the calculated estimates, is that the mean contribution of volitional dissonance pressures in relation to accommodative reappraisal is estimated to be over twice as great as that of modal dissonance pressures. That is, in respect of the degree

of change in beliefs, the volitional pressures have more than twice the predisposing or constraining effect than do the modal pressures. In terms of the mean comparative effects of the three modes, that of modal dissonance is

$(a_1/a_0)\ 100\% = 13.2\%$ of the contribution

of effective discrepancy dissonance; and that of volitional dissonance is

$(a_2/a_0)\ 100\% = 30.5\%$ of the contribution of effective discrepancy dissonance.

In other words, in this experimental situation, volitional mode pressures have, on the average, a substantially greater effect on selective biases in accommodative reappraisal, than do modal mode pressures. Since the Rosenberg and Abelson predictions about "balance resolution" relate only to what are essentially modal mode biases, it become evident why their predictions were not borne out. Only of their group 1 subjects did a substantial proportion attain "appropriate balance", but it is in this group that the modal and volitional mode pressures operate in conjunction. Hence, it may be deduced that, since the mean contribution of the volitional pressures is more than twice that of the modal pressures, the so-called "appropriate balances" in this group arise more as a consequence of volitional pressures than of modal (i.e. "balance") pressures.

In each of the other two groups of the original experiment, the volitional mode pressures operate in a direction, in relation to the

accommodative reappraisal of at least one relationship which is antagonistic to the modal mode pressures. The Rosenberg and Abelson finding of only a few isolated instances of "balance resolutions" in these groups, is clearly evidence of such antagonistic pressures*.

Another feature of the calculated estimates for the mean contributions to accommodative reappraisal of the three modes of dissonance, is that the estimated value for effective discrepancy dissonance is by far the greatest of the three contributions. This is really no surprise, since the relationships established in the initial situation, without much "evidence" in support of them, were flatly contradicted by the counter-communications, so that the greatest effect was naturally due to the evident discrepancy between the initial relationships and those expressed in the subsequent reports.

The above estimates have taken into consideration only the effects of modal and volitional pressures operating during the process of accommodative reappraisal. However, these pressures also play a part in the original assimilation of the relevant beliefs during the process

* It is also apparent that Rosenberg and Abelson (1960) recognized the presence of other pressures in their "dual force" post-hoc postulate. However, this recognition did not lead Rosenberg (1966) to abandon giving a primary and self-evident status to the "balance" of "inconsistency" notion (see Chapter 11: Interpretations of other investigations: (2) Interaction between modal and volitional modes of appraisal). In the present analysis, boththe modal and the volitional aspects of the identity structure are treated on a par. But through empirical analysis, it is found that, on the average in this experiment, the volitional modepressures are more than twice as strong as the modal mode pressures.

of assimilative reappraisal*, following on the appraisal of the initial situation. In particular, the operation of the processes tending to maximize psychological efficiency, as the binding of dissonance in the identity fine structure progressed, will, in general, have led to the under-assimilation of those beliefs that contribute to dissonant elements, and the over-assimilation of those beliefs that contribute to consonant elements.

Table 13.23: Initial evaluations of the Art-Sales and Fenwick-Sales relationships

Group	N	Mean initial u(as)	Mean initial u(fs)
1	22	5.73	8.23
2	32	7.47	8.13
3	28	7.07	7.86
4	22	6.36	8.18

Mean initial $u(as)_{1,4}$	6.05
Mean initial $u(as)_{2,3}$	7.28
Mean initial $u(fs)_{3,4}$	8.00
Mean initial $u(fs)_{1,2}$	8.16

NB. u(as) refers to the dissociation: modern art decreases sales;
u(fs) refers to the association: Fenwick increases sales.
The above means are expressed in absolute values.

* Assimilative reappraisal refers to the elaboration of the relevant portion of the identity structure. The assimilation of the relationships between Fenwick, Art, and Sales, results in further attributes being given to these entities, i.e. the assimilation results in a reappraisal of these entities in the sense that further characteristics (contd)

These effects are discernable in the data for the mean initial ratings of u(as) and u(fs) given in Table 13.23. Thus, the volitional mode pressures are in evidence in the general over-assimilation of the u(fs) relationship which, in the volitional mode, is an appraised outcome consonant withrespect to the "store owner's" intention to increase sales, and in the general under-assimilation of the u(as) relationship, which is dissonant with respect to the referent intention. The modal mode pressure is also apparent in the even greater under-assimilation of u(as) in groups 1 and 4 (in which u(as) contributes to modal dissonance), compared with groups 2 and 3. It fails, however, to produce the expected under-assimilation of u(fs) in groups 3 and 4, compared with groups 1 and 2.

The effects of these selective pressures are, of course, additional to the ones already calculated for the corresponding modal and volitional pressures which operate during accommodative reappraisal. Hence, theoretically, the <u>total</u> effect of these selective pressures, as they operate both during the initial assimilative reappraisal and the subsequent accommodative reappraisal, should be greater than the calculated estimates for these pressures as they operate during accommodative reappraisal alone.

(* contd.)
are differentiated in relation to them. For example, the additional characteristics differentiated in relation to Fenwick, are his "ability to increase sales" and his "interest in modern art displays".

The total effect of the modal and volitional pressures, as compared with that of the effective discrepancy dissonance, may be estimated in the following way. Indicate the mean absolte evaluation of the assimilated beliefs in the absence of modal and volitional pressures by: $ru(pq)$, and indicate the decrements (under-assimilation) or increments (over-assimilation), due to the modal and volitional pressures by d_m and d_v respectively. Then, the mean initial evaluations of the Art-Sales and the Fenwick-Sales relationships may be represented as follows:

$$\text{mean initial } u(as)_{1,4} = ru(pq) - d_m - d_v \qquad 13.47$$

$$\text{mean initial } u(as)_{2,3} = ru(pq) + d_m - d_v \qquad 13.48$$

$$\text{mean initial } u(fs)_{3,4} = ru(pq) - d_m + d_v \qquad 13.49$$

$$\text{mean initial } u(fs)_{1,2} = ru(pq) + d_m + d_v \qquad 13.50$$

Summing the above four expressions, the mean absolute evaluation of the assimilated beliefs in the absence of the selective pressures is given by:

$$ru(pq) = \tfrac{1}{4}\,(\text{mean initial: } u(as)_{1,4} + u(as)_{2,3} + u(fs)_{3,4} + u(fs)_{1,2}) \qquad 13.51$$

Substituting the relevant mean ratings, which are given in the lower portion of Table 13.23, the following estimate is calculated:

$$ru(pq) = 7.37 \qquad 13.52$$

The total effect of the selective pressures is witnessed in the final outcome ratings following the counter-communications. These ratings have already been given in Table 13.17. The first column of Table 13.24 gives the mean outcome ratings for the appropriate combined groups. The second column of the same table shows the "effective" mean changes in evaluation, in which the initial effects arising during assimilative reappraisal, are now incorporated in addition to those arising during accommodative reappraisal. These "effective" mean changes are obtained by taking the difference between the mean initial evaluation ru(pq) and the appropriate mean outcome ratings.

Table 13.24: Outcome evaluations of the Art-Sales and Fenwick-Sales relationships, and "effective" mean changes in evaluation

Mean outcome ratings	"Effective" mean changes*
$u(as)_{1,4} = -1.46$	Delta $u(as)_{1,4} = t' = 8.83$
$u(as)_{2,3} = 1.02$	Delta $u(as)_{2,3} = u' = 6.36$
$u(fs)_{3,4} = 3.56$	Delta $u(fs)_{3,4} = v' = 3.81$
$u(fs)_{1,2} = 5.27$	Delta $u(fs)_{1,2} = w' = 2.10$
ru(pq) = 7.37	*: changes given in absolute values

The values of t', u', v' and w', indicated in Tabld 13.24, are substituted for t, u, v, and w in equations 13.44, 13.45 and 13.46, and the following ammended estimates are derived for the relative

contributions of effective discrepancy dissonance, modal dissonance and volitional dissonance to the final outcome beliefs about the Art-Sales and Fenwick-Sales relationships:

source of contribution to final outcome beliefs about u(as) and u(fs), after accommodative reappraisal	extent of mean contribution
effective discrepancy dissonance	$a_0' = 5.274$
modal dissonance	$a_1' = 1.046$
volitional dissonance	$a_2' = 2.318$

The contribution due to effective discrepancy dissonance remains the same. The comparative effects of modal and volitional contributions also remain much the same, i.e.

$a_1/a_2 = 0.696/1.610 = 0.43$ (accommodative reappraisal)

$a_1'/a_2' = 1.046/2.318 = 0.45$ (initial assimilative reappraisal plus subsequent accommodative reappraisal):

the volitional pressures remain more than twice as great as the modal pressures.

As expected, the estimates for the total contributions of the biasing pressures, as they operate during the initial assimilative reappraisal and the subsequent accommodative reappraisal, are greater than those estimated for accommodative reappraisal alone. Thus, the overall effect of the modal mode is

$(a_1'/a_0')100\%$ = 19.8% of the contribution of effective discrepancy dissonance (cf. only 13.2% for accommodative reappraisal alone); and that of the volitional mode is

$(a_2'/a_0')\ 100\%$ = 43.9% of the contribution of effective discrepancy dissonance (cf. only 30.5% for accommodative reappraisal alone).

The maximum total biasing effect, which occurs when the modal and volitional pressures assist each other is, therefore, approaching two-thirds (actually 63.7%) that of the effective discrepancy dissonance. Since the energetics for the modal and volitional pressures derive from emotive sources*, whilst those associated with discrepancy dissonance derive from the cognition of the discrepancy between the internalized belief and the opinion advocated in the counter-communication, this is evidence of the considerable influence of emotive biases in the reception of and the reaction to items of information or opinion. Such biases manifest themselves either as a tendency towards a too ready assimilation (i.e. over-assimilation) of a belief that contributes to consonant elements and a subsequent tendency resisting change in evaluation (i.e. under-accommodation) to an opinion discrepant with that belief, or as a tendency towards an under-acceptance (i.e. under-assimilation) of a belief that contributes to dissonant elements and a subsequent tendency towards a more than

* i.e. affective incompatibilities.

justified change in evaluation (i.e. over-accommodation) to an opinion discrepant with the original belief*. (It will be noted that such biases would tend to give rise to a primacy effect in the first case, and a recency effect in the second case: see Chapter 10, "Primacy" and "recency" effects. In the present study, both such effects are clearly discernable, e.g. Table 13.17, though the primacy effect is, in general, the greater.)

ASPECT I: EXAMINATION OF "BALANCE RESOLUTIONS"

It has been shown that the modal pressures are, on average, less than half as strong as the volitional mode pressures. Hence, it would be expected that, for those experimental groups in which the modal and volitional pressures operate in opposition in relation to the accommodative reappraisal of one or more beliefs, the subjects' outcome beliefs would not conform to balance model predictions (corresponding to modal mode pressures acting alone). On the other hand, when both modes act in conjunction, "balance resolutions" should be in greater evidence, but more as a consequence of volitional mode pressures than of modal (i.e. balance) pressures. Such a state of affairs was found in the original Rosenberg and Abelson experiment, and is confirmed in the present study.

* Again, it is stressed that elements are dissonant or consonant with respect to some referent, which, itself, may be either favourably or unfavourably evaluated. In other words, dissonant elements will include favourable evaluations which are incompatible with respect to an unfavourably evaluated referent, as well as unfavourable evaluations which are incompatible with respect to a favourably evaluated referent. Thus, considering for example consonant elements, the (contd.)

Table 13.25 gives the number of balance resolutions attained by the subjects in the three groups corresponding to those used by Rosenberg and Abelson. The underlined cells of the table are those in which resolutions based on the balance model, are expected: the full underlining corresponds to expected "one-sign-change" resolutions, and the dotted underlining corresponds to expected "two-sign-change" resolutions as a consequence of the enhancedconditions for such resolutions in the subgroups thus indicated. (It will be remembered that an experimental manipulation was introduced in the present study in certain subgroups. This manipulation was an attempt to reduce the constraining pressures operating against changing one of the two evaluations; Fenwick, and Modern Art. Thus, the conditions for two-sign-change resolutions conforming to the balance model were enhanced in the following subgroups: Group 1 subgroup B (attenuation of initial Modern Art evaluation), Group 2 subgroup E (attenuation of initial Modern Art evaluation), Group 2 subgroup F (attenuation of initial Fenwick evaluation), and Group 3 subgroup I (attenuation of initial Fenwick evaluation).)

