CONTEXT EFFECTS IN SOCIAL SURVEYS:
A Study of Question Order Effects

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In memory of my father

Abstract

This research investigates context effects in social surveys. Context effects, the ways in which previous questions affect responses to later questions, can occur when questions deal with aspects of closely related issues. Such effects have been explained by reference to social cognition, social judgement and cognitive consistency theories. Following a review of the literature, three 'split-ballot' experiments, exploring how increasing the salience of particular topics affects responses to related questions, were conducted in a multi-wave national panel survey in Iceland. The first experiment investigates the effects of knowledge questions on expressed political interest. Respondents who were asked the knowledge questions first reported less interest in politics than did other respondents. Contrary to self-perception theory, it is argued that the knowledge questions serve as a frame of reference for the interpretation of the vague phrase, 'to follow what is going on in government and public affairs'. In the second experiment the accessibility of particular topics was increased by providing specific or general examples in the preamble to a question asking about the most important problems facing the nation. The results lend support to the principle of cognitive accessibility, which suggests that respondents do not systematically retrieve all relevant information stored in memory but base their answers on the most accessible information. It is argued that the specific examples widen the question's frame of reference and thus change its meaning. In the third experiment general attitude questions about abortion and nuclear weapons were placed either in pro- or anti-contexts. Respondents who agreed with the context items showed an assimilation effect, whereas those who disagreed showed a contrast effect. It is concluded that due to the inherent instability and complexity of attitudes, responses to attitude questions are likely to be influenced by the immediate context in which they are asked.

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Introduction

Theoretical background

This research investigates context effects in social surveys. Context effects, the ways in which previous questions affect responses to later questions, can occur when two or more questions deal with aspects of the same or closely related issues. My fascination for 'scientific' methodology guided my decision to choose this area of research. It was my sincere belief that in order to study psychology and gain reliable knowledge about human behaviour, attitudes or public opinion, rigorous methods were needed. It seems intuitively straightforward to conclude that there can be no better way to study public opinion or a nation's attitudes and behaviours than to take a representative sample and ask people standardized questions. Such a systematic method allows one to make generalizations about the population with known confidence limits. Everything appears to be under full control, all respondents are exposed to the same stimuli. So why should different responses reflect anything other than differences in opinion? With an appropriate choice of response alternatives, there are a number of statistical methods that allow one to explore the relations between different questions. We can test whether significant relationships exist between independent and dependent variables, although we have to acknowledge that inferences about causality are problematic on the basis of correlational data. So, if the method is so perfect, why do we repeatedly observe substantial 'noise in attitude measurement' (Converse, 1970), why are people's responses so unreliable? Is there something that we are overlooking in our reliance on the standardized survey interview, even when we are following all the rules? Various artifacts have been shown to be operating in experimental conditions, effects caused by subjects' awareness of being the object of observation (Orne, 1962, 1969;

Rosenthal, 1966). Is the 'noise' caused by some such variables operating in the survey interview? Is it possible that we have neglected the simple fact that not only do researchers think, but so do their respondents? Or has the observed unreliablilty something to do with the nature of attitudes? These questions, along with more practical considerations guided the research described in this thesis. Despite the fact that English-speaking nations have been using sample surveys to gather data about the general public's opinions since the middle of the twentieth century, the method did not gain popularity in Iceland until the mid-1980s and very few people had specialized in survey methodolgy. Hence, this research provided the opportunity to combine the best of both worlds, i.e., to satiate my curiosity and to give me practical experience for future research in social surveys.

Suggestions that asking people questions in a survey interview, can lead to a change both in people's attitudes and behaviours guided the design of the research although no attempt was made to observe people's behaviours (cf. Bishop, 1987). My choice of questions was influenced not only by the context effects literature but also by a colleagues disciplinary interest in politics. Hence, I selected questions that had some bearing on attitudes towards politics or political behaviour. Bearing in mind the idea of reactivity, i.e., that simply asking questions may lead to a change in people's attitudes an attempt was made to examine how long lasting context effects are by interviewing the same sample on three different occasions. Are context effects temporary or will the context in the first interview possibly influence responses in interviews taken a month later?

Some of the questions that I chose can hardly be argued to be attitude questions – such as a question about people's level of political interest or people's opinions about the most important issues facing the nation. As survey researchers often use the terms belief, attitude, and opinion interchangeably, the distinctions made in social psychology are of little relevance here.

The questions that shaped the orientations and conduct of this project reflected the above concerns. My main foci in this respect were:

- Do preceding questions affect responses to subsequent questions in a questionnaire in a systematic fashion?
- Do we change people's attitudes and self-perceptions by asking them questions?
- If asking questions has the effect of changing people's attitudes, how long-lasting are these changes?
- Are context effects artifactual or can they be explained with reference to the social nature of the interview situation?
- Can theories about the nature of attitudes explain some of the instability frequently observed in attitudinal responses?

Overview of the contents

The fact that this thesis describes research that was carried out in 1987, i.e., prior to some significant developments in the field, is discernible throughout. Relatively little had been written about context and order effects in surveys at that time but in the years to follow a substantial body of literature emerged (cf. Hippler and Schwarz, 1987; Schuman, 1992; Schwarz and Sudman, 1992; Schwarz and Sudman, 1995; Sudman, Bradburn and Schwarz, 1995; Tourangeau, Rips and Rasinski, 2000). I have here made an attempt to review relevant articles and books that have been published after completion of the data collection and sometimes I explain my findings with reference to ideas or theories that had not been put forth at the time of my designing the experiments described here. This is obvious in chapter 1, which describes context and order effects in surveys and how they have been explained throughout the years. Here the bulk of the explanatory models or theories described

were published after I designed my research and collected my data. A tentative categorization of attitudes on criteria of stability/instability is presented in chapter 1. This categoriztion did not inform the design of the study but may provide a basis for interpreting the results and be informative for further research. It is argued that responses to questions about attitudes that are inherently unstable or attitudes in which little emotion is invested are likely to be susceptible to the context within which they are asked. Furthermore, when the wording of questions is vague or unclear, respondents are likley to use adjacent questions to aid in the interpretation. Thus, it is important for questionnaire designers to ask clear and specific questions. The clearer the question, the less likely it is that respondents need to guess what the questioner means and the less likely they are to use previous questions to clarify the meaning.

Chapter 2 describes a pilot study that was designed to test various questions' susceptibility to context and order effects before a final decision was made about which questions to choose for the main study. Three experiments were counducted to test: 1) the effect of political knowledge questions on responses to a question on interest in government and public affairs; 2) the effect of giving examples (prompting) in the preamble to a question asking which issues of national importance respondents are most concerned about, and; 3) sequence effects, i.e., the positioning of the question about the most important issues was varied. The pilot experiment on sequence effects did not provide any convincing results, and being of another nature than the other two experiments (not related to the content of the previous questions or the target question itself) it was omitted from the main study.

Chapter 3 describes the sample of 1500 respondents, the methodology of the main study, i.e., the design of the three main experiments that were carried out in a three-wave panel survey, 'think-aloud' interviews or experiments and the methods used for the analyses. The experiments were, as in the pilot study, on: 1) the effect of

political knowledge questions on interest; 2) the effect of prompting when asking about the most important issues facing the nation; and finally, not tested in the pilot study; 3) the effect of asking respondents if they agreed or disagreed with pro- or anti-attitudinal assertions before asking about their attitude towards abortion and separately declaring the Nordic countries free of nuclear weapons. Think-aloud interviews (cf. Ericsson and Simon, 1980) were conducted in an attempt to identify the cognitive steps involved in answering survey questions and to gain insight into respondents' train of thought. Each of the three experiments is discussed in detail in the following chapters.

Chapter 4 discusses the results of the experiment on the effect of asking political knowledge questions immediately before asking about how often people follow what goes on in government and public affairs. It is concluded that that researcher interventions do not change people's self-perceptions of how frequently they think they follow what is going on in government and public affairs, but rather that such interventions provide the definition of what is meant by following government and public affairs 'most of the time'. That is, asking respondents about their 'political knowledge' in the same questionnaire as the question about how well they follow what is going on in government and public affairs implies that a person who follows what is going on 'most of the time' knows the answers to these and similar questions.

Chapter 5 describes the results of giving examples of general or specific issues in the preamble to a question about which issues of national importance respondents are most concerned about. The type of prompting was found to affect stability of responses in such a way that respondents prompted with the specific examples were found to be less likely to say that they had no opinion on which issues were the most important in Wave 1. They were not, however, more likely to 'borrow' the prompts than respondents who were given more general examples. In Wave 2, the main

difference between the two groups that were prompted was that the respondents prompted with the specific examples were much more likely to proclaim issues other than the examples given as the most important ones. This result, along with no differences found between the group prompted with the general examples and the group not prompted at all, strongly suggest that the specific examples had an effect on the interpretation of the question by widening its frame of reference.

Chapter 6 explains how the probability of respondents giving a favourable response to questions about attitudes towards abortion and declaring the Nordic countries free of nuclear weapons is increased or decreased by asking them if they agreed or disagreed with pro- or anti-attitudinal assertions. It was found that the context did not have a strong effect leading to respondents changing their attitudes from one side to the other. For both attitudes towards abortion and attitudes towards declaring the Nordic countries free of nuclear weapons did strength of the attitude affect reliability in such a way that respondents with very strong attitudes were less likely to change their response. This does not necessarily mean that respondents with 'not very strong' attitudes were more susceptible to the context, and, indeed the pattern of the changes among these respondents suggests that these changes may to a large extent be explained by random variations.

In the final chapter, chapter 7, I draw together the results of all three experiments. Although it is demonstrated that slight changes in context or wording can lead to substantial changes in respondents' interpretations and responses, I do not make an attempt to argue that any one wording is more valid than another. Rather, one has to pay attention to the context within which the question is asked. Or as Schwarz, Groves and Schuman (1998) claim: 'To interpret answers as representing in a literal way the inner dispositions of a population is to forget the extent to which survey responses are shaped by situational influences' (p. 158). In this chapter I offer a tentative classification of attitudes into four different levels of strength according to

expected stability and strength of attitude. According to this model one would expect attitudes at different levels to differ substantially, both in terms of reliability of attitudinal responses and in terms of susceptibility to context effects ***if*** context effects can be argued to be the result of a change in people's attitude. Hence, further research should focus on finding a way to separate random fluctuations due to low reliability from systematic changes in response to a particular context.

1

Context effects and attitude research

1.1 Origins of the sample survey

The sample survey is undoubtedly the most important method in monitoring public opinion (Phillips, 1971) and the National Research Council in the USA has claimed it to be 'the single most important information-gathering invention in the social sciences' (Adams, Smelser, & Treiman, 1982). Information gathered through survey interviews is widely used to plan and evaluate public policy, political and advertising campaigns, and to monitor various trends in society. Although the method as such, that of asking people questions, has been used for centuries for the collection of census data, it was not until the late 1930s and early 1940s that it took on the form we know today. For the most part, contemporary survey research is a product of American researchers in the twentieth century, although Karl Marx as early as 1880 mailed questionnaires to some 25,000 French workers to determine the extent of exploitation by employers (Babbie, 1973) and others had questioned respondents even earlier.

The development of the modern sample survey can be traced to three different streams of research (Rossi et al., 1983). The notion that social conditions could be measured and counted came from the early social surveys, which were mainly concerned with topics such as income, expenditure, patterns of working life, housing conditions and the like. The term 'survey' was used in the nineteenth and early twentieth centuries for any kind of 'first-hand investigation' of a community or group (*Encyclopaedia of the Social Sciences*, 1934; cited in Turner and Martin,

1984, p. 25). The most famous of the early surveys conducted in Great Britain were Mayhew's (1861-1862) *London Labour and the London Poor* and Booth's enquiry into the *Labour and Life of the People of London* (Booth, 1889-1902) (Moser and Kalton, 1971). The idea that people could be asked about their preferences and behaviour came early in the twentieth century from journalists who were engaged in predicting election results, using a method commonly known as the 'straw vote'. The *Encyclopaedia of the Social Sciences* (1934) defines the 'straw vote' as 'an unofficial canvass of an electorate to determine the division of popular sentiment on public issues or on candidates for governmental office' (Turner and Martin, 1984, p. 25). Although the journalists have been credited with having established the credibility of asking people about their opinions, some of the early social surveys were based on interviews with respondents who were themselves the focus of the research. However, the aim of the social surveys was to gather information about facts as opposed to opinion, which should be avoided. In the mid-nineteenth century, Mayhew's (1861-1862) research on poverty was based on interviews with the poor themselves. At that time the general belief was that it was not advisable to interview a respondent who was at the same time the subject of the inquiry and the informant. Hence the most disturbing of Mayhew's findings were rejected by *The Economist* as '"entirely false and irreconcilable with known, recorded and public facts" being based on the statements of the poor themselves whose "utter untrustworthiness" was well known (Thompson, 1973, p. 43)' (Marsh, 1982, p. 18). Booth, unlike Mayhew, did not rely on statements of the poor themselves, but instead relied on the expert testimony of school-board visitors, police, rate-collectors, sanitary inspectors and almoners. In addition, Booth obtained some qualitative impressions from visiting and observing his subjects. The rejection of the validity of interviewing the subjects of the research has undoubtedly led to disregard for the problems of wording questions, but once the tradition of direct interviewing was established, other important methodological breakthroughs were made possible. The use of standard question-wording and clear definitions of the concepts under investigation became

vital. One of Booth's successors, an industrialist named Rowntree, who conducted an inquiry into poverty in a 'typical' English town, can be regarded as one of the pioneers in this field. His work was in many respects more sophisticated than Booth's. He used interviewers and structured schedules to obtain the information he wanted directly from the families and placed greater emphasis on defining the concept of poverty. But, according to Marsh (1982, p. 25), it was Bowley who was responsible for 'the decisive methodological breakthroughs for the social survey as we know it today. He was responsible for a much more rigorous attitude towards the precise questions to be asked and the precise definitions of the unit under investigation' and his book *The Measurement of Social Phenomena* was published in 1915. However, the careful administration of standardized questionnaires is often traced to psychologists working in market research, using methods reminiscent of laboratory experiments. It is here, through the emphasis on standardization that the philosophy of behaviourism filters into survey methodology. As a result, a question in a questionnaire came to be treated as an isolated stimulus and the answer to the question as a response to that particular stimulus.