It is seen that only in group 1 are there a substantial number of "balance resolutions" (15 out of 22). This result, which corresponds to that obtained by Rosenberg and Abelson, conforms to the operation of modal and volitional pressures acting in conjunction. Of the

(* contd.)
over-assimilation of such elements may refer to the over-acceptance of unfavourable attributes to an unfavourably evaluated entity or event, etc.

subjects in the other groups, for whom the pressures were antagonistic, only a very few achieved "balance resolution" (five out of 32 in group 2, two out of 28 in group 3).

Table 13.25: Subjects attaining "balance resolutions"*

		Balance resolution type:			
		f a s	f a s	f a s	
Group	N	+ + +	+ − +	− − +	No balance
1	22	15	0	0	7
A	9	4 (5)	0	0	
B	5	1 (2)	....0...	0	
C	8	1 (2)	0	0	
2	32	1	3	1	27
D	12	0	0 (2)	0	
E	6	0	0 (1)	0	
F	14	1	0	1	
3	28	0	0	2	26
G	8	0	0	0 (2)	
H	8	0	0	0	
I	12	0	0	0	

_____: balance model prediction for "one-sign-change" resolution

.....: enhanced conditions for "two-sign-change" resolution.

* Figures in brackets refer to subjects attaining "pseudo-balance", i.e. these subjects conform to the balance resolution indicated, except that their outcome evaluation of either one of the relationships is zero, or one of the entities is zero.

It is also apparent that the manipulations designed to enhance two-sign-change resolutions did not result in this kind of "balance resolution". It is therefore evident that the balance model predictions are largely unsuccessful, when it is a matter of considering the effects of the counter-communications on the subjects' beliefs and evaluations.

ASPECT I: FREQUENCY OF DISSONANCE REDUCTION IN THE MODAL AND VOLITIONAL MODES

The extent of accommodative reappraisal of the referent beliefs, following the counter-communications and the arousal of discrepancy dissonance, has been seen to depend on the predisposing or constraining pressures deriving from the presence of dissonances bound in both the modal and volitional modes of the identity structure. Although it has been found that, on the average, the volitional mode pressures predominate, it is also possible that, for certain individuals, the modal mode pressures have the greater effect.

In order to investigate the changes in magnitudes of dissonance in both modes for each subject, quantitative estimates of the modal and volitional dissonances were derived from the subject's ratings of the two sets of measurement scales. Thus, the first set enabled estimates to bemade of both modal and volitional dissonances for the subject immediately after the assimilation of the relationships between Fenwick, Modern Art and Sales, described in the initial situation. And the second set enabled corresponding estimates to be made of the

dissonances that remained after the accommodative reappraisal which followed the reception of the counter-communications*.

* The required estimates following the initial situation could be obtained by substituting the relevant ratings into the appropriate theoretical expressions for modal and volitional dissonances (i.e. for group 1 subjects: expressions 13.3 and 13.20; for group 2 subjects: expressions 13.4 and 13.20; for group 3 subjects: expressions 13.5 and 13.27; and for group 4 subjects: expressions 13.32 and 13.27). A general computer program was developed which both analysed the data from each subject in terms of the theoretical principles behind the modal mode and volitional mode analyses, and calculated the required estimates. This procedure was essential for coping withthe subject's reappraisal following the counter-communications, since, of course, the appropriate expressions for the required estimates would tend to vary from individual to individual. For these calculations, the evaluations of the entities and relationships were expressed in units ranging from +1.0 to -1.0, and the degree of perceived relevance in units ranging from 0 to 1.0 (i.e. the scale measures divided by 10).

Table 13.26 summarizes these changes in the estimated magnitudes of modal and volitional dissonances*. Of the 104 subjects, there were 74 instances of decreases in dissonance in both modes, 15 instances of decreases in the volitional mode at the expense of increases in the modal mode, twelve instances of decreases in the modal mode at the expense of increases in the volitional mode, and three of increases in dissonance in both modes. Thus, although in the majority of cases, dissonance reduction occurred in both modes, and in others the volitional pressures were such as to increase modal dissonance, there were also cases in which modal pressures predominated to the extent that volitional dissonance was increased. Evidently, certain subjects operated predominantly in the modal mode during accommodative reappraisal,

* It should be remembered that the counter-communications were specifically designed to promote modal dissonance reduction (i.e. "balance resolution"). They are also such as to allow volitional dissonance reduction, mainly by way of an over-accommodation of u(as) towards an associative relationship, and an under-accommodation of u(fs) away from an associative relationship. It should be noted that a decrease in volitional dissonance is not simply an artifact of the expression for estimating its magnitude, such that merely changes in the u(as) and u(fs) relationships, in the direction of the counter-communications, automatically give rise to decreases, but that such a decrease does depend on the volitional pressures that give rise to a rate of change in the numerator of that expression which is greater than the rate of change of its denominator.

Table 13.26: Frequency of changes in the estimates of modal and volitional dissonances, following the reception of the counter-communications

Group	N	Change in the estimate of modal dissonance	Change in the estimate of volitional dissonance: decrease	increase	
1	22	decrease	21	1	
		increase	0	0	
2	32	decrease	22	3	
		increase	4	3	
3	28	decrease	13	6	
		increase	9	0	
4	22	decrease	18	2	
		increase	2	0	
TOTALS	104	decrease	74	12	86
		increase	15	3	18
			89	15	

even though, when averaged over all subjects, the volitional pressures were generally considerably greater than the modal ones.

An interesting feature of Table 13.26 is that there were only one out of 22 Group 1 subjects, and only four out of 22 Group 4 subjects, for whom either modal or volitional dissonance was estimated to increase, whereas for groups 2 and 3, this was the case for ten out of 32, and 15 out of 28 subjects respectively. The greater instance of increased dissonance in either one or the other mode in groups 2 and 3, reflect the predominantly antagonistic action of the modal and volitional pressures, during accommodative reappraisal, in members of these groups, compared with the predominantly conjunctive action of these pressures in members of groups 1 and 4*. The even

* In group 1, discrepancy dissonance in relation to u(as) acts in the direction of reducing both modal and volitional dissonances, and the predisposing pressures act in conjunction. (See expressions 13.21, 13.22 and 13.23)

In group 4, discrepancy dissonances in relation to both u(as) and u(fa) act in the direction of reducing bound dissonances in both modes and, again, the predisposing pressures operate in conjunction, Antagonistic modal and volitional pressures do exist in relation to the accommodative reappraisal of u(fs), but with two other avenues open to conjunctive dissonance reduction in both modes, the respective dissonances may be readily reduced in most cases. (See expressions 13.33, 13.34 and 13.35)

In group 2, antagonistic modal and volitional pressures exist in relation to u(as), in which discrepancy dissonance acts in the direction of reducing volitional dissonance, but is resisted by modal pressures. (See expressions 13.24, 13.25 and 13.26).

In group 3, antagonistic pressures are present in relatinn to u(as), u(fs) and u(fa), so that: discrepancy dissonances in relation to u(as) and u(fa) act in the direction of reducing volitional dissonance, but are resisted by modal dissonance pressures; and discrepancy dissonance in relation to u(fs) acts in the direction of dissonance reduction in the modal mode but is resisted by volitional mode pressures. (See expressions 13.28, 13.29 and 13.30)

higher instance in group 3 (54%) compared with group 2 (31%) reflects the presence of more extensive antagonistic pressures in the former group compared with the latter.

ASPECT II: HYPOTHESES: "INTERACTING MODES OF DISSONANCE" - TWO COUNTER-COMMUNICATIONS AND ONE CONFIRMATORY

The second aspect of the present study was designed to test whether the imposition of constraints on the "single-sign-change" path to balance resolution", would result in the use of "two-sign-change paths to balance", as would be predicted on the basis of the balance model, or whether the changes in evaluations of the beliefs in question would conform to what would be expected according to the predictions based on the analysis of interacting modes of dissonance.

In this second aspect, the subjects were assigned to four experimental groups which were identical to those of the first aspect, both in terms of the "store owner's" evaluations to be internalized, and in terms of the initial situation confronting the "store owner". Thus, all subjects were to internalize a favourable evaluation towards "high sales volume", and, inaddition, they were to internalize: in group 1', favourable evaluations of "modern art" and "Fenwick"; in group 2', a favourable evaluation of "Fenwick" and an unfavourable one of "modern art"; in group 3', unfavourable evaluations of both "Fenwick" and "modern art"; and in group 4', an unfavourable evaluation of "Fenwick" but a favourable one of "modern art".

However, for each group the subsequent situation confronting the subjects differed in that, instead of all three reports contradicting the three relationships established in the initial situation, as in aspect I of this study, one of them confirmed one of these relationships. Thus, whilst for each group, two of the initial relationships were flatly contradicted by exactly the same counter-communications as before, the remaining relationship was confirmed by a communication which replaced the corresponding counter-communication.

The particular relationship confirmed varied across the four groups. In the first three groups, the one confirmed was that which, if it had been free to change should, according to the balance model, allow a "one-sign-change balance resolution". For the first three groups, therefore, the confirmed relationships were:

group 1': the Art-Sales relationship,

group 2': the Fenwick-Art relationship,

group 3': the Fenwick-Sales relationship.

For different reasons, there being no "one-sign-change balance resolution" available for group 4 subjects, one relationship was confirmed for the fourth group, i.e.

group 4': the Fenwick-Sales relationship.

The confirmatory reports which replaced the corresponding counter-communications of aspect I of the study were:

for group 1'

"A second market research organisation has confirmed that modern art displays in department stores are regarded as 'gimmicky' and give offence to the majority of long-standing regular customers who may withdraw their custom in protest. During the duration of such displays the fall in sales has been found to be substantial."
(this report replaces counter-communication 2 of aspect I of the study)

for group 2'

"Another store officer walks in and during a chat confirms that Fenwick is going ahead with the modern art display which he will mount in a few weeks' time."
(this report replaces counter-communication 3)

for groups 3' and 4'

"A store officer has just come back from completing some investigations into market trends. The market in rugs is very depressed. Compared with this general state of affairs Fenwick's performance in sales is exceptionally good."
(this report replaces counter-communication 1).

The presence of one confirmatory report, together with the two counter-communications will, of course, result in a different set of outcome beliefs for the subjects in aspect II of this study, compared with those in aspect I who received three counter-communications. The subject's belief about the relationship that is confirmed is not

expected to change; no discrepancy dissonance is aroused with respect to it, on the contrary its confirmation will tend to strengthen it.

Accommodative reappraisals of the subject's beliefs about the other two relationships are, on the other hand, expected, following the arousal of discrepancy dissonances with respect to them. However, for the subjects of groups 1' and 4', the accommodative reappraisal of one of the two beliefs in question is not expected to be the same as that of the same belief for the subjects of the corresponding groups in aspect I of the study. For groups 2' and 3', the accommodative reappraisals of both beliefs <u>are</u> expected to be the same as for groups 2 and 3. The specific hypotheses to be tested, relating to these differences between the groups of aspect II compared with the corresponding groups of aspect I, follow the analysis of the interacting pressures operating during accommodative reappraisal for the subjects of aspect II.

For all subjects, the initial situation confronting them is the same as before. Therefore, the analysis of the appraisal of the initial situation is identical for groups 1 and 1', groups 2 and 2', groups 3 and 3' and groups 4 and 4' respectively. Hence, no differences between the corresponding groups are to be expected in the modal and volitional dissonances aroused during that situation and subsequently bound on the assimilation of the beliefs about the situational relationships between Fenwick, Art and Sales. For the corresponding groups of the two aspects, therefore, the expressions for the dissonances bound in the modal and volitional modes are the same.

It therefore follows that the modal and volitional pressures in existence before the reception of the later communications are the same for the corresponding groups.

However, the subsequent reception of the respective confirmatory reports* for the members of groups 1' and 4' have, if the analysis of Chapter 11 is followed, direct consequences for the nature of the dissonance bound in the volitional mode. For these two groups the volitional pressures do not continue to contribute in the same way as for the corresponding groups of aspect I.

Groups 1 and 1'

Consider dissonance bound in the volitional mode. Whilst, for the subjects of group 1 (aspect I) Fenwick could be attributed the power to effectively manipulate a modernart display in order to promote sales, such an attribution becomes virtually impossible for the subjects of group 1', in the face of the strong confirmation that modern art displays lead to decreased sales. Thus, whereas for group 1 subjects, the attributed manipulative act could feature as a consonant element in the volitional mode, this could not continue to be the case for group 1' subjects. Hence, for group 1' subjects, the expression for bound volitional dissonance becomes:

$$\text{bound:} D_v = G(s)r(s)\frac{(\, r(a) + r(f)/\underline{u}(fa)'/)/\underline{u}(as)'/}{r(f)/\underline{u}(fs)'/} \qquad 13.53$$

* i.e. For group 1' the report is the one which confirms that modern art decreases sales; for group 4' it is the one which confirms that Fenwick increases sales.

in which the denominator has lost the term: $r(f)\,\underline{u}(fa)'\underline{u}(fs)'$, corresponding to the additional consonant element for group 1 subjects - see expression 13.20.

(Expression 13.53 corresponds to the magnitude of bound volitional dissonance, due to the presence of the dissonant elements: Art decreases Sales, $r(a)\underline{u}(as)'$, and Fenwick intends to mount a modern art display which will decrease Sales, $r(f)\underline{u}(fa)'\underline{u}(as)'$ (i.e. the appraised indirect effect of Fenwick on Sales). In the denominator, $r(f)\underline{u}(fs)'$ represents the assimilated consonant element that Fenwick increases Sales.)

Since the Art-Sales relationship, u(as), is constrained against change by the confirmatory report, the only possible changes that can occur, are in the Fenwick-Sales relationship, u(fs), and in the Fenwick-Art relationship, u(fa). For group 1 subjects (i.e. aspect I), the expression for change in evaluation of the Fenwick-Sales relationship has been given as:

Group 1

$$\text{Delta } u(fs) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad (13.22)$$

For group 1' subjects (i.e. aspect II), the modal mode pressures operate in the same way as for group 1 subjects, and from the position of u(fs) in the denominator of expression 13.53 (i.e. its role as a consonant element), it is seen that the volitional pressure also resists accommodative reappraisal, as it does for group 1 subjects. Therefore, for:

Group 1'

$$\text{Delta } u(fs) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad 13.54$$

It is evident from expressions 13.21 and 13.54 that no systematic differences are to be expected between groups 1 and 1' in the mean change in evaluations of u(fs). Therefore, the following hypothesis is to be tested:

Hypothesis II-FS(11')

No systematic differences will exist between groups 1 and 1' with respect to the outcome beliefs about the Fenwick-Sales relationship.

The expression for change in evaluation of the Fenwick-Art relationship for group 1 subjects, has been given as:

Group 1

$$\text{Delta } u(fa) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) - (a_{v1}-a_{v2})(\text{bound:}D_v) - P \qquad (13.23)$$

For group 1', the difference in bound volitional dissonance is manifested as a pressure in the volitional mode, which assists the accommodative reappraisal of the Fenwick-Art relationship. That is, the volitional mode pressure operates in the direction of the import of the counter-communication, which is that Fenwick has changed his mind about mounting a modern art display. Therefore, for:

Group 1'

$$\text{Delta } u(fa) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 13.55$$

Comparing 13.23 with 13.55, it follows that the mean change in evaluation of u(fa) should be greater for group 1' than for group 1, due to the

difference in the respective contributions of the volitional mode pressures. Therefore, the hypothesis to be tested is that:

Hypothesis II-FA(11')

The outcome beliefs about the Fenwick-Art relationship for group 1' will tend towards a dissociative relationship to a greater extent than will the corresponding outcome beliefs for group 1.

It will be noted that the action of discrepancy dissonance with respect to the Fenwick-Sales and Fenwick-Art relationships is such that modal dissonance will tend to become increased (as is indicated in expressions 13.54 and 13.55, in which the discrepancy dissonances are acting in opposition to the modal dissonance pressures), and that it is such that volitional dissonance can be reduced only by way of attenuating the contribution of u(fa) to the face-value indirect effect, u(fa)'u(as)', which refers to "Fenwick intends to mount a display of modern art, which will lead to a loss in sales" (see expression 13.55 and the expression for the magnitude of volitional dissonance, 13.53).

Groups 2 and 2'

Whereas for group 1', the confirmatory report that modern art decreases sales, results in a change in bound volitional dissonance, the confirmation received by group 2' subjects that Fenwick is going ahead with the art display has no effect on the elements bound in the volitional mode. Thus, the dissonant face-value indirect effect, u(fa)'u(as)', and the consonant manipulative indirect effect,

$\underline{u}(fa)'\underline{u}(fs)'$, remain as for group 2. This follows from the consideration that the confirmation, that Fenwick will mount the art display, has no bearing on the possible attributed outcomes in relation to the effect that modern art has on sales. The two possibilities remain, i.e. that Fenwick is going ahead with a display that might decrease sales (face-value indirect effect) and that Fenwick is going ahead with a display which he might fashion in such a way that it increases sales (indirect manipulative effect).

Since there is no change in the expression for bound volitional dissonance, and since the modal pressures act as for group 2, the accommodative reappraisals of the beliefs about the relationships between Art and Sales, and between Fenwick and Sales, are given by the same expressions as for group 2. (The Fenwick-Art relationship is, of course, constrained by the confirmatory report).

Thus, for groups 2 and 2':

$$\text{Delta } u(as) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad (13.24)$$

and

$$\text{Delta } u(fs) = a(\text{discrep:}D) - a_m(\text{bound:}D_m) - a_v(\text{bound:}D_v) - P \qquad (13.25)$$

The corresponding hypotheses to be tested are that:

Hypothesis II-AS(22')

No systematic differences will exist between groups 2 and 2' with respect to the outcome beliefs about the Art-Sales relationship.

Hypothesis II-FS(22')

No systematic differences will exist between groups 2 and 2' with respect to the outcome beliefs about the Fenwick-Sales relationship.

It will again be noted that the action of discrepancy dissonance is such that modal dissonance will tend to become increased (in expressions 13.24 and 13.25, the discrepancy dissonances act in opposition to the modal dissonance pressures), but that, in contrast to group 1', the accommodative reappraisal of u(as), in the direction of "Art increases Sales" (13.24), allows a clear way for volitional dissonance reduction.

Groups 3 and 3'

In Chapter 11, an analysis has been given of the attribution of the possible successful outcome of an action by an agent, which involves the manipulation of an intermediary entity so as to conform with the perceived intention of that agent. This is the analysis which has been applied to the volitional mode of appraisal of "Fenwick" as the agent, "modern art" as the intermediary, and the "promotion of sales" as the perceived intention of the agent (see this chapter: The 1960 experiment: volitional appraisal). The result of this analysis was the delineation of the consonant manipulative indirect effect (Fenwick mounts a modern art display in order to promote sales), which was approximated to $u(fa)'u(fs)'$, for the subjects of groups 1 and 2 (aspect I), and to zero for the subjects of groups 3 and 4 (aspect I).

The approximations were derived on the combined bases of the circumstances of the situation that was being appraised (i.e. in particular, the degree of certainty of Fenwick's relationship to Sales), and of the referent evaluations of "Fenwick" and "modern art" held by the subjects. For aspect I of this study, the circumstances of the initial situation were such that Fenwick's relationship to Sales was considered to be uncertain - the description of the initial situation was that Fenwick had increased sales in the past year, but that he was about to mount a display of modern art which, according to a leading market research organisation, would give rise to a substantial loss in sales (see 13.16 and 13.17, and Chapter 11, 11.24 and 11.25).

However, in the subsequent situation confronting group 3', Fenwick's ability to increase sales is confirmed, and the circumstances of the situation change, such that Fenwick's relationship to sales becomes certain ("Fenwick's performance in sales is exceptionally good"). Whether or not this "certainty" about the Fenwick-Sales relationship results in the establishment of an element in the volitional mode, corresponding to the attribution of a possible successful manipulation of modern art, depends, according to the analysis of Chapter 11, on the referent evaluations of both Fenwick and modern art. The relevant results of that analysis are given by 11.26 and 11.27 (Chapter 11) which, translating into the appropriate symbols for Fenwick (f), modern art (a), and sales (s), state that:

$p(f.a)p(fs)' = \underline{u}(fs)'$ for favourable referent evaluations of either the agent "Fenwick", or the intermediary "modern art", or of both. 13.56

$= 0$ for unfavourable referent evaluations of both the agent and the intermediary. 13.57

(in which, $p(f.a)$ represents the appraised probability of effective manipulation of "modern art" by "Fenwick", which is approximated to unity under conditions 13.56, and to zero under conditions 13.57; $p(fs)'$ represents the appraised probability of outcome of the directional relationship between "Fenwick" and "sales", which here is equal to $\underline{u}(fs)'$, irrespective of the conditions 13.56 and 13.57, due to the confirmation of that relationship.)

Result 13.57 is the one applicable for group 3' subjects, since their referent evaluations of both Fenwick and modern art are unfavourable. (I.e. in this case, the effective manipulation of modern art, $p(f.a)$ is appraised as improbable - see Chapter 11: Appraised manipulative effects for conjunctive frames of reference; and the results 11.18, 11.19 and 11.20.) Thus, in the case of group 3' subjects, the dissonance bound in the volitional mode is not affected by the confirmatory report, and hence is the same as for the group 3 subjects. Since the bound modal dissonance is also the same, the expressions for the expected degrees of accommodative reappraisal of the Art-Sales and the Fenwick-Art relationships, will be identical for the two

groups, i.e.

for groups 3 and 3'

$$\text{Delta } u(as) = a(\text{discrep:D}) - a_m(\text{bound:D}_m) + a_v(\text{bound:D}_v) - P \quad (13.28)$$

and

$$\text{Delta } u(fa) = a(\text{discrep:D}) - a_m(\text{bound:D}_m) + a_v(\text{bound:D}_v) - P \quad (13.30)$$

The hypotheses to be tested are therefore:

Hypothesis II-AS(33')

No systematic differences will exist between groups 3 and 3' with respect to the outcome beliefs about the Art-Sales relationship.

Hypothesis II-FA(33')

No systematic differences will exist between groups 3 and 3' with respect to the outcome beliefs about the Fenwick-Art relationship.

(The Fenwick-Sales relationship is constrained by the confirmatory report.)

As in groups 1' and 2', the action of discrepancy dissonance is such that modal dissonance will tend to become increased, since it acts in opposition to the modal mode pressures. But volitional dissonance should be readily decreased, since the discrepancy and volitional pressures act in conjunction with respect to the accommodative reappraisal of both beliefs (expressions 13.28 and 13.30).

Groups 4 and 4'

For the subjects of group 3', for whom both Fenwick and modern art are evaluated unfavourably, the confirmation of the Fenwick-Sales

relationship is held to have no effect on the dissonance bound in the volitional mode. The result 13.57 indicates, however, that, when either Fenwick or modern art is evaluated favourably, the confirmation of Fenwick's ability to increase sales, is expected to give rise to the attribution to Fenwick of a possible successful manipulation of modern art.

It so happens that, for the group (i.e. group 4) in which no "one-sign-change path to balance resolution" exists, hence for which no such path could be blocked (the rationale behind groups 1', 2' and 3'), the appropriate conditions could be set up for testing the effect of introducing "certainty" about the Fenwick-Sales relationship, when Fenwick is evaluated unfavourably, but modern art is highly regarded.

Thus, for group 4' subjects, the Fenwick-Sales relationship was confirmed, using the same confirmatory report as for group 3' subjects. Since the effect of this confirmation is held to be the establishment of the additional consonant element $r(f)\underline{u}(fa)'\underline{u}(fs)'$ in the volitional mode, bound volitional dissonance is given by:

for group 4' subjects (aspect II)

$$\text{bound:} D_v = G(s)r(s)\,\frac{(\,r(a) + r(f)/\underline{u}(fa)'/)/\underline{u}(as)'/}{r(f)\,(\,1 + /\underline{u}(fa)'/)/\underline{u}(fs)'/} \qquad 13.58$$

which is to be compared with the corresponding expression

for group 4 subjects (aspect I)

$$\text{bound:}D_v = C(s)r(s)\,\frac{(r(a) + r(f)/\underline{u}(fa)'/\ )/\underline{u}(as)'/}{r(f)/\underline{u}(fs)'/} \qquad (13.27)$$

The expression for the expected accommodative reappraisal of u(as) has been given for group 4 subjects. It is:

Group 4

$$\text{Delta } u(as) = a(\text{discrep:}D) + a_m(\text{Bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad (13.33)$$

The same pressures operate in relation to u(as) for group 4' subjects, i.e.