Both the early social surveys and the pre-election studies or the 'straw-vote' were based on the assumption that the bigger the sample, the more accurate the estimates obtained. One of the most famous straw votes was the *Literary Digest* poll. This poll had a fairly good record of forecasting American elections from 1916 to 1932, but failed disastrously to forecast correctly the 1936 presidential election. This failure has partly been attributed to the use of telephone directories and automobile registration lists as the sample frame. However, as pointed out by Parten (1950) and Turner and Martin (1984), the major problem was probably the reliance on volunteer responses. In the 1936 straw vote approximately 10 million ballots were sent out, but only about 2 million were returned. Several public opinion polling organizations with much smaller samples than the *Literary Digest* sample came much closer to predicting the actual election results. These samples were selected in such a way that

interviewers were each given an assigned quota specifying the number of men, women and persons of various economic levels to be interviewed (Mosteller et al., 1949). This provided the polls or the sample surveys with more respectability and emphasis was placed on further development of the sampling techniques. In England, some major advances had been made in surveying long before this, even before the First World War. The statistical ideas underlying random sampling had been known for a long time, the chi-square distribution had been discovered and Gossett (Student) and Fisher had discovered the distribution of a large number of sample statistics before the First World War, but Bowley was among the first to apply these ideas to social surveys. In 1913, Bowley who is more famous for his use of practical sampling schemes than for his emphasis on standardized questions and definitions, constructed complete lists of houses and drew a random sample from this. He also made an attempt to estimate the reliability of his research and calculated confidence intervals for his findings (Marsh, 1982). These factors, i.e., 'standardized' interviews and particular sampling methods, along with advances in multivariate data analysis have come to constitute the core of the sample survey method, making it a relatively systematic and standardized approach to the collection of information.

In the period between the World Wars the questionnaire had become the main measuring instrument and the focus of most studies was on collecting objective data only. The few studies that included questions on subjective issues, such as leisure, crime or religious activities, were quite sterile. In reaction to this, *The Mass-Observation Organisation* was founded in England in 1937. Volunteers were inspired by the programme to engage in writing diaries, poems, making films, or in observing by more or less unobtrusive methods the behaviour and speech of others. The Mass-Observation Organisation 'sought to supply accurate observations of everyday life and *real* (not just published) public moods, an anthropology and a mass documentation for a vast sector of normal life which did not, at that time, seem

to be adequately considered by the media, the arts, the social scientists or even by the political leaders' (Harrisson, 1978, p. 13; cited in Marsh, 1982, p. 32). Marsh (1982) argues that the Mass-Observations must be treated as an important precursor of the 'systematic social observation' survey method in the USA. During the Second World War government survey activity, both in the UK and the USA, increased markedly. Not only was it intended to examine the physical conditions of those who were expected to fight or work in the munitions industry, but also to survey the conditions of the civilian population in the UK, since it was feared that civilian morale might collapse under the pressure of aerial bombardment. Public opinion polling was first systematically used for policy purposes in the USA and in the UK after the Second World War began. Although the Wartime Social Survey, founded in England in 1940, was in the beginning run by academics, the active involvement of academics was much more marked in the USA. The most extensive use of the American data was probably through the Department of the Army's Information and Education Branch, headed by Samuel A. Stouffer (Rossi et al., 1983), but the major difference between the British and the American wartime surveys lay in the use that was made of the material. The British data were covered by the Official Secrets act and not released to anyone, whereas the American data were carefully analysed by academics and results published in *The American Soldier,* edited by Stouffer et al. (1949).

The employment of survey research methods started in academic institutions in the late 1930s with the work of Hadley Cantril at Princeton University and Paul F. Lazarsfeld at Newark University. This research began to flourish at the end of the Second World War, when social scientists who had been working for the American government came back into the universities. Along with the growing use of survey measurements within universities, emphasis was placed on establishing the validity and reliability of those measures. In 1945 the National Research Council and the Social Science Research Council in America established a 'Joint Committee on the

Measurement of Opinion, Attitudes and Consumer Wants', chaired by Samuel Stouffer. One of the most important problems identified by this committee was 'the validity of statements, opinion and information furnished by respondents' (Turner and Martin, 1984). The committee recommended that methodological research was concentrated on the improvement of sampling methods, questions concerning interviewer bias, concealment of opinions, selection and training of interviewers, and the relation between opinions and behaviours.

At that time (i.e., in the 1940s) it was already recognized by survey researchers that the overall response distribution to a question was in part a function of the question wording. Parten (1950) claims that poor question framing (the wording of the question) is one of the greatest sources of bias in surveys. That is, 'leading questions, those that state the issues in a biased manner, questions which assume knowledge on the part of the informant in fields where his knowledge is very slight or lacking entirely will lead to biased replies' (p. 407).

Most of the research on question wording has depended on the use of what are generally known as 'split-ballot' experiments, i.e., random subsamples are administered different forms of the questionnaire. Differences in responses that exceed sample fluctuations are then attributable to differences in questionnaire form. The most influential of the early reports on split-ballot wording experiments were Hadley Cantril's 'Gauging Public Opinion (1944)' and Stanley Payne's 'The Art of Asking Questions (1951)'. The fact that most of the early reports of experiments were restricted to univariate results led to the assumption that while marginals cannot be trusted, associations between variables were not subject to the same degree of instability (Stouffer and DeVinney, 1949). Furthermore, the issue of why effects occurred received little attention. By 1950 these experiments had largely disappeared from major surveys (Schuman and Presser, 1981). It was not until the late 1970s that the Institute for Social Research and National Opinion Research Centre in the USA

and Social and Community Planning Research in England began to give the matter some attention.

1.2 Context effects

> 'Students of public opinion research are fast coming to the realization that, relatively speaking, too much attention has been directed toward sample design, and too little toward question design' (Gallup, 1947, p. 385).

Despite the fact that the above quotation was written in 1947 it is as good a description of the 1970s and '80s as it was of the '40s. At that time it was already recognized that different questionnaire designs can lead to much greater variation in results than different sampling techniques. From the 1950s to the 1970s wording experiments came to be treated anecdotally and reported as illustrative warnings but they were not developed within a theoretical framework. Researchers concentrated more on the interviewer as a source of bias. In the 1970s, however, research on survey methodology shifted again from focusing on interviewer characteristics to formal characteristics of survey questions, partly as a result of the work of Orne (1962, 1969), Rosenthal (1966) and others (cf. Rosenthal and Rosnow, 1969) in psychology, who demonstrated experimenter and other effects on responses even in experimental studies previously believed robust. Another factor contributing to this revived interest in question wording and question form was the finding by Schuman and Duncan (1974) that the relationship between variables depended on the specific questions asked. Finally, since 1970 there has been a constant growth in the use of survey measurements of subjective phenomena[1] both in the USA and in Britain. Researchers interested in social trends have stressed the need for measuring such phenomena and authors of the British annual report *Social Trends* have argued that 'the way forward lies not in adding more measures of conventional hard statistics,

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[1] - 'subjective phenomena are those that, in principle, can be directly known, if at all, only by the persons themselves, although a person's intimate associates or a skilled observer may be able to surmise from indirect evidence what is going on "inside"' (Turner and Martin, 1984, p. 8)

but rather in supplementing the existing ones by adding ... a dimension of the satisfaction (happiness, contentment, psychological well-being, etc.) felt by those who constitute the community' (Abrams, 1973, p. 36; cited in Turner and Martin, 1984, p. 4). This growing use of survey measurements of subjective phenomena has again raised questions concerning the reliability and validity of such measurements.

Since the early 1970s numerous studies have demonstrated the vulnerability of survey questions to different contexts (see Sudman and Bradburn, 1974; Schuman and Presser, 1981; Hippler and Schwarz, 1987; Schuman, 1992; Schwarz and Sudman, 1995; Sudman, Bradburn and Schwarz, 1995 for reviews), although there has not been full agreement as to the pervasiveness of these effects. An apparent change can be seen over the last decades of the twentieth century in the importance social scientists give to such effects:

> 'What strikes me most as a social psychologist is the extent to which respondents apparently consider each question in and of itself without much attention to the earlier questions presented to them. The well managed survey interview is more like a slide show than a motion picture, with each item viewed quite apart from what preceded or is to succeed it.' (Schuman, 1974).

In 1992 the same author asks himself:

> 'How could I have been so clearly wrong in 1974, particularly when it seems intuitively obvious that context shapes all of our behavior?' (Schuman, 1992, p. 5).

In an attempt to estimate the pervasiveness of unanticipated context effects Smith (1992) conjectures that such effects may occur once in every 40-60 questions (p. 174)[2]. Turner and Krauss (1978) point out that context effects in surveys pose a particularly serious threat when surveys are used to derive 'indicators of the subjective state of the nation'. This type of research combines data from two or more

[2] To get to this estimate, Smith examined the 1988 GSS where a within-year split-ballot design was employed (see Smith, 1988).

surveys and usually interprets differences of 5-10% as indicators of 'true' changes in the population. In light of the research that has been done on context and order effects, there is little justification for interpreting such a small fluctuation as a 'true' change without some further support. Turner and Krauss argue that 'Inferences about changes in the state of the nation may be misleading if based upon indicator fluctuations of less than 15%.... Social indicators that are this insensitive would be of limited usefulness except for confirming obvious social changes after they have happened' (p. 469). Other reasons for systematic research on context effects are that attempts to generalize survey results must be suspect if responses are a function of the particular context - or if opinions of respondents can be altered simply by the mode of administration of the questionnaire (Billiet, Loosveldt, and Waterplas, 1989). Still further complications may arise if only certain groups are affected by the context. Many studies have found interactions between context and background variables such as education (Schuman and Presser, 1981) and marital status (McClendon and O'Brien, 1988). Finally, conclusions drawn from experimental research on question wording, or question form may be misleading if context effects caused by preceding questions intervene (Schuman and Presser, 1981).

Many researchers have used the terms 'context effects' and 'question order effects' more or less interchangeably, despite the fact that there are important differences between these terms. For example, we can have order effects that are not caused by 'tranfers of meaning' (Schuman and Presser, 1981, p. 23) but are due to the position of the question within the questionnaire (e.g., fatigue and rapport effects). It may be argued that despite the diversity of context and order effects there are four major types of effects (Smith, 1986). These are effects that are:

1) unrelated to the substance of the question itself, i.e., sequence effects such as fatigue and rapport effects (pure order effects)

2) unrelated to the substance of the previous questions but related to the content of the target question or its response scale (wording, etc.)
3) related to the content of the prior questions but not dependent on the way in which they were answered (unconditional context effects)
4) related to the content of preceding questions and to the way in which these questions were answered (conditional context effects)

Context effects are believed to occur when two or more questions deal with aspects of the same or closely related issues. Questions that require a general evaluation about a particular issue seem to be more sensitive to context effects than are more specific questions. This may well be because the general questions' frame of reference is open to many different interpretations and respondents may find it difficult to answer such questions without specifying them in some way (Schuman and Presser, 1981). The behaviour in question may also be ill-defined and open to interpretation. As Schwarz (1990) points out, this is particularly likely when researchers are interested in subjective experiences. For example, before a respondent can give an answer to how often (s)he has been recently 'really annoyed', (s)he must decide what the *researcher* means by 'really annoyed'. If the respondent cannot ask the interviewer to explain what (s)he means, or the interviewer cannot or must not define it, the respondent is likely to look for some relevant information in the questionnaire that can help her/him clarify the meaning. If the antecedent questions deal with some specific aspects of the same issue, they may provide respondents with the specification or clarification they need, and hence, lead to a context effect.

Smith (1992) identifies two major approaches that have been employed to try to explain why context effects occur:

1) Classification of context effects into different types according to their cause and effect.
2) Delimitation of the cognitive steps involved in answering a question and an explanation of how context effects may arise at each step.

Among those researchers who have attempted to classify order and context effects with respect to their cause (question type) and effect are Schuman and Presser (1981) and Bradburn (Bradburn and Mason, 1964; Bradburn, 1983). Their classification of effects can be seen in table 1.1.

Table 1.1 Classification of context and order effects

Schuman and Presser	Bradburn
I. Context effects (transfers of meaning)	
A. Part-part consistency	
1. Normative principles	
2. Logical inference	1. Consistency
B. Part-whole consistency	
C. Part-part contrast	
D. Part-whole contrast	
1. Subtraction	2. Redundancy
2. Simple contrast	
E. Salience	3. Salience
II. Sequence effects (mechanical types of artifacts)	
A. Rapport	4. Rapport
B. Fatigue	5. Fatigue
C. Initial frame of reference	

From: Smith (1992).

Sequence effects or the mechanical effects (effects II.A., II.B., II.C., 4 and 5 in table 1.1) do not depend on the context but are only dependent on the number of questions that appear before the target question in a questionnaire. Rapport effects are believed to occur when the respondent begins to feel more comfortable in her/his role as a

respondent, leading to more accurate or precise answers. Fatigue effects occur when the respondent begins to feel tired, leading to less thoughtful and less complete answers. The final type of sequence effects are the so-called initial frame of reference effects. That is, an item receives its highest or lowest score when presented first in a block of related items, and then serves as an anchor or a standard of comparison for the following items. Since these effects are believed to be independent of the content of previous questions, they will not be further discussed.