Group 4'

$$\text{Delta } u(as) = a(\text{discrep:}D) + a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad 13.59$$

The following hypothesis is, therefore, to be tested:

Hypothesis II-AS(44')

No systematic differences will exist between groups 4 and 4' with respect to the outcome beliefs about the Art-Sales relationship.

The difference in bound volitional dissonance for group 4' subjects compared with those of group 4, following the confirmation of the Fenwick-Sales relationship, manifests itself in relation to the expected accommodative reappraisal of the Fenwick-Art relationship. For group 4 subjects, the expected change in the belief about the Fenwick-Art relationship, has been given as:

Group 4

$$\text{Delta } u(fa) = a(\text{discrep:}D) + a_m(\text{bound:}D_m) + a_v(\text{bound:}D_v) - P \qquad (13.35)$$

For group 4' subjects, however, the expression for the expected change in u(fa) differs, and includes an additional, resisting, volitional mode pressure due to the additional consonant element, indicated in the denominator of expression 13.58, i.e.

Group 4'

$$\text{Delta } u(fa) = a(\text{discrep:}D) + a_m(\text{bound:}D_m) - (a_{v1} - a_{v2})(\text{bound:}D_v) - P \qquad 13.60$$

in which the one volitional mode contribution, denoted by a_{v1}, refers to the resisting pressure arising from the presence of the consonant indirect manipulative effect, $\underline{u}(fa)'\underline{u}(fs)'$, and the other contribution, denoted by a_{v2}, refers to an antagonistic pressure arising from the presence of the dissonant face-value indirect effect, $\underline{u}(fa)'\underline{u}(as)'$ (see expression 13.58).

Comparing 13.35 with 13.60, it follows that the mean change in evaluation of u(fa) should be less for group 4' compared with group 4. The corresponding hypothesis to be tested is that:

Hypothesis II-FA(44')

The outcome beliefs about the Fenwick-Art relationship for group 4' will tend away from an associative relationship to a lesser extent than will the corresponding outcome beliefs for group 4.

It is evident from expressions 13.59 and 13.60, that, in contrast to groups 1', 2' and 3', the action of discrepancy dissonance for group 4' subjects is such that modal dissonance can become readily decreased (i.e. discrepancy dissonance pressures act in conjunction

withthe modal mode pressures). This is a consequence of blocking the respective paths to modal dissonance reduction in groups 1', 2' and 3', but not in group 4'.

Before the statistical tests of these hypotheses are presented, the experimental manipulation introduced to favour balance model predictions is described.

ASPECT II: ENHANCED CONDITIONS FOR "TWO-SIGN-CHANGE BALANCE RESOLUTIONS"

In aspect I of the present study, the intensity of evaluation of the entities "modern art" and "Fenwick" was manipulated in order to relax the constraints on changes in their evaluations, so as to enhance the conditions for possible two-sign-change balance resolutions. The identical manipulations were also included in aspect II, so that each of the groups 1', 2' and 3' was subdivided into three, which corresponded to the subgroups formed in aspect I. For example, in group 1', subgroups A', B' and C' corresponded to the subgroups A, B and C of group 1 (aspect I), such that: in subgroups A and A', no manipulation was introduced; in subgroups B and B', the intensity of the evaluation of "modern art" was attenuated; and in subgroups C and C', the intensity of evaluation of "Fenwick" was attenuated. (For the corresponding manipulations for the subgroups D', E' and F' (group 2'), and G', H' and I' (group 3'), refer to: Enhanced conditions for "two-sign-change balance resolutions" (aspect I).)

The particular subgroups in which the incidence of two-sign-change resolutions should be greater, arguing from the balance model, are,

of course, the same as the corresponding subgroups in aspect I. This follows from the fact that aspect I and aspect II do not differ in relation to possible two-sign-change resolutions, but only in relation to one-sign-change resolutions which are blocked in aspect II.

ASPECT II: RESULTS

The number of subjects per group who both correctly internalized the affective evaluations appropriate to their respective experimental groups, and correctly perceived the initial relationships between the three entities, was:

group 1' - 26, group 2' - 35,

group 3' - 30, group 4' - 14.

The mean ratings per group of the subjects' final beliefs about the relationships existing between Art and Sales, u(as), between Fenwick and Sales, u(fs), and between Fenwick and Art, u(fa), are given in Table 13.27. For comparison, the corresponding values are given for the groups of aspect I.

ASPECT II: TESTS OF HYPOTHESES: "INTERACTING MODES OF DISSONANCE"

The following are the results of testing the hypotheses that relate to the outcome beliefs for the corresponding groups of aspect I and aspect II, which are derived from the analysis of interacting modes of dissonance.

Hypothesis II-FS(11')

No systematic differences will exist between groups 1 and 1' with respect to the outcome beliefs about the Fenwick-Sales relationship.

Result

No significant difference was found (t less than 1, df = 46).

Table 13.27 Final beliefs about the relationship existing between the relevant entities (aspects I and II)

		Final beliefs after receiving: two counter-communications and one confirmatory report (aspect II); or three counter-communications (aspect I):		
Group	N	u(as)	u(fs)	u(fa)
II: 1'	26	(-5.42)	+5.23	+0.42
I: 1	22	+1.59	+5.64	+3.50
II: 2'	35	-0.09	+4.77	(+8.20)
I: 2	32	-1.00	+5.03	+3.03
II: 3'	30	-0.63	(+7.97)	+2.30
I: 3'	28	-1.04	+3.71	+2.46
II: 4'	14	+0.93	(+7.86)	+3.43
I: 4	22	+1.32	+3.36	-0.68

Confirmed relationships are given in brackets

Hypothesis II-FA(11')

The outcome beliefs about the Fenwick-Art relationship for group 1' will tend towards a dissociative relationship to a greater extent than will the corresponding outcome beliefs for group 1.

Result

The hypothesis was confirmed ($t = 3.27$, $df = 46$, p less than 0.005, one tail test).

Hypothesis II-AS(22')

No systematic differences will exist between groups 2 and 2' with respect to the outcome beliefs about the Art-Sales relationship.

Result

No significant difference was found (t less than 1, $df = 65$).

Hypothesis II-FS(22')

No systematic differences will exist between groups 2 and 2' with respect to the outcome beliefs about the Fenwick-Sales relationship.

Result

No significant difference was found (t less than 1, $df = 65$).

Hypothesis II-AS(33')

No systematic differences will exist between groups 3 and 3' with respect to the outcome beliefs about the Art-Sales relationship.

Result

No significant difference was found (t less than 1, $df = 56$).

Hypothesis II-FA(33')

No systematic differences will exist between groups 3 and 3' with respect to the outcome beliefs about the Fenwick-Art relationship.

Result

No significant difference was found (t less than 1, $df = 56$).

Hypothesis II-AS(44')

No systematic differences will exist between groups 4 and 4' with respect to the outcome beliefs about the Art-Sales relationship

Result

No significant difference was found (t less than 1, df =34)

Hypothesis II-FA(44')

The outcome beliefs about the Fenwick-Art relationship for group 4' will tend away from an associative relationship to a lesser extent than will the corresponding outcome beliefs for group 4.

Result

The hypothesis was confirmed (t = 3.12, df = 34, p less than 0.005, one tail test).

These results again give substantial support for the theoretical propositions concerning the interaction of aroused discrepancy dissonance with dissonances bound in the modal and volitional modes of the identity structure. In addition, the confirmation of hypotheses II-FA(11') and II-FA(44') provides further evidence for the theoretical analysis, which considers that the attribution of certain outcomes to an agent (which would require the successful manipulation of some intermediary by that agent) will occur by a process that involves a projection of the affective evaluations of both the agent and the intermediary on to the distal stimuli.

Thus, the confirmation of hypothesis II-FA(11') illustrates that, when the conditions of appraisal become such that it is "certain" that the intermediary cannot be manipulated (i.e. when in group 1',

it is confirmed that "modern art", the intermediary, will decrease sales), then the attribution of possible successful manipulation, as in group 1, can no longer occur. The confirmation of hypothesis II-FA(44') indicates that, when the effectiveness of the agent (Fenwick) in pursuit of his intention (to promote sales) becomes "certain", then the agent is attributed the possible successful manipulation of the intermediary (modern art), provided that either he or the intermediary is favourably evaluated.

ASPECT II: EXAMINATION OF "BALANCE RESOLUTIONS"

From aspect I of the present study, it was estimated that volitional mode pressures were, on the average, more than twice as strong as those in the modal mode. It is, therefore, to be expected that such predominance of the volitional mode would militate (in the three groups matching those used by Rosenberg and Abelson) against the "two-sign-change balance resolutions", corresponding to the balance model predictions (i.e. the sole operation of the modal mode pressures). This, is, indeed, found to be the case, as the results given in Table 13.28 indicate. Only in nine instances out of 81 may it be said that a "two-sign-change balance resolution" was achieved; only five of these were unequivocal cases of balance resolution, since in the other four the outcome evaluation of either one of the entities or one of the relationships was zero. It will be noted that even when conditions were most optimal for such balance resolutions, very few actually occurred.

Table 13.28: Subjects attaining "balance resolution" when the "one-sign-change path to balance" is blocked*

		Balance resolution type:									
		f	a	s	f	a	s	f	a	s	
Group	N	+	+	+	+	−	+	−	−	+	No balance
1'	26	xx1xx			3			0			22
A'	10	xx1xx			...0...			0			
B'	7	xxxxx			...2.(1)			0			
C'	9	xxxxx			...0...			0			
2'	35	3			xxxxx			1			31
D'	12	..1.(1)			xxxxx			..0..			
E'	11	..0..			xxxxx			..0..			
F'	12	..0.(1)			xxxxx			..1..			
3'	30	0			2			xxxxx			28
G'	9	0			..0..			xxxxx			
H'	13	0			..0..			xxxxx			
I'	8	0			..1.(1)			xxxxx			

xxxxx : blocked "one-sign-change" resolution.

..... : balance model prediction for "two-sign-change" resolution.

..... : enhanced conditions for "two-sign-change" resolution.

* Figures in brackets refer to subjects attaining "pseudo-balance", i.e. these subjects conform to the balance resolution indicated, except that their outcome evaluation of either one of the relationships is zero, of one of the entities is zero.

However, the evidence does indicate a tendency for the few instances that did occur to be related to these enhanced conditions (i.e. this is true for six out of the nine cases). This suggests, therefore, that for a very small number of subjects, the modal mode does actually predominate. No instance was found of a "three-sign-change balance resolution".

ASPECT II: FREQUENCY OF DISSONANCE REDUCTION IN THE MODAL AND VOLITIONAL MODES

Estimates for each subject were obtained for the modal and volitional dissonances, both before and after the two counter-communications and one confirmatory report. These estimates were derived from the subject's ratings of the two sets of measurement scales, by substituting them into the appropriate expressions - the analysis and the calculations were done by computer, using a program developed for the purpose.

Table 13.29 summarises the frequency of increases or decreases in the estimated magnitudes of modal and volitional dissonances, associated with the accommodative reappraisal following the reception of the three reports. Considering the first three groups (corresponding to Rosenberg and Abelson's three groups), the confirmatiam of the one relationship in aspect II results in a state of affairs with regard to modal dissonance, which is quite different from that arising from the contradiction of all three relationships in aspect I. Whereas, in groups 1, 2 and 3 (aspect I), there were only 16 out of 82 cases of

Table 13.29: Frequency of changes in the estimates of modal and volitional dissonance, following the reception of two counter-communications and one confirmatory report

For groups 1', 2' and 3', the respective confirmatory reports were designed to block possible "one-sign-change balance resolutions".