Context effects, i.e., effects that are due to transfers of meaning, either from previous questions or possibly an interaction between the content of the previous questions and the target question's response scale, are of two major types. Effects I.A., I.B., and 1. in table 1.1 are in the direction of consistency, also called assimilation (Schwarz and Bless, 1992), or carryover effects (Tourangeau & Rasinski, 1986; Tourangeau, 1987), making responses to the target question similar to or consistent with responses to antecedent questions. Effects I.C., I.D., and 2. are contrast effects, or 'backfire effects' (Tourangeau & Rasinski, 1986; Tourangeau, 1987), making responses dissimilar. Salience effects (I.E., and 3. in table 1.1) can be either in the direction of consistency or contrast. Consistency effects have been explained by reference to people's need to appear consistent and logically sound (cf. Heider, 1958; Festinger, 1957; McGuire, 1960; Bem, 1967, 1972). Thus, preceding questions may create a consistency effect by making particular beliefs salient, or they may emphasize normative principles such as the norm of 'even-handedness' (Schuman & Presser, 1981) that has been demonstrated in experiments varying the order of questions asking, on the one hand, whether Communist reporters should be allowed to gather news in America, and on the other hand, whether American reporters should be allowed to cover events in a Communist country such as Russia. Placing the question about Communist reporters first, reduces support for free access for American reporters to a Communist country, whereas starting with the question about the American reporters increases respondents' willingness to admit

Communist reporters to America. Schuman and Presser (1981) call this a part-part consistency effect since both questions are at the same level of abstraction. They argue that this effect cannot be attributed to ambiguities or vagueness in the question wording. As Schuman and Presser (1981, p. 30) claim, 'the ambiguity has to do with the nature of language, the fact that words and sentences take part of their meaning from the context in which they occur (cf. Searle, 1979)'. It is difficult to distinguish between what Schuman and Presser call part-whole consistency effects and salience effects. A typical part-whole consistency effect they quote was reported by Smith (1979). He found that asking married people about their marital happiness before asking about their general happiness led to more positive responses to the general question. This certainly is a part-whole consistency effect, i.e., positive responses to the specific question (part) increase the likelihood of a positive response to the general item (whole), but it may well be due to the 'consciousness-raising process' (Schuman and Presser, 1981, p. 44) created by the marital item.

Not many part-part contrast effects have been demonstrated, but one such effect was reported by Willick and Ashley (1971). They found that students were more likely to say that their political party identification was the same as their parents if the question about the parents' party preceded, rather than followed, the question on one's own views.

Contrast effects such as redundancy/subtraction effects have been explained by the following argumentation: If a respondent has already mentioned certain attitudes or behaviours, (s)he may think it redundant to mention them again. (S)he may even think that these elements should be excluded from subsequent questions (answers), which may lead to a redefinition effect. For example, Schuman and Presser (1981) found that people who had already expressed favourable attitudes towards abortion in such cases where there was a danger of serious birth defects, or where the mother's life was under threat, were less likely to agree to abortion on demand.

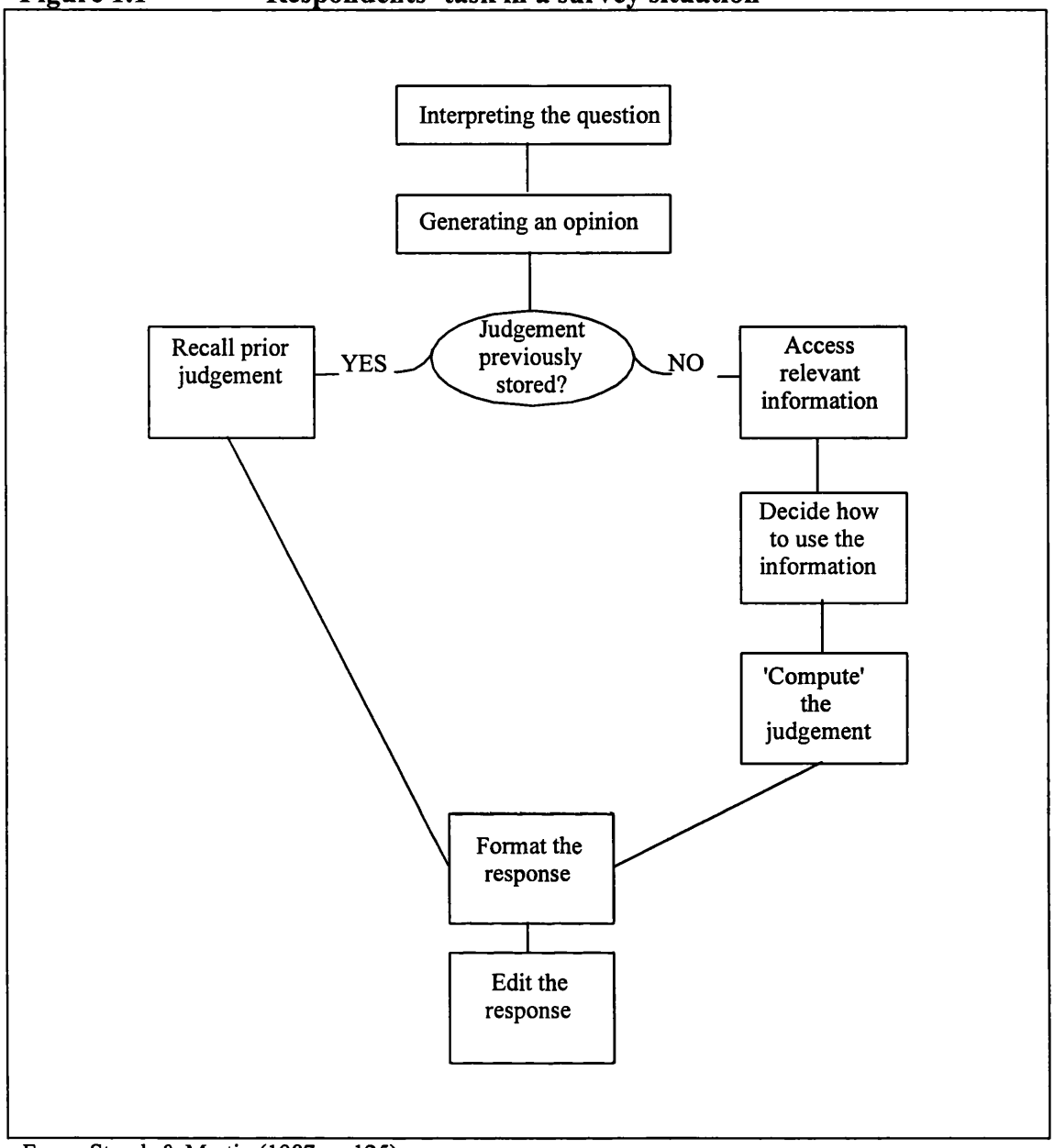
Schuman and Presser argue that this may be because respondents subtract these special circumstances from the general question and thus redefine the question to mean abortion under other circumstances than those mentioned above.

Until the late 1970s or early 1980s, research on context effects was mainly concerned with finding ways to avoid these effects. However, in the early 1980s a collaborative research programme between cognitive psychologists and survey researchers was initiated (cf. Jabine, Straf, Tanur and Tourangeau, 1984; Hippler, Schwarz and Sudman, 1987; Schwarz and Sudman, 1992, Tanur, 1992). This programme shifted the focus of research away from attempts to circumvent context effects towards a search for theoretical explanations of why and how they are likely to occur. Thus, in the last fifteen years of the twentieth century we have seen the emergence of a number of cognitive theories of the processes and stages involved in answering survey questions (cf. Feldman and Lynch, 1988; Schwarz, 1990; Strack and Martin, 1987; Tourangeau and Rasinski, 1988) paying greater attention to the interaction between interviewer and respondents, and properties of language (cf. Schwarz and Strack, 1991; Schwarz, 1994). Several theorists have proposed a cognitive account of answering questions (e.g. Tourangeau and Rasinski, 1986, 1988; Strube, 1987; Strack and Martin, 1987; see figure 1.1). They all contend that there are four major cognitive processes involved in answering questions: 1) Interpretation or comprehension; 2) Recall of relevant memories; 3) Formation of the overall judgement; and 4) Selection and editing of the response. Context effects can arise in any of these processes. Prior items can affect responses by suggesting an interpretation of the issue or by increasing the accessibility of some of the relevant beliefs (Tourangeau and Rasinski, 1986). It is not only necessary for the respondent to understand the semantic or the literal meaning of the words in the question, but also the pragmatic or the intended meaning. This 'need' to understand the intended meaning originates from the respondent's desire to co-operate in a type of social situation in which the respondent is expected to provide information. Although, in

principle, it is possible for the respondent to ask for clarification if (s)he is faced with some sort of ambiguity, (s)he is not likely to get any further explanations in the survey interview. For the sake of standardization, interviewers are usually discouraged from explaining terms or questions to respondents (cf. Martin, 1984, p. 280). In such situations, the respondent is likely to use any information available to her/him to infer what the survey researcher wants to know. Strack and Martin (1987) argue that this information can be obtained from three different sources:

1) Content of the question itself
2) The question's response scale
3) Preceding questions that may provide information

Figure 1.1 Respondents' task in a survey situation



From: Strack & Martin (1987, p. 125)

Common to all approaches studying comprehension is the emphasis on our use of prior knowledge in interpretation (cf. Mandler and Johnson, 1977; Abelson, 1981; Bower, Black, & Turner, 1979; Miller, 1979). These approaches also share the notion that context allows us to activate and use the relevant pieces from our vast fund of background information. Without context, we are unable to determine what information is relevant; with changing contexts we draw on radically different pieces of information in the comprehension process, leading to radically different readings

or understandings. (Tourangeau, 1984). Hence it should come as no surprise to find that previous questions and answers to those questions influence responses to later questions.

Having interpreted or misinterpreted the question, the respondent faces the problem of how to answer it. Almost all questions require us to search memories for an answer. Anderson (1976) views long-term memory as an associative network and argues that we remember by searching relevant portions of the memory network. This perspective implies that good cues for remembering something are those that activate the right part of the network and that in most cases the best cue is the item itself. The principle of cognitive accessibility (Wyer, 1980; Wyer and Srull, 1986) suggests that when answering survey questions, respondents do not systematically retrieve all the information stored in memory that might be relevant, but that they search only until they encounter *some* information upon which to base their answer. Hence, they are likely to use the most accessible or salient information. An important factor in determining the accessibility is the recency with which the information has been cognitively processed or thought about. Because heightened accessibility is believed to be temporary and to decrease over time (Anderson, 1983; Posner, 1978), it should be possible to diminish context effects by interposing buffers of unrelated items between the specific context questions and the more general target question. But as Bishop et al. (1983), Tourangeau et al. (1989a), and others have pointed out, evidence on this buffering prediction is mixed.

Many types of questions require considerable cognitive work from the respondent after the relevant facts have been retrieved. The question may call for a judgement that requires several pieces of information to be combined and it may call for some inference. While there is no agreement on how respondents reach a certain judgement, according to information integration theory, in making a judgement we evaluate the individual pieces of information we have and then we integrate them by

following a simple rule, such as multiplication, addition or averaging. The most important assumptions made here are: a) people readily evaluate diverse pieces of information on a common scale and b) they then combine the information according to simple formulae (Anderson, 1974; 1981). Fishbein & Ajzen (1975) also claim that people follow simple rules when they are making a judgement, but they emphasize that the span of human memory is so limited that each judgement is only based on 5-9 pieces of information, the most salient beliefs at any one time. A contrasting view presented by Tversky and Kahneman (1973) is that we apply loose rules of thumb in making judgements. They have identified three such heuristics and shown how they can lead to systematic errors in judgement of frequency and likelihood. These heuristics are availability, representativeness and anchoring and adjustment. Although Tversky and Kahneman's view is fundamentally different from that of Anderson and of Fishbein and Ajzen, it may well explain which beliefs are the most salient at any one time.

The models of the cognitive stages involved in answering survey questions are all sequential. This is surely an oversimplification since it is likely that both the propositions retrieved and the judgements made can lead to redefinition of the question, which requires a form of feedback mechanism from stages 2 and 3 (the retrieval and the judgement stages) into stage 1, the interpretation stage. Smith (1992) discusses what type of effect is likely to occur at each of these cognitive stages (see table 1.2)

Table 1.2 **Context effects and cognitive stages in the question-answering process**

Question-answer stage	Reaction to prior question(s)	
	Carryover/ consistency/ assimilation	Backfire/ contrast
A. Interpretation	redefinition/clarification	redundancy
B. Retrieval	stimulation	
	focus/salience	simple contrast
C. Judgement	constraint (normative and logical)	simple contrast
D. Response selection		
1. Mapping		
2. Editing		
a) consistency	constraint (normative and logical)	simple contrast
	focus/salience	
b) self-presentation		

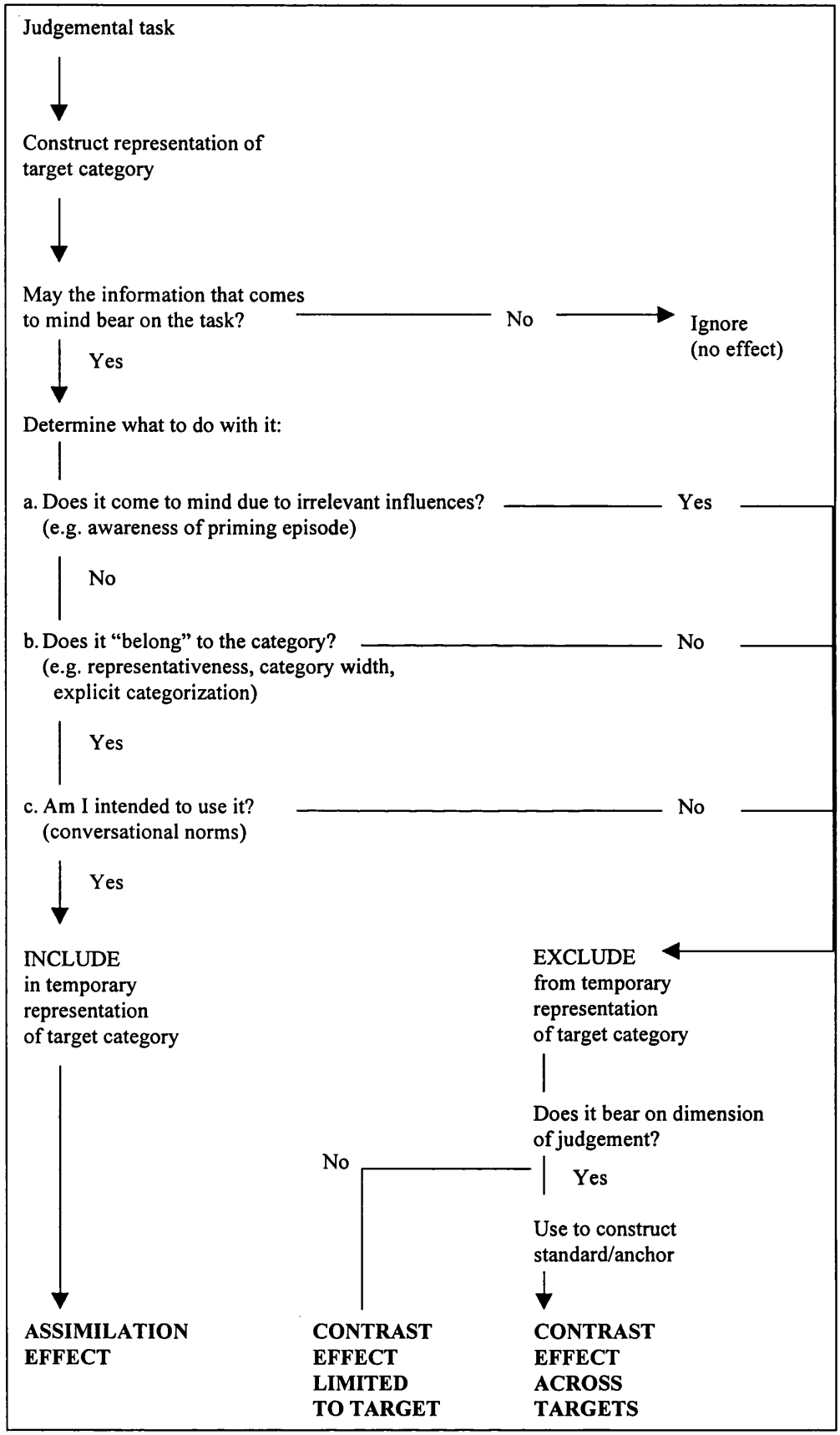
Adapted from Smith (1992).

Although the prevailing view is that context effects arise because prior questions increase the accessibility of particular beliefs, prior questions can also affect the way in which the respondent uses the retrieved information. However, predictions about *what* effects the context will have, have proved to be difficult. The effect can be either in the direction of consistency, to make responses to one question similar to responses to other (i.e., what Schwarz and Bless, 1992 call an assimilation effect), or a contrast effect, making responses dissimilar (also called a 'backfire-effect' (Tourangeau and Rasinski, 1986)).

Although accessibility is believed to be temporary and to decrease over time, several studies (cf. Bishop, Oldendick and Tuchfarber, 1983; Schuman, Kalton and Ludwig, 1983) have demonstrated that it is not the temporal contiguity of questions that determines the context effect, but rather the perceived relevance of the questions. Schwarz and Bless (1992) have proposed a model to account for how this may happen. If the respondent perceives the information activated by the preceding

questions as relevant to the judgement (s)he has to make, (s)he will *include* this information in the data-base (s)he uses to make his judgement, making responses to questions consistent with one another. On the other hand, if the respondent does not believe that the information bears on the judgement, (s)he will *exclude* it. This exclusion may then (but not necessarily) lead to a contrast effect, since the information may still affect the judgement, either by serving as a standard of comparison (Kahneman and Miller, 1986) or as a reference point for anchoring the response scale (Ostrom and Upshaw, 1968). Since the context can push respondents in opposite directions, the context effects may cancel one another in a heterogenous sample. Although this overall cancellation of context effects may give us an accurate estimate for the sample as a whole, it will make comparisons between subgroups problematic and spurious (Schwarz and Strack, 1991).

Figure 1.2. **Inclusion/exclusion and the emergence of assimilation and contrast effects**



From: Schwarz & Bless (1992, p. 238)

1.3 Errors in attitude measurement

> '"What is the truth? said jesting Pilate; and would not stay for an answer." Thus Francis Bacon opens his essay "Of Truth". Yet we cannot scoff at truth in trying to deal with measurement and error. We must begin with some sense or understanding or even faith that there is a true quantity, a true value under measurement, for *error* means discrepancy from truth.' (Turner and Martin, 1984, p. 97).

There are numerous aspects of the social survey that can lead to 'errors' in measurement, and thus poor reliability and validity. These 'errors' have generally been divided into two main classes: sampling errors (variability due to sample size and complexity of sampling plan) and nonsampling errors. Sampling theory is relatively well established, but theories and knowledge about nonsampling errors are more fragmented. Nonsampling errors are of two major types: 1) non-response errors arising from difficulties in the execution of the sample, either by item non-response or by failure to get interviews with members of the selected sample, and 2) response errors caused by other factors such as respondents misinterpreting a question or deliberately lying. Sudman and Bradburn (1974) distinguish three sources of response errors: the characteristics of the task itself (the questionnaire), the interviewer's performance and the respondent. Hence, a theory of response errors has to take into account the interaction between these three sources. Despite realizing the importance of this interaction, the questionnaire and context and order effects will be the focus of attention in this thesis, since the bulk of research on response errors has focussed on the characteristics of the interviewer.

Survey questions are of many different types and different problems can be expected to arise in the question answering process, depending on the kind of question under consideration. Sykes (1982) distinguishes four types of questions commonly used in surveys. These are questions that request factual or behavioural information; questions that assess the respondents' awareness or knowledge of a subject; questions that call for a reason or explanation; and questions that elicit attitudes or opinions. The two former question types, i.e., those dealing with behaviour and

knowledge, can be argued to be inherently different from the two others. There is little doubt that when we ask a person how often (s)he has been to a dinner party in the last six months there is a true value that exists. That is, although the definition of a dinner party may be vague, the person has been to a specific number of such parties. The same applies to knowledge questions. There is usually a true answer to such questions, which the respondent knows or does not know. However, the fact that both behavioural questions and knowledge questions are known to be subject to various kinds of errors or biases depending on factors such as interpretation of concepts, ease of retrieval from memory, amount of telescoping of behaviour and self-presentation should not be ignored (cf. Kalton & Schuman, 1982). For example, attitude questions about crime have been shown to lead to more reports of criminal victimization (Cowan Murphy, & Wiener, 1978; Gibson, Shapiro, Murphy, & Stanko, 1978).

In the case of attitude questions and questions calling for a reason or explanation it is more debatable whether there exists a 'true value' to measure. If there is no 'true value' one can hardly talk about error in measurement, but the instability of attitudes or measures of attitudes has become apparent in survey research. Attitude questions, especially general ones, have been found to be vulnerable to the context in which they are administered, variations in the wording of the question, and the formal properties of the question's structure (Krosnick & Schuman, 1988). Attitudes have been shown to be sensitive to a range of influences: beliefs, values, norms, feelings, other attitudes, behaviours and arguments (Tourangeau 1984, 1992; Tourangeau and Rasinski, 1988). Context effects on attitudinal questions have often been treated as 'measurement artifacts' (Schuman, 1982), which implies that attitudes are conceived of as stable phenomena, and problems of measurement are blamed for the observed inconsistencies. This view is also reflected in the use of the term response *error.* However, many researchers argue that despite the fluctuation in people's survey responses they do have underlying 'true attitudes' that are overwhelmingly stable

(Brown, 1970; Pierce & Rose, 1974; Achen, 1975, 1983; Dean and Moran, 1977; Erikson, 1979; Feldman, 1989). They contend that the fluctuations or measurement errors stem from the difficulty of mapping the attitudes onto the unavoidably vague language of survey questions. Therefore, it is important to distinguish between two different types of attitude stability: stability at the psychological level, i.e., stability of the hypothetical attitude concept, and stability of attitudinal responses. Following Bradburn (1983) I question the use of the term *error* in the case of attitude questions, because, as argued above, it is by no means clear that there is 'one' true value for attitudes, opinions, beliefs, emotions, etc. Hence, a question that needs to be addressed is whether the apparent inconsistencies are purely artifacts of changes in question order and/or response scales, or to some extent due to the inherent nature of attitudes. Is the observed instability only at the response level or can it also be found at the psychological level in the hypothetical construct (if in fact an attitude exists at the psychological level)?

The determination of potential attitude stability and attitude changeability is an important prerequisite for the prediction and explanation of context effects. How much do we expect attitudes to fluctuate? What is needed for an attitude to change? Which characteristics of the respondent in a survey situation are most likely to influence or mediate effects of previous questions (i.e., the context)?

Attitude stability involves two components and it is important not to confuse them. When talking about how stable attitudes are, firstly, one is referring to how resistant to change they are, and secondly, how much random error of measurement they have associated with them. A number of attempts have been made to separate chance variability in attitude statements from long-term change, and it has repeatedly been found that response instability consists almost exclusively of chance variation around a largely stable central tendency (Converse, 1964; Achen, 1975; Dean & Moran, 1977; Erikson, 1979; Judd & Milburn, 1980; Judd, Milburn & Krosnick,

1981; Feldman, 1989; Zaller, 1990). However, most researchers dealing with the consistency or stability of attitudes over time have made little attempt to separate random error of measurement from 'true attitude change' (Kendall, 1954; Converse, 1964, 1970, 1980; Schuman & Presser, 1981), but have instead made the assumption that no attitude change took place from one time to another and all the inconsistencies over time could be attributed to random measurement error. Viewing all fluctuations in attitudes as random measurement error also implies that there exists a fixed attitude which, in theory, one should be able to measure. Therefore, one would like to separate random fluctuations at the intermediate level and random error of measurement related to the measuring device, the questionnaire. Random error of measurement can be argued to occur at the level of measurement only, whereas random fluctuations in attitudes and systematic attitude change also occur at the intermediate level, in the hypothetical construct itself.

As pointed out by Zaller and Feldman (1992): 'Virtually all public opinion research proceeds on the assumption that citizens possess reasonably well formed attitudes on major political issues, and that surveys are passive measures of these attitudes. The standard view is that when survey respondents say they favor X they are simply describing a preexisting state of feeling favorably toward X' (p. 579). But do attitude theories lend support to this prevailing view of survey researchers that attitudes are preexisting psychological states that should not be affected by measurement? Can one assume that despite considerable instability in attitudinal responses the attitude will maintain its stability at the intermediate level?

Thurstone, in his article (1928), claims that: 'It will be conceded at the outset that an attitude is a complex affair which cannot be wholly described by any single numerical index', and he continues: 'We shall state or imply by the context the aspect of people's attitudes that we are measuring' (p. 530). Thus, Thurstone would not have expected attitudes to be so stable that they would remain the same in every

context. This view seems to be the prevailing view within the psychological attitude theories, but whether survey researchers and other social scientists have accepted this is not clear. Cantril (1944) contends that 'the respondent's mental context is solidly structured ... the same answer is likely to be obtained irrespective of the way questions are asked (pp. 48-49). A similar view is reflected in Payne's (1951) argument: 'Where people have strong convictions, the wording of the question should not greatly change the stand they take. The question can be loaded heavily on one side, or heavily on the other side, but if people feel strongly their replies should come out about the same. It is only issues where opinion is not crystallized that answers can be swayed from one side of the issue to the other by changes in the statement of the issue' (p. 179).

Many of the traditional theories on attitudes are based on the assumption that attitudes are psychological entities in people's minds although they vary considerably in their view of the stability or endurance of attitudes. The main challenge for the psychologist in the 1930s and '40s was finding a way to get to those attitudes, i.e., measure them with acceptable precision. This is apparent in the writings of Allport (1935) where he states that: 'Attitude scales should be regarded only as the roughest approximations of the way in which attitudes actually exist in the mental life of individuals' (in Fishbein, 1967, pp. 11-12). Unreliable measures were a major concern, but fluctuations should also be expected because 'attitudes often change, and an investigation made under one set of conditions may not for long present a true picture of the attitudes of any given group' (in Fishbein, 1967, p. 12).

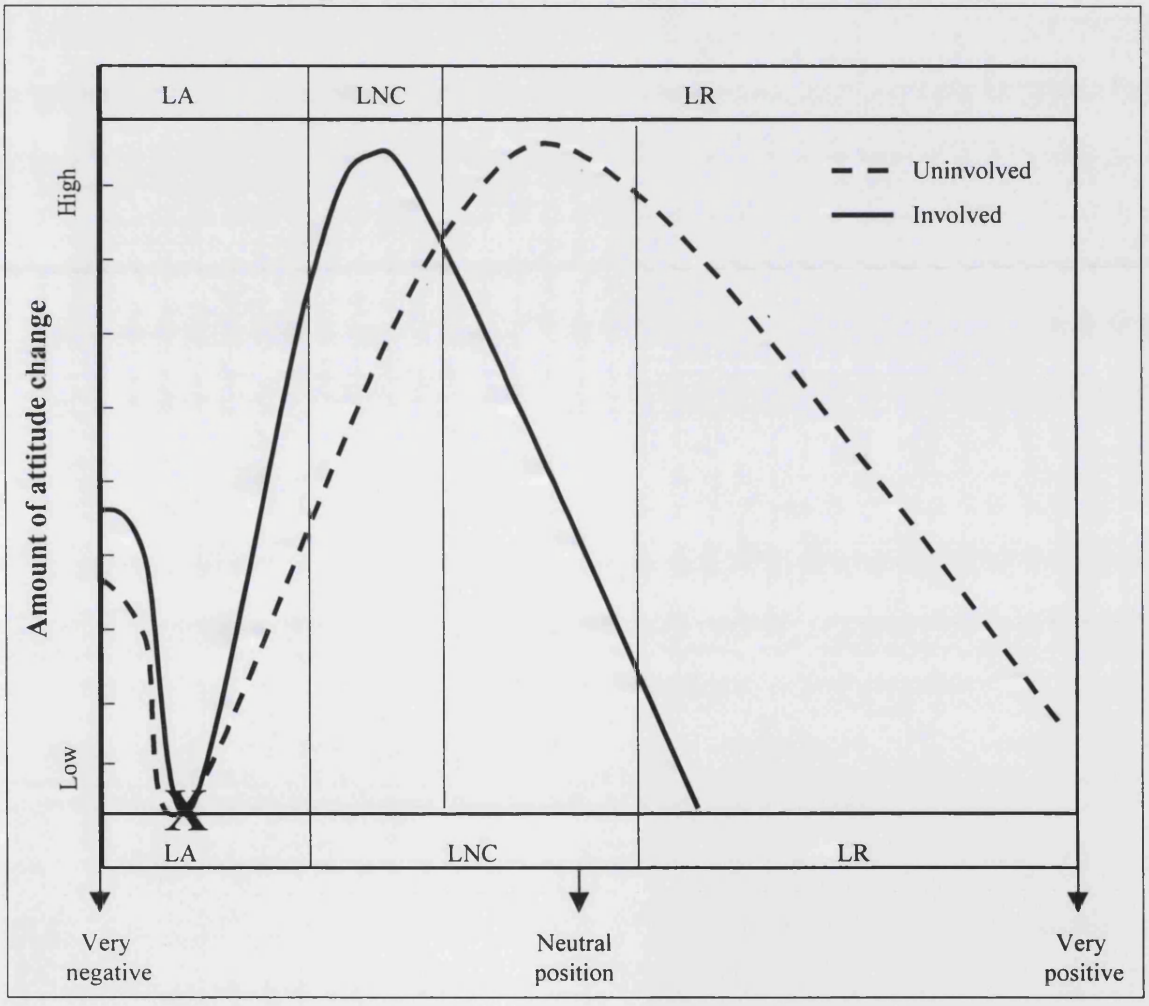
Theories differ significantly in the perspective they adopt concerning attitude stability, and whereas the majority undoubtedly views the attitude as a *stable* hypothetical construct (that may be measured as a point-on-a-continuum) others postulate a considerable instability, not only in responses but also in the attitude

itself. Attitude theories that explicitly allow for some instability in attitudes are for example Sherif and Hovland's (1961) concept of latitude of acceptance, McGuire's (1969; McGuire & McGuire, 1991) loose linkages and Kaplowitz, Fink and Bauer's (1983) oscillations. Such theories are based on the idea that attitudes may be divided into different components, i.e., stable *basal* components plus *peripheral* components that are readily changed by persuasion (N.H. Anderson, 1959; Lazarsfeld, 1959; Kelman, 1980).