Group	N	Change in the estimate of modal dissonance:	Change in the estimate of volitional dissonance: decrease	increase	
1'	26	decrease	9	4	
		increase	5	8	
2'	35	decrease	7	1	
		increase	25	2	
3'	30	decrease	8	0	
		increase	22	0	
4'	14	decrease	12	0	
		increase	2	0	
TOTALS	105	decrease	36	5	41
		increase	54	10	64
			90	15	

increased modal dissonance (Table 13.26), there were 62 out of 91 such instances in the corresponding groups 1', 2' and 3' of aspect II.

This result is, of course, a direct consequence of the confirmation of the one relationship, (the accommodative reappraisal of which would have allowed dissonance reduction in the modal mode, as in aspect I), and of the arousal of discrepancy dissonance with respect to the other two beliefs in question. The accommodative reappraisal of the latter beliefs was such that modal dissonance would tend to become increased. It was also such that the discrepancy dissonance pressures would tend to be assisted by the volitional mode pressures in relation to one or both beliefs, depending on the group membership*.

There are two further features of Table 13.29 that are of interest. One is the existence, in group 1', of a substantial number of increases in volitional dissonance. This is the consequence of (a) the confirmatinn of the volitional dissonant element, that modern art will lead to a loss in sales (b) the loss, thereby, of the consonant

* It should be remembered that other means remain by which dissonance can become decreased. These are by changes in the affective evaluations of the referents, or by the attenuation of the degree of perceived relevance of the referents in the context of the situation (cf. Chapter 9), or of the strength of ego-involvement in the referents (cf. Chapter 12). Such cases were quite common in the present study, but they have not been systematically analysed. However, changes in these variables will have contributed towards the changes in the estimates of modal and volitional dissonances, tabulated in Tables 13.26 and 13.29.

element corresponding to the attributed possible successful manipulation of modern art by Fenwick, and (c) the indirect means of dissonance reduction available in the volitional mode, by way of the over-accommodation of the Fenwick-Art relationship towards the belief that Fenwick will not mount the display.

The second feature is that, in group 4', dissonances in both the modal and volitional modes are decreased in almost all cases. This is because, in this group, the aroused discrepancy dissonances in relation to the beliefs about the Art-Sales and Fenwick-Art relationships, are such as to assist the reduction of dissonance in the modal mode, and that in relation to the belief about the Art-Sales relationship is such as to assist also the reduction of volitional dissonance.

In all, the changes in the estimated magnitudes of modal and volitional dissonances, tabulated in the two Tables 13.26 and 13.29, mirror to a remarkable degree the analysis of the interaction of discrepancy dissonance with the dissonances bound in the modal and volitional modes of the identity structure. The large number of instances in which <u>modal</u> dissonance has become <u>increased</u>, recorded in Table 13.29, again illustrates the fundamental deficiency of the balance model in giving a primary status to a self evident notion of "consistency". According to the balance model, modal dissonance (a measure of "imbalance") should become decreased - if not by "one-sign-change paths" (which were blocked in the first three groups of aspect II),

then by "two-sign-change paths". In the vast majority of cases, this clearly did not happen. Instead the arousal of discrepancy dissonances (aspect II) has resulted in frequent instances of increased modal dissonance, though at the same time, dissonance reduction in the volitional mode hascontinued to predominate - 90 out of 105 instances of volitional dissonance reduction recorded in Table 13.29 (aspect II), compared with 89 out of 104 recorded in Table 13.16 (aspect I).

ASPECTS I AND II: THE CONSEQUENCES OF INCREASES IN VOLITIONAL DISSONANCE

In the final sequence of their role-playing the "store owner", all subjects in both aspects of the present study were asked to state what action, if any, they would take in relation to Fenwick. They were specifically asked whether or not they would dismiss him, transfer him to another department, or direct him not to mount the modern art display. Considering the volitional aspect of the store-owner's identity, the dismissal or the transferal of Fenwick, or the direction to him to abandon the art display, may be called, for convenience, an instance of "removal" action. That is, an instance of "removal" action would refer to the removal of an agent (i.e. Fenwick or modern art) that might do harm (in relation to the store-owner's intention to promote sales), from the immediate arena confronting the store owner.

The frequencies of such "removal" action, f, for all subjects in aspects I and II of the study, are tabulated in Table 13.30, according

to whether, during accommodative reappraisal:

(a) dissonance in both the volitional and modal modes has become increased (N = 13), or 6.2% of the total number of subjects);

(b) volitional dissonance has become increased, but dissonance in the modal mode has become decreased (N = 17, or 8.1% of the total);

(c) modal dissonance has become increased, but volitional dissonance has become decreased (N = 69, or 33.0% of the total);

(d) both volitional and modal dissonances have become decreased, i.e. the remainder (N = 110, or 52.6% of the total).

Once again, in terms of the actions specified by the subjects, the volitional mode predominates. Of the small minority of subjects (6.2%) for whom both volitional and modal dissonances become increased, 100% of them specified one or another form of "removal" action. Again, of the small minority of subjects (8.1%) for whom volitional dissonance becomes increased, but for whom modal dissonance becomes decreased, 82% of them specified "removal" action. On the other hand, for those subjects (33.0%) for whom modal dissonance only becomes increased, only 32% specified "removal" action, and for the remainder (52.6%) the figure is only 37%. Thus, those subjects for whom volitional dissonance becomes greater as a consequence of accommodative reappraisal following the arousal of discrepancy dissonance, take action to eliminate that dissonance to a much greater extent than do those for whom volitional dissonance becomes reduced, even when such reduction

Table 13.30: Frequency of "removal" action (i.e. dismissal or transfer of Fenwick, or direction to him not to display modern art)*

Group	Increase in both volitional and modal dissonances		Increase in volitbnal dissonance only		Increase in modal dissonance only		Remainder		Total f	Total N
	f	N	f	N	f	N	f	N		
1	0	0	0	1	0	0	5	21	5	22
2	3	3	3	3	0	4	8	22	14	32
3	0	0	4	6	3	9	10	13	17	38
4	0	0	2	2	0	2	5	18	7	22
Totals	3	3	9	12	3	15	28	74	43	104
1'	8	8	4	4	4	5	6	9	22	26
2'	2	2	1	1	6	25	2	7	11	35
3'	0	0	0	0	8	22	3	8	11	30
4'	0	0	0	0	1	2	2	12	3	14
Totals	10	10	5	5	19	54	13	36	47	105
Totals for all groups	13	13	14	17	22	69	41	110	90	209
	(100%)		(82%)		(32%)		(37%)			

* Each subject was able to score only once in this Table. Thus, in cases in which, for example, the subject indicated that he would both transfer Fenwick and direct him not to mount the art display, he would be scored once only (clearly, the transferal of Fenwick makes redundant, in any case, the direction to him to abandon the art display).

is accompanied by an increase in modal dissonance. (The fact that about one third of those subjects for whom volitional dissonance has become decreased, also specify "removal" action, is evidently related to the volitional dissonance that remains for them.)

In addition, it becomes evident that, though the modal mode does initially predominate during accommodative reappraisal in a minority of cases, the volitional mode ultimately dominates for these subjects, in the form of a much greater readiness to endorse "removal" actions.

THEORETICAL NOTE

These findings are provocative in relation to the processes that operate when, in respect to some referent intention or identification in the volitional mode, no consonant elements remain. The imminent existence of such a state of affairs seems to activate processes that result in possible "solutions" becoming adduced to the referent as hallucinated consonant elements. These "new" elements enable the magnitude of volitional dissonance to be kept within bounds, and, at the same time, allow the referent intention or identification to remain more or less intact.

Thus, in the present study, it is seen that discrepancy dissonance may result in a degree of accommodative reappraisal which brings about the imminent elimination of the consonant elements with respect to the referent intention "to promote sales". That is, accommodative reappraisal may occur to the extent that Fenwik is seen to have an

adverse effect on sales, and is seen to be about to mount a disastrous art display, which will contribute further to diminished sales (or the accommodative reappraisal may be such as to give rise to a substantial increase in volitional dissonance). In such circumstances, it is evident from the tabulated results that the possible "solutions" specified in the role-playing pamphlet, which are consonant with respect to "promoting sales" (i.e. the transfer or dismissal of Fenwick, or the direction to him to abandon the art display), are very readily endorsed.

However, it will be noted that the endorsement as such does not eliminate volitional dissonance, unless the endorsed action is in fact taken. In other words, it would appear that the adducement of possible consonant "solutions" or potential actions, is a necessary first process that operates to keep volitional dissonance at a tolerable level. The presence of consonant potential action may then result in the actual corresponding action. Naturally, the elimination of volitional dissonance will occur only if the action is successfully taken, or if the intention or identification becomes relinquished, but to the extent that it is possible for consonant elements to continue to be adduced without being put to the test, it follows that volitional dissonance may be kept within tolerable limits more or less indefinitely.

ASPECTS I AND II: "ERRORS"

As in the original experiment, a fairly high proportion of subjects were excluded from the fore-going analysis of results. These were subjects who, in their first set of ratings, indicated that either the affective evaluations they had internalised, or their assimilation of the relationships between the three entities (Fenwick, modern art and sales), or both of these, failed to correspond to the ones presented to them in the initial situation. These subjects are here regarded as being in "error" in respect of their appraisal of that situation.

Table 13.31 gives the "error" rates for the present study, and the corresponding ones for the Rosenberg and Abelson (1960) study. The subjects falling under the heading "valid" refer to those for whom their data in the subsequent phases of the respective studies have been analysed. It is evident that the "error" rates of the present study, which corresponds to the Rosenberg and Abelson Study 2, are comparable to those of the 1960 studies.

A simple analysis of the arousal of modal and volitional dissonances for these subjects, gives further support for the theoretical propositions of this thesis. It has been argued that the processes maximizing psychological efficiency, operating during appraisal, will tend to minimise the arousal of dissonance, if conditions permit (Chapter 6: Distortion of appraisal, and elsewhere).

Table 13.31: Comparison of "error" rates between the present study and the 1960 study

Group	"valid"	"error"	total (N)	error rate
Present study (aspects I and II)				
1 and 1'	48	25	73	34%
2 and 2'	67	15	82	18%
3 and 3'	58	22	80	28%
Total (3 groups)	173	62	235	26%
4 and 4'	36	13	49	26%
Total (4 groups)	209	75	284	26%
Rosenberg and Abelson (1960): Study 1				
1	22	12	34	35%
2	32	1	33	3%
3	28	4	32	13%
Total (3 groups)	82	17	99	17%
Rosenberg and Abelson (1960): Study 2				
1 and 1'	26			
2 and 2'	24	not known		
3 and 3'	22			
Total (3 groups)	72	47	119	40%
Rosenberg and Abelson (1960): Studies 1 and 2				
Total	154	64	218	29%

NB. The present study (aspects I and II) corresponds to the Rosenberg and Abelson Study 2.

The ambiguity of the initial situation confronting the subjects, is precisely the state of affairs in which these processes may operate to their greatest extent for a substantial proportion of subjects.

In other words, the general ambiguity and lack of conclusive evidence in this first situation, allow the pressures deriving from maximizing psychological efficiency to attenuate, for those subjects, the delineation of the distal stimuli (so that the arousal of dissonance is minimized) and to give rise thereby to the considerable distortion of the relationships holding between Fenwick, modern art, and sales. The evidence for this is presented in Table 13.31, where it can be seen that only seven out of 75 "error" appraisals are not accounted for by the complete non-arousal of dissonance in one or another mode*. In addition, it will be noted that the volitional mode again predominates. Only in groups 1 and 1' is there a substantial number of cases of the non-arousal of modal dissonance, and this is mainly because, for the subjects of these groups, the volitional pressures assist the modal pressures.

* The quantitative estimates of dissonance aroused were obtained by substituting the data from the first sets of ratings for each subject into the appropriate expressions for modal and volitional dissonances - the analysis of the subject's appraisal in terms of dissonant and consonant elements, and the computations were achieved by computer, as before.