Sherif and Hovland's (1961) assimilation-contrast theory of attitude change is based on the premise that when repeatedly presented with a number of stimuli, individuals form reference scales that allow for the relative placement of these stimuli along one or more dimensions. A particular attitude is perceived as an 'internal anchor'. A communication or a persuasive message is seen as an 'external anchor'. Thus, attitude change is brought about by confrontation of the discrepancy between two anchors. Contrast is a shift in judgement away from an anchor, whereas assimilation is a shift toward an anchor. According to the assimilation-contrast theory a primary factor affecting the influence of a persuasive communication, or for that matter information contained in previous questions in a questionnaire, is the degree of discrepancy between the communication and the person's latitude of acceptance. If the communication advocates a position that is not too discrepant from that of the recipient, (s)he will see it as favourable and will be influenced by it, i.e., (s)he will change her/his position in the direction of the external anchor and assimilation will take place. If, on the other hand, the communication advocates a position that is highly discrepant from that of the recipient, in the latitude of rejection, contrast will result, and the individual will perceive the communication as unfavourable, and will be either minimally positively influenced or negatively influenced. Hence, Sherif and Hovland (1961) conceive of the individual's attitude not as a single point but as a range of related acceptable positions, i.e., a latitude of acceptance. The width of the latitudes of acceptance and rejection varies with the degree of the individual's

ego-involvement with the issue in question. The higher the ego-involvement, the narrower will be the latitude of acceptance, making high ego-involvement attitudes more resistant to change. The relationship between the discrepancy of the two anchors and attitude change is a curvilinear one (see figure 1.3). As long as the communication remains within the individual's latitude of acceptance, the greater the discrepancy, the greater the influence will be (Insko, 1967)

Figure 1.3 **Latitudes of acceptance, non-commitment and rejection: Target-communicator discrepancy and attitude change**



The figure shows the relation between discrepancy of message and attitude change for two hypothetical individuals. Both hold a negative attitude towards the attitude object (denoted by X on the abscissa). Width of the latitudes of acceptance (LA), noncommitment (LNC) and rejection (LR) is shown at the top of the figure for an involved individual and at the bottom for an uninvolved individual (adapted from Eagly & Chaiken, 1993).

The theory of assimilation-contrast places greatest emphasis on the target-communicator discrepancy (see also Petty & Cacioppo, 1986a; Granberg & Campbell, 1977). There are two major problems with the discrepancy idea. First, the principle of regression toward the mean guarantees that the most discrepant individuals (i.e., furthest away from the mean) will change the most. Second, individuals occupying the most extreme positions are known to be more certain of their stand (Cantril, 1944; Suchman, 1950) and are considered to be more ego-involved (Sherif and Hovland, 1961). Thus, a neutral communication is more likely to influence the least discrepant individuals than the most discrepant individuals. In other words, discrepancy is confounded with certainty and ego-involvement (Insko, 1967).

McGuire & McGuire's (1991) theory of attitude structure, or the structure of thought systems is an elaboration of the probabilogical model (McGuire, 1981), which suggests that merely responding to an attitude question on a given issue can lead to changes (polarization) in attitudes towards related issues (Henninger & Wyer, 1976; Judd, Drake, Downing & Krosnick, 1991). This theory is composed of five major postulates: the utility-maximizing postulate, the congruent-origins postulate, the wishful-thinking postulate, the sufficient-reason postulate, and the rationalization postulate. These five postulates constitute the core of the theory, but an auxiliary loose-linkage postulate provides the theory with the flexibility to cope with fluctuations in attitude measurement. McGuire's (1969) loose-linkage postulate asserts that a change in attitudes needs to reach a certain degree, or a threshold, before the Socratic effect takes place, i.e., before the change in the particular attitude that has been affected starts spreading to related beliefs. McGuire introduced the loose-linkage postulate not only as a response to empirical observations of a 'slackness in thought-system organization, but also to avoid theoretical implausibility' (McGuire & McGuire, 1991, p. 8). As the McGuires point out, it would be implausible, given the massive amount of information constantly

impinging upon us, to assume that any change in a belief or an attitude would spread to related beliefs. They contend that 'the loose-linkage postulate avoids this implausible and maladaptive scenario by allowing for remote changes within the loosely linked thought system but dampening them by the "give" between the successive links, thus adaptively allowing moderate degrees of useful responsiveness and connectedness in thought systems without sacrificing completely the need for stability' (McGuire & McGuire, 1991, p. 8). Thus it is not until a certain threshold in attitude change has been reached that a 'true' change has taken place.

Anderson & Hovland (1957) in their proportional-change model, which is a special case within the more recent information integration theory (Anderson, 1974) suggested that the degree of attitude or opinion change could be described with the following equation:

$$X_1 = X_0 + S\,(C - X_0) \qquad [1]$$

where:

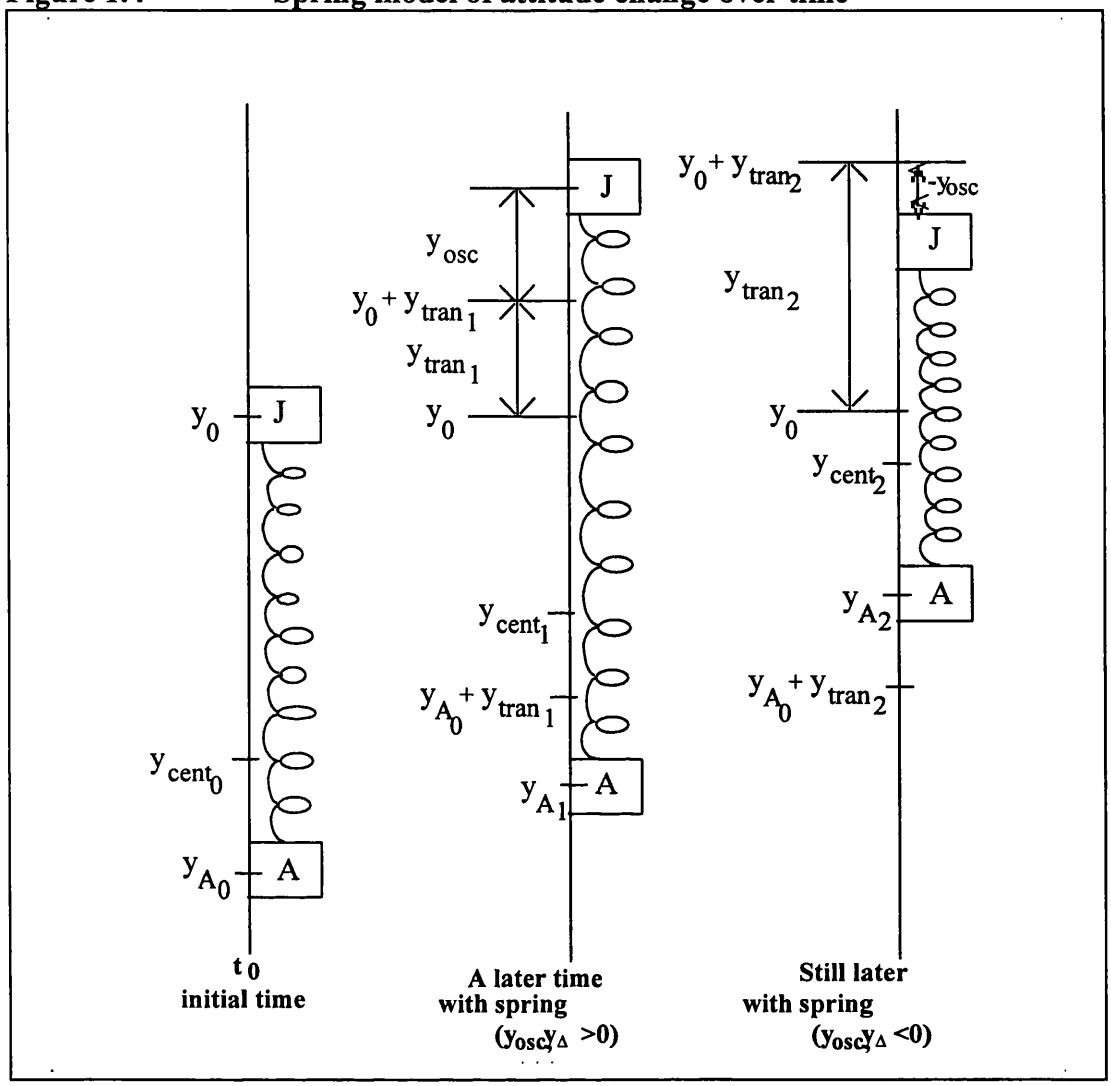
X_0 is the opinion before presentation of the communication
X_1 is the opinion after presentation of the communication
C is the fixed point of the communication
S is the coefficient of proportionality

When testing hypotheses derived from this model, and hypotheses concerning the order of communications, Anderson (1959) found that after repeated exposures to various pairs of persuasive communications the effects of the order of communications changed from recency effects to a primacy effect. Anderson explains this finding by suggesting that an opinion or an attitude is not based on one component but two: 'a basal component which is relatively little affected by the communications once it is formed, and a superficial component which is quite labile' (p. 379). These two components, he claims, act together to produce the observed opinion response. Anderson (1959, p. 380) concludes that: 'The two-component hypothesis suggests a ... basic problem, namely that the structure of

opinion may be too complex to be represented by a single number on an opinion scale'.

A number of other mathematical models have been proposed to predict attitude change (Saltiel & Woelfel, 1975; Danes, Hunter & Woelfel, 1978; Laroche, 1977; Fink, Kaplowitz, & Bauer, 1983). Most of these models are static, and thus, lack the flexibility to account for fluctuations or changes that take place in the absence of a persuasive message or some other external force. A dynamic model of attitude change was proposed by Kaplowitz, Fink and Bauer (1983). While most of the mathematical theories of attitude change only try to predict the end point of the attitude change process, Kaplowitz, Fink and Bauer attempt to explain the process by which the end point may be reached with their theory of oscillation. As a number of studies have demonstrated, attitudes change over time even in the absence of new external messages (cf. McGuire, 1960; Walster, 1964; Tesser & Conlee, 1975). To explain such changes it is necessary to introduce some sort of theoretical apparatus. The oscillation model posits two dynamic components: *translation* to a new equilibrium and *oscillation* around the moving equilibrium. Kaplowitz, Fink and Bauer contend that concepts are interrelated and that attitudes that are well anchored or related to other concepts are more resistant to change (see also Nelson, 1968; Holt, 1970; McGuire, 1964). This view also accords with cognitive dissonance theory (Festinger, 1957; Aronson, 1969) which has shown that people will reject or distort messages that conflict with cherished beliefs. According to oscillation theory, concepts can be linked by two different mechanisms. One is the *rigid brace*, in which the distances between the various concepts remain fixed. The other is a *spring mechanism*, in which the distances between concepts can be changed by the presence of oscillation (Woelfel & Fink, 1980). These mechanisms allow for a change in the direction of the message, and a movement back towards the initial position (see figure 1.4).

Figure 1.4 Spring model of attitude change over time



A=anchor, J=implicated concept, y_{cent}=location of center of mass, y_A=location of anchor, y=location of implicated concept, y_{tran}=amount of system translation, y_{osc}=amount of oscillation, y_Δ=amount of spring stretch. (Adapted from Kaplowitz, Fink and Bauer, 1983)

Failures to predict behaviour from attitudes and other inconsistencies in attitude measurement have led many researchers to question or even reject the idea of the attitude as a psychological entity in people's minds, or a hypothetical construct (cf. Abelson, 1972; Wicker, 1971). Tesser (1978), Wilson and Hodges (1992) and Wyer and Srull (1989) have suggested that attitudes might be constructed each time they are needed on the basis of whatever information is salient. Bem (1972) adopts an extreme position where he eschews the traditional view and postulates that 'to the extent that internal cues are weak, ambiguous or uninterpretable' (p. 2) people infer from their own overt behaviour what their 'attitudes' are. He suggests that people

use the same cues as any observer would when they infer from their overt behaviour what their attitude may be. Hence according to Bem's self-perception theory one can not expect much consistency in attitudes unless one's behaviour is persistent.