Table 13.32: Frequency of the non-arousal of modal or volitional dissonance in the "error" subjects

Group	N	modal dissonance:	Volitional dissonance: zero	not zero	
1 and 1'	25	zero	19	2	
		not zero	1	3	
		zero	2	5	
2 and 2'	15	not zero	8	0	
		zero	1	2	
3 and 3'	22	not zero	17	2	
		zero	2	0	
4 and 4'	13	not zero	9	2	
		zero	24	9	33
TOTALS	75	not zero	35	7	42
			59	16	

CONCLUSIONS

Partial replication of the 1960 experiment

(1) The original experiment by Rosenberg and Abelson (1960) was replicated by aspect I of the present study in so far that (a) their primary prediction* concerning the subjects' receptivity to the three counter-communications was again confirmed, and (b) the frequencies of "balance resolutions" mirrored those of the original study, with a fairly high frequency of "appropriate balances" in group 1, but only isolated instances in the other groups. In contrast to the original study, however, no evidence was obtained to support Rosenberg and Abelson's secondary prediction** concerning the subject's receptivity to the communications. The reasons for this difference could be twofold - (i) the omission of certain instructions which were suspected of introducing experimenter bias in the original study, (ii) the extremely heterogeneous nature of the subjects used in the present study compared with the undergraduate students of the original.

(2) Aspect II of the present study was an <u>extension</u> of the original and incorporated an experimental manipulation in which a specific

* i.e. the communication which provided the means for balance by way of one sign change would be the most acceptable of the three.

** i.e. of the other two communications, the one implying two sign changes to reach balance would be better received than the one implying three sign changes.

counter-communication was replaced by a confirmatory one for each group. It therefore played no part as a direct replication of the original, though it was concerned with the effective blocking of "one-sign-change paths to balance" and did correspond to an ineffectual manipulation to this effect in the original study.

Three modes of appraisal

(3) Within the context of the experimental role-playing situation, the theory propounded in Chapters 9, 10 and 11 concerning the operation of the appraisal process in three distinct modes was in general supported. Thus, support was received for the analysis of appraisal and reappraisal as processes which could operate in the following three modes:

(a) the comparison mode, concerned with the recognition of discrepancies between the distal stimuli and the individual's established beliefs, expectations and opinions (i.e. the recognition that another person's opinion on an issue is discrepant from his own, or the recognition that a fact or an actuality is discrepant from his belief or expectation about it),

(b) the modal mode, concerned with the assessment of the distal configuration of relationships between entities that have established emotional significance for the individual (i.e. an assessment in relation to his past history of emotional experiences -

the modal aspect of his identity),

(c) the volitional mode, concerned with the assessment of the actions or influences of distal agents (concerned, also, with his own actions - e.g. decisions - see Chapters 8 and 12) in relation to the individual's identifications and intentions (i.e. an assessment in relation to his orientation to the future, that is, an assessment of the possible outcomes of the actions of others in relation to his striving to fulfil his aims and intentions, and in relation to those people and issues with which he identifies - the volitional aspect of his identity).

Balance model predictions

(4) The balance model predictions concerning "balance resolutions" were, on the other hand, not substantiated. Analysis of the data indicated that, in aspect I of the study, the fairly high incidence of so-called "appropriate balance resolutions" in group 1 could be attributed more to biasing pressures in the volitional mode than to "balance" or modal mode pressures. The experimental manipulation introduced to enhance "two-sign-change resolutions" (especially pertinent to aspect II of the study, in which the "one-sign-change paths" were effectively blocked) did not result, except in a very small minority of cases, in the balance resolutions expected on the basis of the balance model.

Predictions of biases in the reassessment of beliefs, based on the analysis of interacting modes of dissonance

(5)

The analysis of interacting pressures due to the simultaneous presence of discrepancy dissonance, modal dissonance and volitional dissonance, was successful in predicting the general direction of bias in the reassessment of each of the beliefs derived from the initial situation, when the subjects were confronted with discrepant evidence. The initial situation and the subsequent evidence was common for all subjects, irrespective of their group membership, for aspect I of this study. Therefore, these confirmed biases were due solely to the different affective evaluations held by the subjects of the different experimental groups.

(6)

Thus, it was shown that the change in evaluation of a referent belief was dependent upon

(a) a contribution arising from the recognition of a discrepancy between the previously assimilated belief and the subsequent evidence (i.e. discrepancy dissonance),

(b) a biasing pressure arising from the presence of dissonance bound in the modal mode, and

(c) a biasing pressure arising from the presence of dissonance bound in the volitional mode; in which the predisposing or constraining nature of the modal and volitional biases was a

function of the contribution of the initial belief to dissonant or consonant elements in the modal and volitional modes respectively. Whether the operation of the modal and volitional mode biases was mutually supportive or mutually antagonistic, was seen to depend, as predicted, on the affective evaluations internalized by the subjects.

(7) Estimates of the mean relative strengths of the biases arising from the presence of dissonances bound in the modal and volitional modes

The extent of the modal and volitional mode biases tended to vary from individual to individual. However, it was possible to estimate the mean contributions, averaged for the subjects of aspect I of the study, of the modal and volitional pressures to the final beliefs held by these subjects. Thus, for the change in a belief following a counter-communication (i.e. for accommodative reappraisal alone), the mean contribution of modal mode pressures was estimated to be 13.2% of that arising from the recognition of the discrepancy between the initial belief and the evidence cited in the counter-communication (i.e. effective discrepancy dissonance), and the mean contribution of volitional mode pressures was estimated to be 30.5% of that arising from effective discrepancy dissonance.

(8) Taking into account the additional biases that operated during the initial assimilation of the beliefs (i.e. for the initial

assimilative reappraisal followed by the subsequent accommodative reappraisal) the mean comparative effects were estimated to be 19.8% of that due to effective discrepancy dissonance for the modal mode and 43.9% of that due to effective discrepancy dissonance for the volitional mode.

(9)

Thus, the mean maximum biasing effect for those subjects for whom both the modal and volitional pressures were mutually supportive in relation to the reassessment of a relevant belief, was 63.7% of the contribution to change due to effective discrepancy dissonance aroused by the appropriate counter-communication. This biasing effect operated so as to constrain the established belief against change, when acting in opposition to the discrepancy dissonance (thus resulting in considerable under-accommodation to the discrepant opinion), or to predispose the established belief to change, when acting in favour of the discrepancy dissonance (thus resulting in considerable over-accommodation to the discrepant information). In other words, certain beliefs that were ultimately held by certain subjects showed considerable bias in one or the other direction - pro or con the latest evidence available to them - which was evidence of the considerable influence of emotive biases in the processing of items of information or opinion. Though individual variation was considerable, the volitional mode bias was found to be, on

the average, more than twice as great as the modal mode bias. This empirical finding indicated that the "future orientation" of the individual (i.e. the volitional aspect of the individual's identity) was, in general, more than twice as powerful as the "past historic orientation" (i.e. the modal aspect) in producing emotional bias into the processing of the distal stimuli*. (This finding is, of course, limited to the context of this study.)

Estimates of the magnitudes of modal and volitional dissonances

(10) Estimates of the magnitudes of modal and volitional dissonance, both after the assimilation of the initial "evidence" and after the subsequent accommodation of the established beliefs to the later discrepant "evidence", were calculated for each individual from the data obtained from him at the two intervals during the course of the study. The majority of the subjects in aspect I of the study were shown to have decreased dissonance in both the modal and volitional modes, in accordance with the observed biases in processing the discrepant information.

(11) Whereas most subjects in aspect II of the study also decreased dissonance in the volitional mode, many (in groups 1', 2' and 3') suffered an increase in modal dissonance as a consequence of the

* Though the opposite was true for a small minority of subjects.

changes in beliefs arising from the presence of discrepancy dissonance pressures. These subjects were especially vulnerable to increases in modal dissonance because of the strong constraints imposed against their re-evaluation of the one belief (which was different for each of the groups 1', 2' and 3') that was responsible for the initial binding of modal dissonance. The imposition of the strong constraints was effectively achieved by the use of an appropriate communication which confirmed, for each of the three groups, the relevant established belief. Aspect II of the study therefore demonstrated the fundamental deficiency of the balance model in giving a primary status to
(11) a self evident notion of "consistency", since, according to the balance model, modal dissonance (a measure of "imbalance") should have become decreased, if not by "one-sign-change paths" (which were blocked in groups 1', 2' and 3') then by "two-sign-change paths". "Two-sign-change paths" were not in evidence in the vast majority of cases - instead, the majority of subjects in groups 1', 2' and 3' suffered increases in modal dissonance.

Consequences of increases in volitional dissonance

(12) Though, in the majority of subjects (179 instances out of 209), dissonance in the volitional mode became decreased following the reception of the counter-communications, this was not the case for a certain minority of subjects (the remaining 30 instances).

However, the volitional mode did ultimately dominate for these subjects, in the sense that they indicated a much greater likelihood to take drastic behavioural action to eliminate the increased volitional dissonance. This manifested itself in these subjects as a very ready inclination to remove the source or agent that contributed to the continued presence of volitional dissonance, by comparison with the majority of subjects for whom volitional dissonance had become decreased. On the other hand, increases in modal dissonance did not result in any such inclination towards more drastic behavioural action.

Distortion during appraisal

(13) The general ambiguity of the initial situation allowed many instances of a distortion of the "evidence" presented within its context. These "errors" in appraisal accounted for 75 out of a total of 284 subjects (i.e. 26%). It was demonstrated that these distortions were of the type to be expected as a consequence of the minimization of dissonance through the operation, during appraisal, of processes tending to maximize psychological efficiency. Thus, only seven instances of distortion were not accounted for by the complete non-arousal of dissonance in either the modal or the volitional mode. In line with the general findings of this study, the volitional mode bias was again predominant in most subjects compared with that of the modal mode.

Attribution of indirect effects in the volitional mode of appraisal

(14)

One of the features of the analysis of the appraisal process operating in the volitional mode was the consideration of the appraisal of the possible indirect effects that might result from an action initiated by an agent. The two types of indirect effects considered were (a) the face-value indirect effect, i.e. Fenwick, in his action of displaying modern art in the store, which type of display is known by the subject to have an adverse effect on sales, is appraised as having an injurious indirect effect on sales; and (b) the manipulative indirect effect, i.e. Fenwick, in his action of displaying modern art in the store, is appraised as able to manipulate the type of display in order to fulfil his own ends, namely, to promote sales. In the limited context of the experimental situation, the analysis of the conditions under which either one or both of these possible effects become attributed to the agent, was indirectly substantiated.

A paradoxical conclusion

It has been noted that the reception of the three counter-communications in aspect I of the study conformed to the primary prediction of the balance model, as was the case in the original study by Rosenberg and Abelson. In other words, the attribution of ratings of accuracy or evaluations to these communications was made in accordance with "balance" or modal mode pressures. However, the data

relating to the biases involved in the processing of information (i.e. distortion during appraisal, biases in assimilating the "evidence" and biases in subsequently accommodating to new discrepant "evidence") indicated that they were due to the presence of both modal and volitional pressures, and that the volitional mode pressures were, in general, more than twice as powerful as those in the modal mode. In addition, it has been noted that, even when other pressures were dominant over the volitional mode pressures to the extent that volitional dissonance became increased as a consequence, the operation of the volitional mode ultimately predominated to the extent that drastic behavioural action was endorsed to eliminate the increased volitional dissonance.

The paradox is, therefore, that the evaluation of the communications proceeds in the modal mode of appraisal, whilst the information processing is subject to both the modal and volitional modes, with the latter predominating. This paradox may not appear quite so strange if it is considered that the volitional mode of appraisal operates upon the outcome of appraisal in the modal mode (which is, it may be remembered, the theoretical approach adopted in Chapter 11), with the consequence that the immediate evaluation of the communications occurs in the modal mode, whilst the more prolonged processes of the assimilation of the evidence and of the subsequent accommodation of established beliefs to new evidence are attenuated by the dominant volitional mode.

CHAPTER 14: CONCLUSION

It has been noted in Chapter 1 that the status of the concept "attitude" continues to be the subject of much debate. The view has been taken that an investigation of the psychological processes associated with attitude dynamics would be more likely to lead to a clarification of the conceptual areas embracing the concept.

In the first place, one influential theory about such processes, Festinger's theory of cognitive dissonance, has been exposed to a critical evaluation and certain deficiencies have been noted with respect to the ambiguity of its fundamental definitions and the inadequacy of the "consistency-homeostasis" postulate as an explanation of dissonance processes. The latter inadequacy has been seen to be shared by other "consistency" theories of attitude dynamics.