Others, such as Converse (1970), who more reluctant to abandon the concept of attitudes completely, explain low test-retest attitude correlations with poor measuring instruments, i.e., Converse suggests that the low coefficients are due to the researchers' 'very poor job of tapping the attitudinal dimensions at which [they] originally aimed' (p. 171). He suggests that there are 'two sharply discontinuous classes of respondents, the stable and the random' (p. 175), and only the stable can be argued to have a true underlying attitude. He argues that the random responses are due to the psychological state of a 'non-attitude', and thus concludes that it is not possible in the case of attitude questions to distinguish between random error of measurement and random error resulting from having a 'non-attitude'. Hence, reliability of attitude questions can not be viewed only as a property attached to the measuring instrument, but rather 'a joint property of the instrument *and* the object being measured' (Converse, 1970, p. 177). Other theories have stressed the importance of centrality (Sherif & Cantril, 1947) or personal importance (Festinger, 1957) as factors influencing attitude stability. Converse's postulate differs from these since he rejects the idea of an attitude continuum and contends that there simply is a large number of social objects that people do not have an attitude towards. Nevertheless, when people are asked about their attitude towards these objects they feel obliged to answer the question, thus forming an attitude on the spot in a more or less random manner, and leading to a great deal of 'noise' in attitude measurement. Because of the weak correlations that Converse found he argues that respondents show little ideological coherence. These findings revivified doubts about the attitude concept and the assumption usually made by survey researchers that people have reasonably well formed attitudes on most socially significant issues. As a result, Zaller and Feldman (1992) propose a different understanding of survey

responses. They suggest that people do not possess preformed attitudes at the level of specificity required in surveys. Rather, they have ideas and considerations that are not necessarily consistent. When questioned, respondents call to mind a sample of these ideas, and are likely to oversample ideas that may have been highlighted by the context of the question or have been called to mind recently. To explain the frequently observed response instability, Zaller (1992) has formulated the RAS-model (Receive-Accept-Sample), composed of four major axioms (see table 1.3).

Table 1.3 Axioms of Zaller's Recieve-Accept-Sample model

1. Reception Axiom:	The greater a person's level of cognitive engagement with an issue, the more likely he or she is to be exposed to and comprehend - in a word, to receive - political messages concerning that issue.
2. Resistance Axiom:	People tend to resist arguments that are inconsistent with their political predispositions, but they do so only to the extent that they possess the contextual information necessary to perceive a relationship between the message and their predispositions.
3. Accessibility Axiom:	The more recently a consideration has been called to mind or thought about, the less time it takes to retrieve that consideration or related considerations from memory and bring them to the top of the head for use.
4. Response Axiom:	Individuals answer survey questions by averaging across the considerations that are immediately salient or accessible to them.

(From Zaller, 1992, p. 58)

A slightly different version of this model is proposed by Zaller & Feldman (1992). This version relies on three axioms, i.e., the ambivalence axiom, response axiom, and accessibility axiom, and emphasizes the view that people may have a number of different attitudes towards one object and that people's considerations on particular

issues may be opposing, which might lead them to decide the issue either way. This model anticipates response instability, and it also posits a definite structure to the instability. They explain the structure in the following manner: 'Suppose that 80% of the considerations in one person's head induce her toward a liberal response on a given issue, while 20% induce her toward a conservative response; and suppose that for a second person, these proportions are reversed. If each based her survey responses on a one-element sample from the distribution of considerations in her head, the first person would be liberal 80% of the time and the second would be conservative 80% of the time' (Zaller & Feldman, 1992, p. 597). Thus, as Zaller and Feldman argue, people would have central tendencies that are stable over time, but responses to attitude questions would fluctuate around these tendencies. An attitude towards an issue should be regarded as a range of reactions to that issue rather than a single 'true attitude' (Zaller & Feldman, 1992).

Abelson (1986) treats what Converse calls 'non-attitudes' in a very different manner. He argues that attitudes can be regarded as evaluative beliefs and that 'beliefs are like possessions'. According to Abelson, it is important to make a distinction between a '*testable belief,* belief about objects within the immediate experience of the person that allow appropriate action and feedback, and *distal belief*, belief about objects only remotely experienced or not sensibly verifiable' (p. 229). Abelson claims that the fact that people generally answer survey questions about distal matters and their answers enter into systematic relationships supports the psychological validity of distal beliefs. If beliefs can be regarded as possessions, it follows naturally that people do not have a belief about everything. And if they don't possess a belief, they may well 'borrow' one to format a response to a survey question on the spur of the moment. Abelson (1986) lists seven factors that can induce a state of ownership and at the same time increase the stability of beliefs or attitudes, but by 'belief' he means 'a conjectural proposition about some object in the world' and he takes 'an "attitude" to be an evaluative belief, that is a belief that

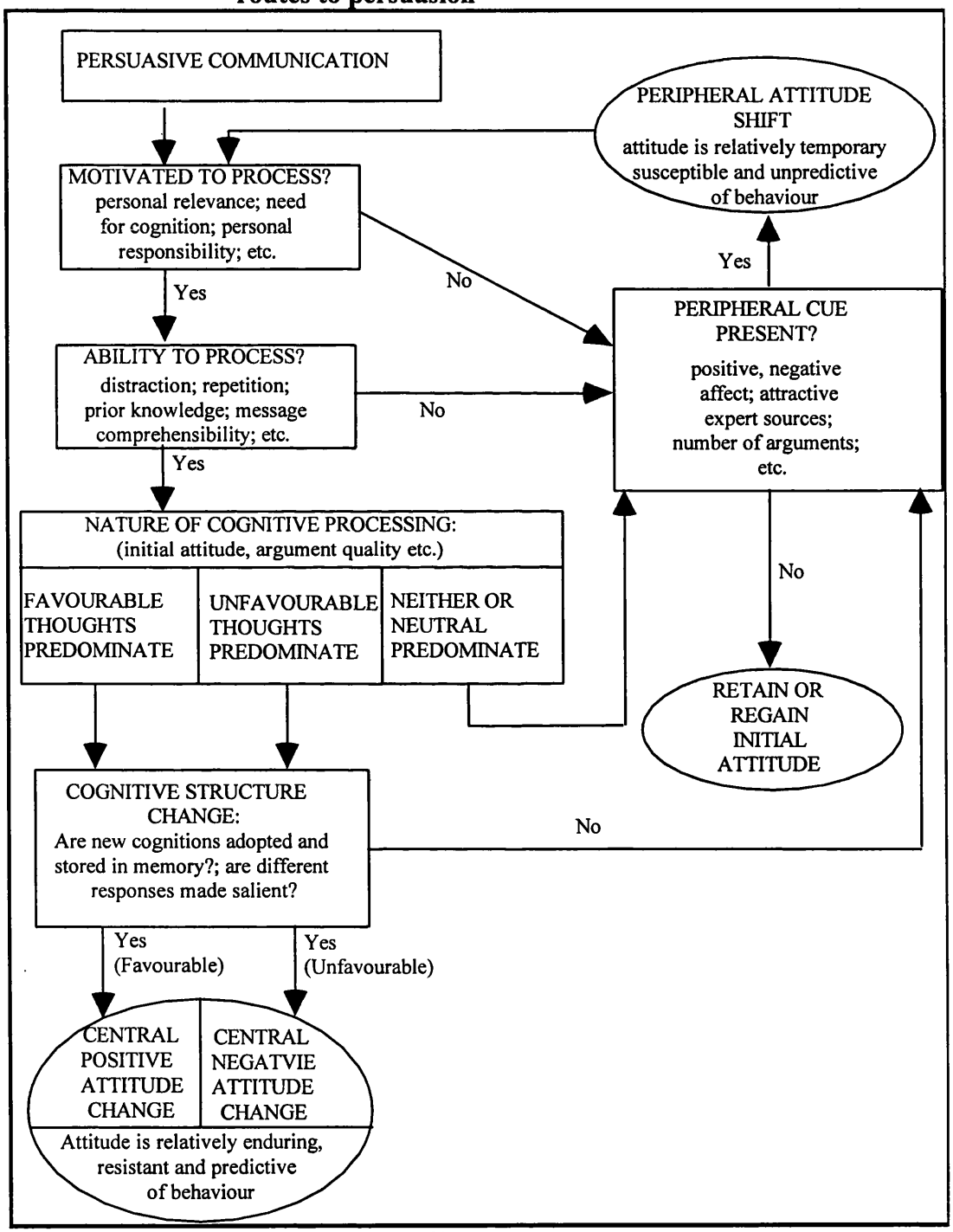
an object is good or bad in some way(s)' (note 1, p. 242). These factors are: public commitment to a belief, suffering for a belief, explaining a belief, elaborating a belief or tracing it's origins, defending a belief, attributing longevity to a belief, becoming aware of the value of a belief.

Other researchers, such as Achen (1975) and Krosnick (1988), have objected to Converse's conclusion about non-attitudes. Achen reanalysed the data from Converse's research and attempted to separate error variance due to instability in people's attitudes and error variance due to low reliability of survey questions. He corrected the data for measurement errors and found substantially higher correlations than had been found by Converse. Achen (1975) thus concludes that: 'Measurement error is primarily a fault of the instrument, not of the respondents' (p. 1229). Krosnick (1988) claims that Converse (1964, 1970, 1980), Kendall (1954), and Schuman and Presser (1981) are errant in assuming that greater inconsistency in responses to questions concerning non-important attitudes (or non-attitudes) necessarily reflects a greater degree of error in measurement. He stresses the importance of estimating the amount of attitude change occurring between the two points of measurement, but these researchers all based their conclusion on the assumption that no 'real' change in attitudes had taken place.

More recent theories of persuasion and attitude change, such as Petty & Cacioppo's (1981) Elaboration Likelihood Model (ELM) attempt to integrate the 'conflicting findings in the persuasion literature under one conceptual umbrella by specifying a finite number of ways in which source, message, recipient and other variables have an impact on attitude change' (Petty, Cacioppo & Haugtvedt, 1992, p. 151). The ELM model is based on the assumption that people are motivated to generate attitudes that are consistent and functional. The model tries to identify the main ways in which people can form their attitudes, and it makes an explicit distinction between two different routes of attitude persuasion (see figure 1.5). They define an attitude as

people's general evaluation of the attitude object, whether the object is themselves, other people, objects or issues.

Figure 1.5 **The elaboration-likelihood model of attitude change: two routes to persuasion**



Adapted from Petty & Cacioppo (1981; 1986b).

An attitude change based on effortful evaluation of relevant beliefs and arguments is a change that occurs via the *central route* to persuasion. Such attitudes are perceived as relatively enduring, resistant, and predictive of behaviour. Central attitude change calls for careful and thorough processing of new and old information. Petty, Cacioppo and Haugtvedt (1992) argue that it is neither functional nor possible for people to scrutinize all of the persuasive communications to which they are exposed, and they often act as 'lazy organisms' (McGuire, 1969) or 'cognitive misers' (Taylor, 1981). Hence attitudes may be changed by fairly simple associations (as in classical conditioning; Staats & Staats, 1958), or inferences (as in self-perception; Bem, 1972; or the use of decision heuristics; Chaiken, 1987). Such changes in attitudes are referred to as following the *peripheral route* to persuasion. Peripheral attitude changes are relatively temporary, susceptible, and unpredictive of behaviour. As indicated in figure 1.5 peripheral attitude change will occur when the person is not motivated or not able to process all relevant information. In the survey situation people are encouraged to answer questions quickly and not to spend a long time thinking about each question. Different contexts in a questionnaire are therefore likely to increase the accessibility of some particular beliefs or ideas, and thus are likely to result in peripheral attitude change. Hence such attitude change should be temporary and presumably one would also find high inconsistency in responses to any one attitude question.

The ELM model proposes that when personal relevance or ego-involvement is high, attitude change will depend more on the cogency of the persuasive arguments than when ego-involvement is low. Contrary to Sherif and Sherif's (cf. Sherif and Hovland, 1961) contention that high importance or ego-involvement invariably makes attitudes more resistant to change, the ELM model predicts that: 'if a message presented highly compelling arguments, the greater elaboration induced by high relevance could lead to *increased* persuasion' (Petty, Cacioppo, and Haugtvedt, 1992, p. 153). On the other hand, if a message can easily be counterargued,

increasing involvement should certainly lead to resistance to change. Attitude change in highly relevant or ego-involved attitudes is contingent on the content of the message, whereas change in low-relevance is more likely to be dependent on peripheral cues such as source credibility, attractiveness, etc. Petty, Heesacker, Haugtvedt, Rennier, and Cacioppo (1990) have also shown that attitude change that takes place under high-relevance conditions is much more persistent than attitude change that occurs under low-relevance conditions.

The major drawback in the ELM model seems to be its inability to foretell whether a particular message or persuasive communication will lead to a central or a peripheral change in attitude.

As has been shown, a large number of attitude theories and theories of survey responses include some sort of mechanism to deal with attitude fluctuations. However, some of the best known traditional theories do not explicitly take attitude instability into account. The traditional balance or consistency theories such as Heider's (1958) balance theory, Festinger's (1957) theory of cognitive dissonance, Abelson and Rosenberg's (1958) psycho-logic theory, and Osgood and Tannenbaum's (1955) congruity theory are all based on the assumption that some sort of mental conflict is necessary to induce attitude change. Hence, as long as no discrepant beliefs are made salient or new information introduced there should not be any change or fluctuation in a person's attitudes. Current research on the cognitive dissonance phenomenon suggests that dissonance occurs when people believe that they are personally responsible for bringing about some foreseeable negative consequence or outcome (Cooper and Fazio, 1984; Scher and Cooper, 1989, Petty, Priester and Wegener, 1994). Thus, even if an act or a belief is inconsistent with one's attitude it should not lead to dissonance unless it leads to a negative outcome (Cooper and Worchel, 1970).

Fishbein and Ajzen (1975; Ajzen and Fishbein, 1980) define an attitude as the 'person's location on a bipolar evaluative dimension with respect to some object' (Fishbein and Ajzen, 1975, p. 216). They furthermore assume that some attitudes may be relatively stable over time, whereas others may exhibit frequent shifts. However, they claim that at any given point in time, a person's attitude toward an object may be viewed as determined by her/his salient set of beliefs about the object. They assume that human beings are quite rational and make systematic use of information available to them according to equation 2:

$$A=\Sigma(b_i e_i) \qquad [2]$$

where:
b: salient beliefs about an object's attributes
e: evaluation of attributes

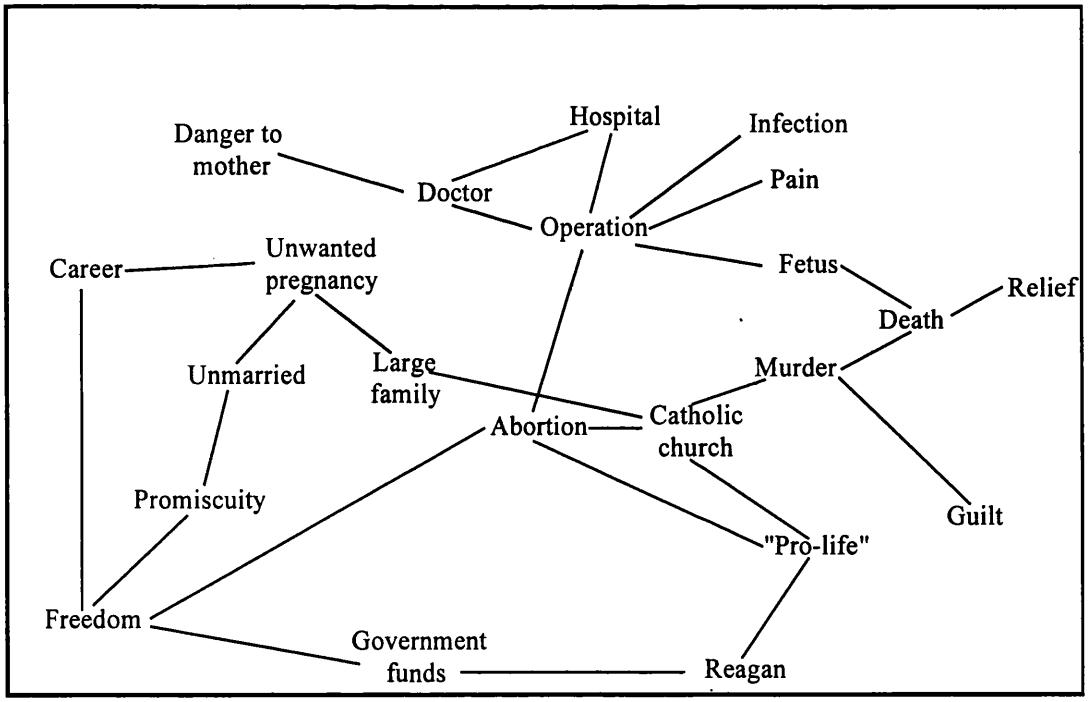
As a result of the limited span of short-term memory a person will base her/his attitude on five to nine (Miller, 1956; Mandler, 1967) salient beliefs only, which can be both positive and negative. Hence, although Fishbein and Ajzen do not postulate a specific mechanism to deal with fluctuations or instability in attitudes, their reference to the limitations of memory implies substantial 'natural' fluctuations, not random, but presumably systematically influenced by the context in which the attitude question is asked. That is, the context can make particular beliefs more salient than others.

Most of the attitude theories discussed so far (excluding Zaller and Feldman's generation idea, which is not an attitude theory) are based on the assumption that anwering a survey question or stating an opinion is a process of mapping the so-called response continuum (people's subjective [mental] responses to a particular stimulus) onto the judgement continuum (the response alternatives), which represents the person's observable judgement to the stimulus (Ostrom, 1987). This is the dimensional perspective of attitudes and what is generally regarded as the traditional view. Another more recent approach (developed in the second half of the

twentieth century) is the information-processing approach, which is mainly concerned with the structural relations among attitudinal beliefs. The key difference between these two approaches lies in their conceptualisation of beliefs. Whereas the dimensional approach is only concerned with locating beliefs on the response continuum (Ostrom, 1981a, 1981b; Devine and Ostrom, 1985) and assumes that a belief can contribute slightly, moderately, or extensively to a judgement, the information-processing approach generally views a belief's contribution as being all-or-none, i.e., a cognition is either activated or it is not, it either contributes or it does not.

Tourangeau and Rasinski (1988) argue that attitude instability is not necessarily a sign of non-attitudes, but that it may well be that the structure of attitudes is such that they appear to be unstable, or that they are inherently unstable. They posit that an attitude is a 'structure containing propositions both supporting and refuting a particular viewpoint' (Rasinski, 1991, p. 167) (see figure 1.6).

Figure 1.6 **An associative network representation of one respondent's ideas about abortion**



(From Hastie, 1987, p. 48)

to the process of the interview because many of the respondents were embarrassed at not being able to answer them; hence many of the interviewers saw themselves forced to comfort people by telling them that the answers to these questions were not common knowledge. This might indeed have diminished the long-term effect of the knowledge questions. The interviewers were instructed to inform people whether they were right or not and to tell the respondents who did not know, the correct answer.

The main hypothesis was that there would be no differences between forms 1 and 3, but that respondents who were given form 2 would report following what is going on in government and public affairs less frequently than respondents who were given forms 1 and 3. However, this shift was only expected to occur if respondents did not know the answers to the knowledge questions. Hence, respondents were classified in three groups with respect to the knowledge questions; 1) both answers correct; 2) either answer correct; and 3) both answers wrong or did not know. Furthermore, less educated respondents and women were hypothesized to be more susceptible to the effects of the knowledge questions than the more educated respondents and men. Testing these hypotheses requires the following analysis:

1) Test for main effects of experimental condition on reported interest in government and public affairs (chi-square).
2) Test for the conditioning effects of level of knowledge on the effects of the experimental condition (i.e., interaction between knowledge and condition).
3) Test for the conditioning effects of demographic variables on the effects of the experimental condition.

In Wave 2 all respondents were presented with the general question without the knowledge questions to see if the effects found in Wave 1 (if any) could still be detected 2-3 weeks later. If this were the case, one might expect the differences between conditions (forms) 1 and 2 to have lessened because all the respondents in

these conditions were confronted with the knowledge questions. Assuming that the knowledge questions would actually affect responses to the general question in Wave 1, the following would also be examined:

1) Changes in political interest.
2) The effects of experimental condition in study 1 on changes in political interest (i.e., is it possible that the context in the first questionnnaire affects responses in the second questionnaire administered a fortnight later?).

Experiment 2 - The most important national issues

In many respects the second experiment, concerning the most important national issues, can be regarded as parallel to the research that has been done on open vs. closed forms of questions. One of the main arguments of the superiority of open questions is that specific closed alternatives will influence respondents and that therefore the open ended questions will give a more valid picture of respondent choice because respondents must produce an answer themselves (Bradburn and Sudman, 1979; Converse and Presser, 1986). Questions generally asked in an open form are questions that involve multiple nominal responses to broad inquiries about values and problems. Such questions are often closed for practical reasons. Hence, it is of immense importance to survey researchers to be aware of how the form can direct responses to such questions. A number of experiments on open vs. closed question format have revealed significant and substantively important differences in marginal distributions between open and closed forms (Belson and Duncan, 1962; Bradburn and Sudman, 1979; Dohrenwend, 1965; Marquis, Marshall, and Oskamp, 1972; Rugg and Cantril, 1944; Schuman and Presser, 1981). In this experiment, however, the question was not closed, but a couple of examples of issues were provided in the preamble to the question. Comparisons of 'complete' lists and lists omitting certain alternatives but adding an explicit 'other' category have shown that the omitted alternatives are mentioned less frequently as part of the 'other' category

than when they are included in the checklist (Lindzey and Guest, 1951; Belson and Duncan, 1962). This effect can be argued to be related to the problem of acquiescence, i.e., respondents agree with the interviewer rather than investing cognitive effort in searching for 'their own opinion'. Acquiescence has been shown to be dependent on respondents' education (Lenski and Leggett, 1960; Campbell, Converse, Miller, and Stokes, 1960; Carr, 1971; Schuman and Presser, 1981). Hence, one would expect to find an interaction between the effects of prompting and respondents' education. The focus of this experiment was on the effects of providing respondents with incomplete lists of possible responses. How does it affect responses to the open ended question 'Which issues of national importance are you most concerned about these days?', to give two examples of such issues?

Form 1

Issues such as the Albert's affair[4] and discussions about declaring the Nordic countries free of nuclear weapons are much talked about these days. Which issues of national importance are you most concerned about these days?

Form 2

Issues such as inflation and industrial disputes are much talked about these days. Which issues of national importance are you most concerned about these days?

Form 3

Which issues of national importance are you most concerned about these days?

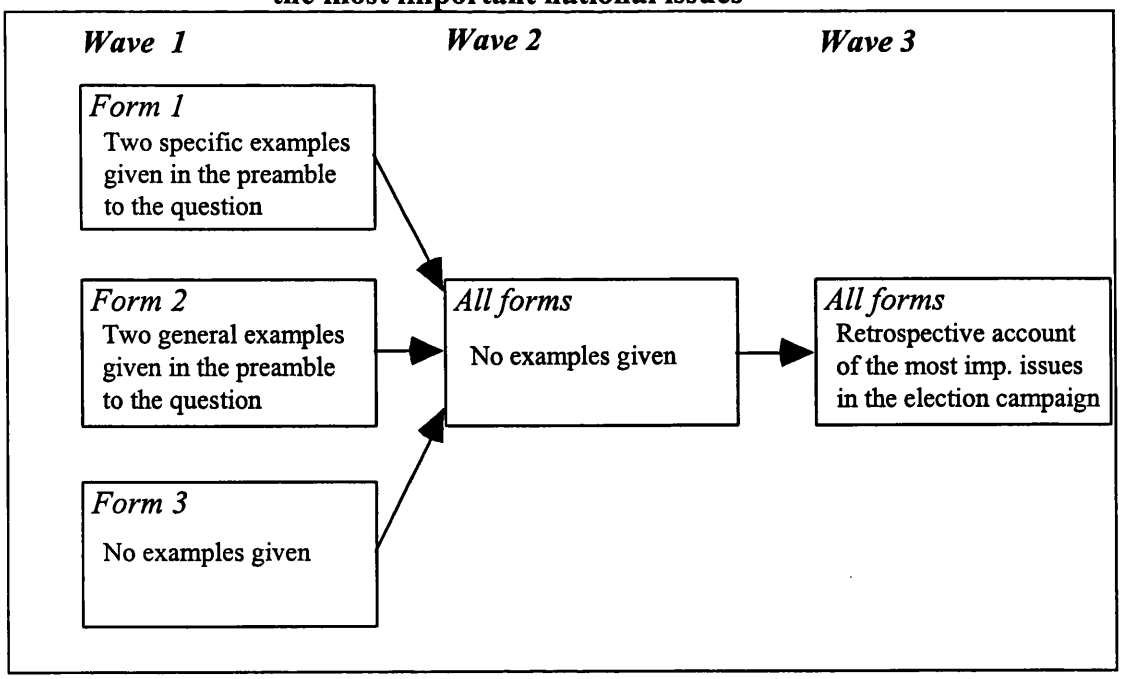
---

[4] The Minister of Industry was forced to resign because of suspected tax fraud. This was made public a couple of days before the commencement of Wave 1 and resulted in the establishment of his own political party, which stood for election to parliament.

What the two specific examples, the Albert's affair and discussions about declaring the Nordic countries free of nuclear weapons, have in common is that they constituted the content of many media news and current affairs programmes in the week before the commencement of Wave 1. As such, they were specific to that period (March 1987). The two examples in form 2 are not as specific since they are an inherent part of the general economic situation at all times. These examples were selected on the basis of the pilot study, where these were among the most frequently given responses to the open-ended question.

In Wave 2 all respondents were asked which issues they were most concerned about without being given any examples, and in Wave 3 respondents were asked which issues of national importance they thought had been the most important in the election campaign.

Figure 3.2 **Design of experiment on giving examples in a question about the most important national issues**



The results of the pilot study and various studies on acquiescence using open vs. closed question format give reason to suspect that the effects of prompting are smaller for some parts of the population than for others, in particular for more educated as against less educated respondents. That is, the least educated people are more likely to consent to the examples given as those issues that they are most concerned about.

The major problem in the analysis of this experiment is deciding how to code the responses to such a question that involves multiple nominal responses (Respondents were asked to mention the three most important national issues). The analysis involved a simple examination of percentage differences and a more refined analysis of the examples given, although most of it was based on three categories, i.e., the specific examples, the general examples, and other issues.

Experiment 3 - Context effects on attitudes towards abortion and declaring the Nordic countries free of nuclear weapons

This experiment was based on experiments reported by Tourangeau and Rasinski (1986), who found that it was possible to increase or decrease the probability of respondents giving a favourable response to an attitude question by asking them if they agreed or disagreed with assertions that were either pro- or anti-attitudinal.

The first two waves were used to obtain base rate data and measures of strength and ambivalence of attitudes towards abortion and declaring the Nordic countries free of nuclear weapons. In Wave 1 respondents only received the questions about attitudes towards abortion and questions aimed at measuring the strength of their attitude, - since it has been shown that respondents with mixed views are more susceptible to the influence of context than are partisan respondents (Tourangeau and Rasinski, 1986; Schuman and Presser, 1981).

In Wave 2 the question about abortion was replaced with a question about attitudes towards nuclear weapons, and again respondents were presented with questions to measure the strength and ambivalence of the attitude.

Finally in Wave 3 the sample was divided into four subsamples. One half was asked about attitudes towards abortion, and the other half about attitudes towards a nuclear-weapon-free North. The attitude questions were preceded either by two 'pro-attitude' agree-disagree statements, or by two 'anti-attitude' statements. The context items were intended to push respondents in a favourable or unfavourable direction. For abortion, the pro context items concerned women's rights, the anti items concerned traditional values. For the nuclear-free North, the pro items concerned the threat of nuclear war, the anti items concerned the threat of Soviet domination (an issue at the time). The design was as follows (see also figure 3.3):

Wave 1

'Some people are very certain about their feelings about when legal abortions should be permitted. Other people see this issue as a difficult one to reach a decision on. Would you say that you are more like those who are very certain, or that you are more like those who see this issue as a difficult one to reach a decision on?' → 'How strong are your feelings about the topic of abortion?' → 'Do you favour or oppose abortion on demand?'

Wave 2

'Do you favour or oppose declaring the Nordic countries free of nuclear weapons?' → 'How strongly do you feel about the issue of nuclear weapons?'.

Wave 3

Form 1: Pro-abortion context:

'Women should stay at home and leave running the country up to men'. (agree - disagree, 5 point scale) → 'Even for such jobs as police officers, women should be evaluated on the basis of their individual qualifications rather than their sex'. → 'Do you favour or oppose abortion on demand?'

.

Form 2: Anti-abortion context

'The trouble with modern society is that it is too easy not to take responsibility for your actions.' → 'It is wrong for a married person to have sexual relations with someone other than the marriage partner'. → 'Do you favour or oppose abortion on demand?'.