A radically different approach, which has focussed on the processes of appraisal and reappraisal, has been proposed in order to explicate the issues involved. This approach has required the conceptualization of the psychological matrix within which the appraisal process operates.

Much of the burden of the theoretical chapters has been devoted to the conceptualization of this matrix, which has been called the "identity structure", in terms of three postulated component systems and their interrelationships. These component systems have been described as: a system of evaluated entities and actions, regarded as a function of the individual's experiences; a system of bipolar constructs (as defined by Kelly, 1955), regarded as a function of the

individual's categorizing processes in conjunction with his experiences; and a system of affective states, regarded as a function of the individual's self-referring emotional experiences.

The totality of the psychological matrix, that is, the individual's identity, has been considered to exist in two interrelated aspects, one of which has been defined as the modal self aspect, consisting of the values, beliefs and past experiences of the individual, and the other defined as the volitional self aspect, consisting of the identifications and intentions of the individual. These two aspects have provided a conceptual distinction of the dichotomy between the essential and continuing sameness of the individual's identity on the one hand, and the future orientation of his identity on the other.

It has been postulated that certain processes operate to conserve the organization of the identity structure and, at the same time, to provide for its continued modification and elaboration during transactions with the environment. Basic features of these postulated processes have been the hypotheses concerning the continued mobilization of energy for the purposes of conserving the organization of the identity structure, even under optimal conditions, and the additional mobilization of energy to counter disintegrative tendencies when a portion of the identity structure becomes the locus of a disturbance. The ratio of optimal energy mobilization to the total ongoing energy mobilizationhas been defined as the psychological efficiency with respect to the portion of the identity structure under consideration.

Two fundamental hypotheses have been presented which state that:

(i) in general, processes operate tending to maximize psychological efficiency,

(ii) given the existence of alternatives confronting the individual, a decision process will operate at maximal psychological efficiency.

Three modes of appraisal have been distinguished, one of which corresponds to appraisal in relation to the modal self aspect of identity and a second to appraisal in relation to the volitional self aspect. Thus, the modal mode is considered to be appraisal with respect to the status quo configuration of experiential evaluations, and the volitional mode to be appraisal with respect to the future orientation of current intentions and identifications. Both the modal and volitional modes have been identified as operating in relation to the system of affective states. The third mode, the comparison mode, is regarded as being essentially concerned with the recognition of discrepancies between beliefs and expectations and corresponding actualities, or between the individual's opinions and those advocated by another.

The transactional nature of the appraisal process has been depicted as the projection of evaluative characteristics from the individual's identity structure on to the elements of the distal stimuli that are delineated against his construct system. The

conditions for dissonance arousal in each of the three modes of appraisal have been stated. The arousal of dissonance and the continued existence of dissonance have been related to a state of decreased psychological efficiency with respect to the affected portion of the identity structure.

The process of assimilation of new elements into the identity structure, as further elaboration and differentiation of its organization, has been defined as assimilative reappraisal. The process of accommodation of the evaluations of existing elements within the identity structure to subsequently appraised evaluations, has been defined as accommodative reappraisal. Ambivalences that continue to exist on the assimilation of dissonant elements into either the modal or volitional aspects of the identity structure, have been defined as bound dissonances. Much of the thesis has been devoted to an examination of the biasing effects on subsequent appraisals and reappraisals that arise as a consequence of the existence of bound dissonances.

The experimental evaluation of certain aspects of the theoretical postulates about dissonance processes presented in this thesis, has been made by way of two experiments. One has been directed to testing the theory of the decision process and post-decision reappraisal, and the other to testing the theory of the three modes of appraisal and their interaction. The evidence obtained from the experimental evaluation has been in accordance with the theoretical postulates

briefly reviewed above. In particular, the evidence has indicated that:

1) there exist three distinct modes of appraisal (defined as the comparison mode, the modal mode, and the volitional mode);
2) dissonance may become aroused during the operation of the appraisal process in each of these modes (defined as discrepancy dissonance in the comparison mode, modal dissonance in the modal mode, and volitional dissonance in the volitional mode);
3) when they are in simultaneous operation, interaction occurs between the different modes of appraisal;
4) such interaction occurs in accordance with the fundamental hypothesis that processes tend to maximize psychological efficiency in each mode*;
5) following the appraisal of available courses of action**, decisions are made in accordance with a principle of least dissonance, which is a principle derived from the fundamental hypothesis that the decision process operates at maximal psychological efficiency;
6) following a decision, psychological efficiency tends to become increased in accordance with the hypothesis that processes operate tending to maximize psychological efficiency - it has been seen that the maximization of psychological efficiency may result in dissonance reduction, but can also, on occasion, result in an increase in post-decision dissonance.

* The operation of these processes may result in dissonance reduction in each mode, except for the possibility that when the pressures arising from different modes are mutually antagonistic, dissonance may be reduced in one mode at the expense of an increase in another mode.
** Such appraisal will be in the volitional mode, hence (contd.)

The experimental evaluation was dependent on the ability to delineate, for each individual independently, the several component dissonant and consonant elements that resulted from his appraisal of the experimental situation. Such delineation of elements and assessment as to their dissonant or consonant nature was possible as a consequence of the new definitions which have been given for dissonant and consonant elements in each of the three modes of appraisal. Thus, the criticisms that have been made of Festinger's formulation, that it could in practice handle only two elements and that the specification of the dissonant or consonant nature of the elements depended on the sharing of a common culture by the experimenter and his subjects, have been overcome by these new definitions. In addition, it has been possible to derive quantitative estimates of dissonance by way of the hypothesis that relates the magnitude of dissonance aroused to the number and strength of dissonant and consonant elements, to the ego-involvement in their referent and to the perceived relevance of that referent in the context of the situation.

During the course of the exposition of the present formulation, it has been possible to integrate into it certain other theoretical approaches to attitude dynamics. Thus, certain features of the "social judgment" approach of Sherif et al have been incorporated

* (contd.)
any dissonance that becomes aroused would be volitional dissonance.

into the exposition of the degree of discrepancy dissonance aroused during appraisal in the comparison mode. The logical relationship between the "balance" formulation of Rosenberg and Abelson and modal dissonance has been demonstrated. And algebraic expressions have been derived for the attitude adjustment following newly perceived relationships between evaluated entities that bear a marked resemblance to those derived by Osgood and Tannenbaum from their "congruity principle".

In conclusion, it may be said that the conceptual arena associated with the concept "attitude" is considerable and is characterized by a number of psychological processes. It is held that the appraisal process- conceptually differentiated into three modes of operation, the processes of assimilative and accommodative reappraisal, and the decision process are inseparably linked with that arena. Thus, instead of attempting to define "attitude", which effort is surely based on the misconception that "attitude" can be treated as a unitary concept, it would appear to be more profitable for an understanding of attitude dynamics to investigate further these processes in relation to the individual's affective evaluations, his opinions, his beliefs and expectations, and his intentions and identifications. The dependence of the magnitude of dissonance on the factors of ego-involvement and perceived relevance, and the attenuation of these factors as a result of some of the processes described in this thesis, illustrates that a concept of attitude

conceived in terms of a simple evaluative response or a predisposition to respond is an inadequate tool for analysis. Further, it is evident from the second experiment cited in this thesis, that an agent which had been favourably evaluated by an individual will suffer adverse treatment by that individual if, as a result of the agent's influence, the individual's intentions are compromised (i.e. following the arousal of volitional dissonance). The ongoing favourable evaluative response to the agent would be a poor indicator of the individual's reaction in this situation.

APPENDIX A: THE DECISION EXPERIMENT BOOKLET

(see Chapter 12)

GRADUATE SEMINARS SURVEY

SECTION A

The Social Sciences are concerned with theory and the development of appropriate models, including mathematical models. For this reason graduate seminars aim to give students an awareness of theory and an understanding of particular fields.

During the past year there has been some discussion about the teaching of theory. It seemed desirable therefore to find out the views of those most concerned with this, namely the graduates.

SURNAME: _____ FIRST NAME: _____

NATIONALITY: _____

LANGUAGE

Mother tongue: _____

Where mother tongue is not English:

Do you understand English

very well? _____ } Put X for
well? _____ } whichever
with some difficulty? _____ } describes you.

DEGREE COURSE: _____ SUBJECT: _____

THESIS

If you have already decided on a thesis give the topic:

_____

QUESTIONNAIRE SCALES

A novel kind of scale will be found in this questionnaire. It is being used to obtain finer discrimination in answers than is usual. A specimen example is given below followed by two practice examples.

Specimen example:

Townplanners for the Central London area are interested to know how important you consider each of the following to be:

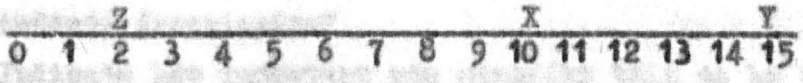
(X) greater carparking facilities;

(Y) more Underground line;

(Z) renovation of historic buildings.

(Indicate how important you consider each of these to be by placing X, Y and Z over appropriate numbers on the scale.)

unimportant very important



In this example, 'more Underground lines' is considered to be very important, 'greater carparking facilities' rather important, and 'renovation of historic buildings' relatively unimportant.

Practice examples:

Please complete these two examples:

(1) How important for you are the following three facets of University life?

(N) To gain a professional qualification;

(O) Discussion with people holding different views;

(P) To develop your capacity for critical thinking.

(Indicate how important you consider each of these to be by placing N, O and P over appropriate numbers on the scale.)

unimportant very important

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

For the second example you are asked to assess the importance of one issue only.

(2) How important for you is active involvement in the Research Students Association?

(Indicate how important you consider this to be by placing an X over the appropriate number.)

unimportant very important

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

GRADUATE SEMINARS QUESTIONNAIRE

If part of your seminar course is concerned with particular social or economic phenomena which interest you and about which there exist three contending theories, how desirable for you would each of the following be?

(A) To become superficially acquainted with all three theories so that you would know something of the overall differences in formulation;

(B) To understand one of the theories in depth so that you would appreciate its special features;

(C) To understand all three theories in depth so that you would appreciate the special features of each.

(Indicate how desirable you consider each of these by placing A, B and C over appropriate numbers on the scale.)

not desirable very desirable

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

In general, given that you find a particular topic interesting, how important do you feel it is:

(1) to gain a deep understanding of theory rather than a superficial acquaintance with it?

unimportant very important

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

(2) (when three contending theories exist)

to know something about all three theories rather than only one?

unimportant very important

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

(3) (when a certain time span has been allotted for the topic)

to keep within the allotted time rather than spending twice that amount at the expense of other topics?

unimportant very important

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

(4) to avoid theory which makes considerable demands on your mathematical ability?

unimportant very important

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

GRADUATE SEMINARS SURVEY

SECTION B

When three contending theories exist, methods of presenting theory in seminars allow students the following three possibilities:

(1) to become superficially acquainted with all three theories in the allotted time;

(2) to get a deep understanding in the allotted time of only one theory, this making considerable demands on your mathematical ability;

(3) to obtain a deep understanding of all three theories, this making considerable demands on your mathematical ability, and taking twice the allotted time at the expense of other topics.

Which of these three possibilities would you choose?

Bearing in mind your choice on page 1 please complete again the following questions.

If part of your seminar course is concerned with particular social or economic phenomena which interest you and about which there exist three contending theories, how desirable for you would each of the following be?

(D) To understand one of the theories in depth so that you would appreciate its special features;

(E) To become superficially acquainted with all three theories so that you would know something of the overall differences in formulation;

(F) To understand all three theories in depth so that you would appreciate the special features of each.

(Indicate how desirable you consider each of these by placing D, E and F over appropriate numbers on the scale)

not desirable very desirable

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Still bearing in mind your choice on page 1 please answer <u>again</u> these questions.

In general, given that you find a particular topic interesting, how important do you feel it is:

(5) (when a certain time span has been allotted for the topic) to keep within the allotted time rather than spending twice that amount at the expense of other topics?

unimportant very important

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

(6) to gain a deep understanding of theory rather than a superficial acquaintance with it?

unimportant very important

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

(7) to avoid theory which makes considerable demands on your mathematical ability?

unimportant very important

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

(8) (when three contending theories exist) to know something about all three theories rather than only one?

unimportant very important

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Thank you for your co-operation

APPENDIX B: THE ROLE-PLAYING EXPERIMENT BOOKLET

(interacting modes of appraisal - see Chapter 13)

The following is an extract from the letter sent to the participants in this study, most of whom were from organizations that had no connection with The London School of Economics.

"We have an unusual request and we think you can help us. Our research at the London School of Economics has led us to investigate a situation familiar to people in commerce. The object of the research is to find out how people think they would react if they had to imagine themselves in the place of another person and were confronted with the situation facing him. As the situation (which is described at the beginning of the enclosed questionnaire) is a commercial one, we felt that it would be very desirable to approach people employed in commerce.

We wish to emphasise, however, that the research has no direct connection with any company, organisation or commercial interest. It is being carried out by a research worker at the London School of Economics. The completed questionnaire will be treated as confidential.

Each subject received a booklet of the kind that follows, but one in which the specifications of "THE PERSON" on page 1 and the reports on page 5 were appropriate to the experimental group of which he was a member. The specimen booklet presented here is one in which the specifications were appropriate to membership of group 1 subgroup A.

The appropriate booklets for the remaining experimental groups and subgroups were the same as the specimen, but for the appropriate substitutions which are indicated immediately following the specimen.

INSTRUCTIONS

The questionnaire will take about half an hour to complete. Answering it requires concentration so please be sure there are no distractions. Fill out the personal details requested then turn to Page 1. Page 1 is very important and you should study it carefully before turning to the next page. If necessary, you may return to Page 1 in order to refresh your memory.

Since we are interested in your immediate reactions please

DO NOT READ THROUGH THE REST OF THE QUESTIONNAIRE UNTIL YOU HAVE ANSWERED EACH QUESTION IN TURN

and

DO NOT DISCUSS IT WITH ANYONE ELSE

. . . . . .

PERSONAL DETAILS

Sex:	Male.....	Please tick where appropriate
	Female.....	
Age:	Under 20	
	20 to under 30.....	
	30 to under 40.....	
	40 to under 50.....	
	50 and over.....	

Occupation:.....

NB

THE ABOVE INFORMATION WILL BE TREATED AS CONFIDENTIAL AND WILL NOT BE DISCLOSED TO ANYONE.

We would like you to try the best you can to act out the role of another person and deal with the problems that he might have to face. You will be told about some of this person's basic values and the kind of situation confronting him. You are to try and be this person and to report on how you feel in his position.

THE PERSON:

"You are a department store owner.
You are much concerned with achieving the highest possible sales volume and you take a strong interest in sales promotion.
You have a very high opinion of your Rug Department sales manager, Fenwick, whom you like very much.
You also have a very strong liking for modern art."

THE SITUATION:

"On your desk is a report by a leading market research organization which finds that modern art displays are found distracting by customers and lead to loss in sales.
Today Fenwick told you that he intended to mount a display of modern art and had been working on the details during the week.
Yesterday an outside firm of auditors produced figures showing that Fenwick had increased sales substantially in the Rug Department since the tenure of his position one year ago."

Study carefully the person and the situation above. In order to find out whether you have understood the situation and the values you hold as storeowner, a few straightforward questions will be asked of you.

You have been given a brief description of your role as department store owner. From the description it will be a simple matter to say how you, as the store owner, feel about Sales, Fenwick, and Modern Art.

What are your feelings towards Fenwick? Are they positive or negative? That is, do you like or dislike him? Rate how much you like or dislike him by putting a cross at the appropriate value on the scale below.

very negative (dislike) — very positive (like)

10 8 6 4 2 0 2 4 6 8 10

Now we come to your feelings about Modern Art. Are they positive or negative? Do you like or dislike Modern Art?

very negative (dislike) — very positive (like)

10 8 6 4 2 0 2 4 6 8 10

With regard to Sales, do you like or dislike promoting Sales? How positive or negative are your feelings toward Sales?

very negative (dislike) — very positive (like)

10 8 6 4 2 0 2 4 6 8 10

Irrespective of how much you like or dislike Fenwick, Modern Art, and promoting Sales, how strongly do you, as store owner, feel about them in everyday life? How much do they normally concern you? How important are they to you in general? Using the initials S for Sales, F for Fenwick, and M for Modern Art you can rate how important they are to you in general, all on the same scale below.

unimportant ..... very important

0 1 2 3 4 5 6 7 8 9 10

(If you think they are of equal importance you may put one initial over another)

Without letting the values you hold as store owner prejudice your appraisal of the situation what, from the evidence you have, are the relationships between the following?

Fenwick and Sales

Has Fenwick increased or decreased Sales? Is his relationship to Sales a positive or negative one?

very negative (Fenwick has decreased Sales) ..... very positive (Fenwick has increased Sales)

10 8 6 4 2 0 2 4 6 8 10

Fenwick and Modern Art

Does or does not Fenwick intend to mount a Modern Art display? Is his relationship to Modern Art positive or negative?

very negative (Fenwick does not intend to mount the display) ..... very positive (Fenwick does intend to mount the display)

10 8 6 4 2 0 2 4 6 8 10

Modern Art and Sales

Do displays of Modern Art increase or decrease Sales? Does Modern Art have a positive or negative relationship to Sales?

very negative (Modern Art decreases Sales) — very positive (Modern Art increases Sales)

10 8 6 4 2 0 2 4 6 8 10

Now, can you state how relevant you feel Modern Art is to the situation confronting you at present? How relevant is Sales? How relevant is Fenwick? You may indicate the relevancy of each to the present situation on the scale below, using their respective initials (M for Modern Art, S for Sales, and F for Fenwick).

irrelevant — very relevant

0 1 2 3 4 5 6 7 8 9 10

The following day you receive these reports:

1. "A store officer has just come back from completing some investigations into market trends. General market trends in rugs appear to be booming. Compared with these, Fenwick's performance on sales seems rather poor."

2. "A second market research organisation in a report you are reading challenges data purporting to show that sales decline when modern art is displayed in showrooms. It contends that such displays stimulate attention, promote interest, and help sales."

3. "Another store officer walks in and during a chat says that Fenwick is having second thoughts about mounting the modern art display."

How accurate do you feel each of these reports is? Rate by placing the corresponding report numbers on the scale below:

Inaccurate . . . . . Completely accurate

0 1 2 3 4 5 6 7 8 9 10

These reports will probably have led you to reappraise the situation and your feelings about it. This being so, we want to know what your present feelings are.

What are your feelings toward Fenwick now? Are they positive or negative? How much do you like or dislike him?

very negative (dislike) — very positive (like)

10 8 6 4 2 0 2 4 6 8 10

How positive or negative are your feelings about Modern Art now? How much do you like or dislike Modern Art?

very negative (dislike) — very positive (like)

10 8 6 4 2 0 2 4 6 8 10

With regard to Sales, how positive or negative are your feelings? Do you like or dislike promoting Sales?

very negative (dislike) — very positive (like)

10 8 6 4 2 0 2 4 6 8 10

Irrespective of how much you like or dislike Fenwick, Modern Art, and promoting Sales, have the strengths of your feelings about them changed? How important are they to you now? Using the initials S, F and M for Sales, Fenwick and Modern Art, you can rate how important each is to you on the scale below.

unimportant very important

0 1 2 3 4 5 6 7 8 9 10

(If you think they are of equal importance you may put one initial over another)

What would you say now about the relationships between the following?

Fenwick and Sales

Has Fenwick increased or decreased Sales? Is his relationship to Sales a positive or a negative one?

very negative (Fenwick has decreased Sales) very positive (Fenwick has increased Sales)

10 8 6 4 2 0 2 4 6 8 10

Fenwick and Modern Art

Does or does not Fenwick intend to mount a Modern Art display? Is his relationship to Modern Art positive or negative?

very negative (Fenwick does not intend to mount the display) very positive (Fenwick does intend to mount the display)

10 8 6 4 2 0 2 4 6 8 10

Modern Art and Sales

Do displays of Modern Art increase or decrease Sales? Does Modern Art have a positive or a negative relationship to Sales?

very negative (Modern Art decreases Sales) — very positive (Modern Art increases Sales)

10 8 6 4 2 0 2 4 6 8 10

How relevant do you feel Modern Art is to the situation as it confronts you now? How relevant is Sales? How relevant is Fenwick? Indicate the relevancy of Sales, Fenwick and Modern Art to the present situation by using the appropriate initials (S, F, and M) on the scale below.

irrelevant — very relevant

0 1 2 3 4 5 6 7 8 9 10

Finally, what action would you take ? (tick where appropriate)

Would you keep Fenwick on? _____

or Would you dismiss him? _____

If you decide to keep him on:

Would you retain him in his present post? _____

or Would you transfer him to another post? ** _____

** **Have you any idea which post? Please state:**

.....

If you decide to retain him in his present post:

Would you encourage him to go ahead with the Modern Art display? _____

or Would you direct him not to mount the display? _____

You may have inadvertently read through the questionnaire before filling it out. Please indicate which applies to you:

Did you glance through the questionnaire before completing it?

YES .....

NO .....

The appropriate substitutions for the remaining subgroups of group 1 and for the other groups and subgroups were as follows:

Page 1, for THE PERSON:

group 1, subgroup B:

"You are a department store owner. You are much concerned with achieving the highest possible sales volume and you take a strong interest in sales promotion. You have a very high opinion of your Rug Department sales manager, Fenwick, whom you like very much. You rather like modern art though you have no strong feelings about it."

---

group 1, subgroup C:

"You are a department store owner. You are much concerned with achieving the highest possible sales volume and you take a strong interest in sales promotion. You rather like your Rug Department sales manager, Fenwick, though you have no strong feelings about him. You have a very strong liking for modern art."

---

group 2, subgroup D:

"You are a department store owner. You are much concerned with achieving the highest possible sales volume and you take a strong interest in sales promotion. You have a very high opinion of your Rug Department sales manager, Fenwick, whom you like very much. But you have a very strong dislike for modern art."

group 2, subgroup E:

"You are a department store owner. You are much concerned with achieving the highest possible sales volume and you take a very strong interest in sales promotion. You have a very high opinion of your Rug Department sales manager, Fenwick, whom you like very much. You rather dislike modern art though you have no strong feelings about it."

---

group 2, subgroup F:

"You are a department store owner. You are much concerned with achieving the highest possible sales volume and you take a very strong interest in sales promotion. You rather like your Rug Department sales manager, Fenwick, though you have no strong feelings about him. But you have a very strong dislike for modern art."

---

group 3, subgroup G:

"You are a department store owner. You are much concerned with achieving the highest possible salesvolume and you take a very strong interest in sales promotion. You have a very poor opinion of your Rug Department sales manager, Fenwick, whom you dislike intensely. You also have a very strong dislike for modern art."

---

group 3, subgroup H:

"You are a department store owner. You are much concerned with achieving the highest possible sales volume and you take a very strong interest in sales promotion. You have a very poor opinion of your

Rug Department sales manager, Fenwick, whom you dislike intensely. You rather dislike modern art though you have no strong feelings about it."

---

group 3, subgroup I:

"You are a department store owner. You are much concerned with achieving the highest possible sales volume and you take a very strong interest in sales promotion. You rather dislike your Rug Department sales manager, Fenwick, though you have no strong feelings about him. You have a very strong dislike of modern art."

---

group 4:

"You are a department store owner. You are much concerned with achieving the highest possible sales volume and you take a very strong interest in sales promotion. You have a very poor opinion of your Rug Department sales manager, Fenwick, whom you dislike intensely. But you have a very strong liking for modern art."

On Page 5, the following confirmatory report replaced that correspondingly numbered contradictory report: group 1', subgroups A', B' and C':

2. "A second market research organisation has confirmed that modern art displays in department stores are regarded as "gimmicky" and give offence to the majority of long-standing regular customers who may withdraw their custom in protest. During the duration of such displays the fall in sales has been found to be substantial."

---

group 2', subgroups D', E' and F':

3. "Another store officer walks in and during a chat confirms that Fenwick is going ahead with the modern art display which he will mount in a few weeks' time."

---

group 3', subgroups G', H' and I',
and group 4':

1. "A store officer has just come back from completing some investigations into market trends. The market in rugs is very depressed. Compared with this general state of affairs Fenwick's performance in sales is exceptionally good."

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