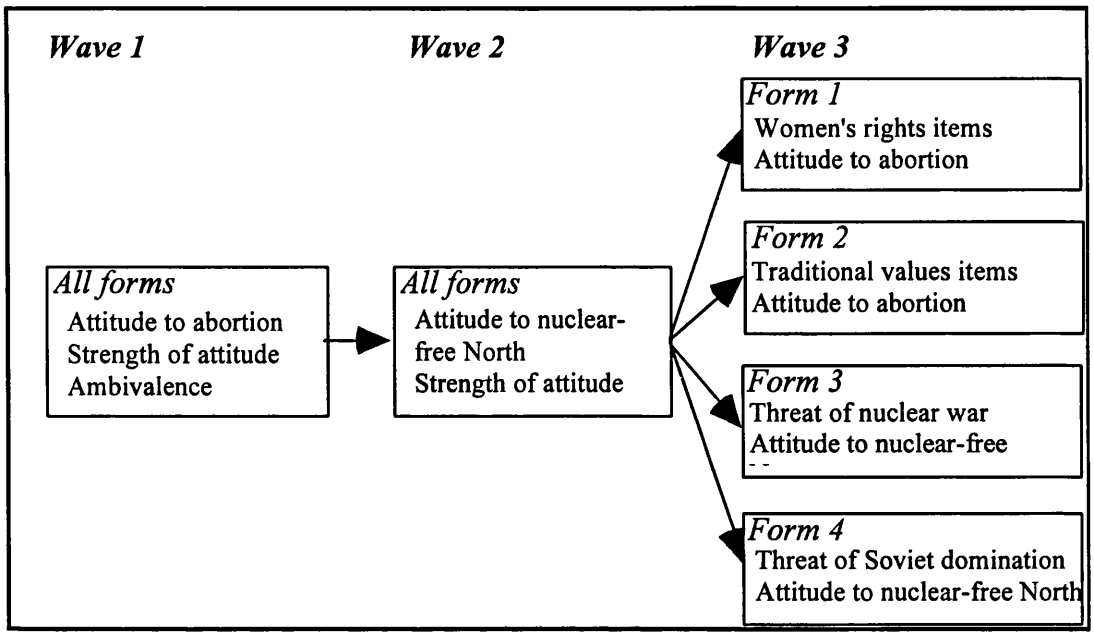
Form 3 :Pro-nuclear free zone context

'Increasing the number of nuclear weapons elevates the danger of a nuclear war.' → 'The only sensible way to prevent a nuclear war is to eliminate all nuclear weapons.' → 'Do you favour or oppose declaring the Nordic countries free of nuclear weapons?' .

Form 4: Anti-nuclear free zone context

'Unilateral elimination of British nuclear weapons would increase the Soviet Union's military superiority.' → 'Closing down the NATO control stations in Iceland and Greenland would lead to total domination of the Soviet nuclear fleet in the north Atlantic.' → 'Do you favour or oppose declaring the Nordic countries free of nuclear weapons?'.

Figure 3.3 **Design of experiment on context effects on attitudes towards abortion and attitudes towards declaring the Nordic countries free of nuclear weapons**



The analysis of the experiment on attitudes towards abortion included the following variables: 1) target item (attitude, forms 1 and 2 in Wave 3); 2) base-rate data (attitude, Wave 1); 3) context items (pro or anti); 4) strength of attitude; 5) ambivalence of attitude.

What is of major interest here is to see whether responses to the attitude question shift as a result of different contexts. The hypothesis is that respondents presented with the pro questions (i.e., concerning women's rights) will give responses more in favour of unrestricted legal abortions than will respondents given the anti items (i.e., concerning traditional values). To analyse the effects of the context, strength of attitude and demographic variables (gender, age and education) general log-linear and logit analysis was used.

The design and hypotheses of the experiment concerning attitudes towards declaring the Nordic countries free of nuclear weapons were the same as for the attitudes

towards abortion, but the base-rate data and evaluation of strength of attitude were collected in Wave 2 in this case. Hence, the analysis was identical.

Think-aloud experiments

In an attempt to identify the major steps involved in answering survey questions and to help interpret the results from the split-ballot experiments a few qualitative interviews were carried out. The protocol technique is a method that has been used to learn about cognitive strategies. Cognitive psychologists have found this method useful for understanding how people solve intellectual problems (Ericsson and Simon, 1980; 1984) and what kind of strategies people use to retrieve personal information such as number of visits to the doctor in the past twelve months (Loftus, 1984). Bishop (1986; 1992) has employed this method to try to explain why the failure to answer political knowledge questions decreases the probability of respondents saying that they follow what is going on in government and public affairs 'most of the time'. In the protocol method, subjects are interviewed face-to-face and asked to think aloud while they answer the survey questions. The verbalizations produced in such interviews, the protocols, are then transcribed and content analysed. Bishop (1986; 1992) not only asked respondents to think aloud while answering the questions but also asked them to give a retrospective report of what had been going through their mind at the time of answering. This after-the-fact method has been criticized by researchers such as Ericsson and Simon, (1984), Loftus, (1984), and Nisbett and Ross, (1980) on the grounds that when asked to describe how they arrived at a particular answer people do not give the 'true' reasons for their behaviour but provide rationalizations that they believe should have been appropriate. However, people are not used to thinking aloud while answering questions and may find it both difficult and awkward. Hence, Bishop's example was followed and respondents asked to give a retrospective account of what they had been thinking about.

Seventeen first year students in the Faculty of Social Sciences, University of Iceland, were divided into four different groups. All respondents were asked the general question about their interest in politics and about their attitude towards abortion on demand. Conditions within the four groups were varied with respect to whether or not the two political knowledge questions were placed before or after the interest question and whether the abortion question was preceded by two context items concerning women's rights or traditional values. The questions were the following:

A. Do you know who is the Speaker of the plenary session of both houses of Parliament?

B. Do you know which minister is responsible for the administration of the Statistical Bureau of Iceland?

C. Some people seem to follow what is going on in government and public affairs most of the time, whether there is an election going on or not. Would you say that you follow what is going on in government and public affairs most of the time, some of the time, only now and then or hardly at all?

D. The trouble with modern society is that it is too easy not to take responsibility for your actions.

E. It is wrong for a married person to have sex with someone other than the marriage partner.

F. Do you favour or oppose abortion on demand?

G. Women should stay at home and leave running the country up to men.

H. Even for such jobs as police officers, women should be evaluated on the basis of their individual qualifications rather than their sex.

The order of the questions in the four groups is shown in table 3.1.

Table 3.1 Design of think-aloud experiments

Group 1.1.	Group 1.2.	Group 2.1.	Group 2.2.
A	A	C	C
B	B	A	A
C	C	B	B
What do you remember from answering these three questions?			
D	G	D	G
E	H	E	H
F	F	F	F
What do you remember from answering these three questions?			

All respondents got the same instructions. They were instructed to think aloud while they answered the six questions. To practice they were asked to think of twenty different animals and to say how many windows there were/are in their parents' house. After the subjects had answered the three questions concerning politics they were asked to give a retrospective account of what they had been thinking while they answered the questions. Again, after answering the abortion question and the relevant context items, subjects were asked what they remembered from answering these questions. The instructions were adapted from Bishop (1986), but he based them on suggestions by Ericsson and Simon (1984). The instructions were as follows:

> In this interview we are interested in what you think about when you answer some questions that I am going to ask you. In order to do this, I am going to ask you to *think aloud* as you answer the question. What I mean by think aloud is that I want you to tell me *everything* you are thinking from the time you first hear the question until you give me an answer. I would like you to talk aloud *constantly* from the time I ask the question until you have given your answer to the question. I don't want you to try to plan out what you say or try to explain to me what you are saying. Just act as if you are alone in the room speaking to yourself. It is important that you keep talking. If you are silent for any long period of time I will ask you to talk. Do you understand what I want you to do?

Good, now we will begin with some practice questions: 'How many windows are/were there in your parents' house?'.

Good, now I want to see how much you can remember about what you were thinking from the time I asked you the question until you gave the answer. We are interested in what you actually can *remember* rather than what you think you must have thought. If possible, I would like you to tell me about your memories in the sequence in which they occurred while you were answering the question. Please tell me if you are uncertain about any of your memories. I don't want you to work on counting the windows again, just report all that you can remember about your thinking. Any questions? Here is the next practice question:

'Name 20 animals'. Now tell me all that you can remember about your thinking. Good, now keep thinking out loud as I ask you some more questions.

The protocols were content analysed to search for possible explanations of why answers to the political interest question and attitudes towards abortion were so heavily influenced by the preceding questions. A traditional method of content analysis was used (cf. Glaser and Strauss, 1967; Miles and Huberman, 1984; Strauss, 1987). First the data set is searched for themes, analytical categories developed and the data indexed accordingly. Counts and examples from the protocols are used to display the results.

3.3 Sample and response rate

The sample consisted of 1500 people randomly selected from the National Register of Iceland. These 1500 people were then randomly assigned to three subsamples. Trained interviewers from the Social Science Research Institute, University of Iceland, carried out the telephone interviews.

Wave 1 was carried out in 8 days, 27th of March through the 3rd of April, 1987. A total of 1042 people answered the questionnaire, or 69.5% of the sample; 13.4% of

the sample refused to answer (201). The remaining 17.1% were abroad, deceased, absent from home (i.e., not expected before the 3rd of April and could not be contacted where they were), ill, or could not be found. A total of 1010 people were willing to participate in Wave 2, but a few of these later refused to answer or were absent from home on the three days when the interviews took place, i.e., 18th, 20th and 21st of April. A total of 892 responses were collected in Wave 2, that is 86% of respondents in Wave 1 answered, or 59.5% of the original sample. A total of 873 were willing to take part in the third and final wave but 834, or only 55.6% of the sample completed all the three parts (93.5% of respondents in Wave 2 answered the questionnaire in Wave 3).

3.4 Method of analysis

The form, order, or context of the questions was the experimental factor and was treated as the independent variable. Responses to the question provide the categories of the dependent variable. Most of the comparisons between different experimental conditions were done by cross-classifying the data, that is by presenting the data in simple bivariate tables. These tables were tested for statistical significance using Pearson's chi-square with probabilities evaluated as two-tailed. A probability of less than .10 was ordinarily regarded as borderline, $p<.05$ as significant, and $p<.01$ as highly significant.

Since context and order effects are not necessarily the same for all parts of the population, methods for testing for associations in two or more tables were also required. Cross-tabulating the data and computing a chi-square test of independence for each subtable does not usually result in a systematic evaluation of the relationship among the variables. The classical chi-square approach also does not provide

estimates of the effects of the variables on each other and its application to tables with more than two variables is complicated.

A special class of statistical techniques, called log-linear models, has been formulated for the analysis of categorical data (cf. Knoke and Burke, 1980; Goodman and Magidson, 1978; O'Muircheartaigh and Payne, 1977; Bishop, Fienberg and Holland, 1975; Fingleton, 1984; Gilbert, 1994). These models are useful for uncovering the potentially complex relationships among the variables in a multiway cross-tabulation. In the general log-linear model all variables that are used for classification are independent variables and the number of cases in a cell of the cross-tabulation is the dependent variable. This method will be employed to unravel the associations among more than two variables.

The SPSS computer programme was used for all analyses. In some instances the target variable was treated as a dependent variable and a special case of the log-linear model, the logit model was employed. In the logit model the analysis is not focussed on the expected cell frequencies, but rather on the odds of the expected cell frequencies for the dependent variable. This analysis is similar to regression analysis and the variable of interest is taken conceptually as dependent upon variation induced by the other variables (Goodman and Magidson, 1978).

The background variables used in the analyses were sex, education and age. Data from the experiments on political interest and attitudes towards abortion and nuclear weapons were analysed by using logit modelling. Hence, the target variables were dichotomised. In order to find the model that best described the data, a hierarchy of the following four models was fitted and the results shown in tables:

1) A model of independence, i.e., answers to the target question are independent of experimental condition, age, education, and sex.

2) A model with all main effects, that is, all the independent variables affect answers to the target question, but their effect is not such that it depends on the level of any of the other explanatory variables.
3) All two-way interactions, i.e., the effect of every explanatory variable depends on the level of the other variables.
4) All three-way interactions, i.e., the effect of every pair of independent variables depends on the level of the third variable.

In addition significance tests for two and three-way interactions are displayed in tables. Statistics shown for the final (best) model are: observed and expected frequencies, standardized residuals, parameter estimates, log odds, odds, predicted and observed probability. The parameter estimates in the tables are deviations from the overall effect. The log-odds parameter for the target variable indicates the partition of respondents between the two categories (for example favour - oppose). The other log odd parameters show the increase or decrease in the log-odds ratio associated with each category of the relevant variable. The odds, on the other hand, do not show an increase or decrease, but are the actual odds that a respondent in a particular category of an independent variable gave a particular response to the target question, for example the odds that a woman would favour abortion on demand.

4

The effect of knowledge questions on political interest

4.1 Introduction

Bishop, Oldendick and Tuchfarber (1982b) found that when respondents were asked about how closely they follow what is going on in government and public affairs immediately after, rather than just before, a difficult pair of questions about what they knew about their congressman, they were much less likely to say that they followed what was going on most of the time. The general question they employed has been used in the American National Election Studies as an indicator of the electorate's interest in public affairs, and thus it is important that the context in which this question is asked is not confounded with true changes in interest. Bishop, Oldendick and Tuchfarber (1984b) found that this context effect could not be eliminated by interposing a buffer of unrelated questions.

Bishop (1987) claims that these results support the view of Wyer and Hartwick (1980) that the answers people give to survey questions are in large part the product of a 'conditional inference process'. The respondent 'searches only until he encounters a piece of information (i.e., another proposition) that he considers relevant, and bases his judgement primarily on a) the implications of it being true, and b) the implications of it being false, without taking into account other information that may also bear on the validity of the target proposition' (pp. 244-245). Hence, it is more the perceived relevance of the information that comes to mind that will determine the inferences a respondent will make in giving an answer, rather than the recency of the information. However, recency may also play a

significant role through its effect on the salience of the proposition. On the basis of this reasoning Bishop (1987, p. 182) suggests that the effects of the knowledge questions 'will last until the respondent has an experience that changes his or her self-perception, either during the interview or afterwards.' With reference to Bem's (1978) self-perception theory, Bishop claims that in the process of measuring people's self-perceptions, we change those very same perceptions, 'and perhaps their behaviour too, in some enduring manner' (Bishop, 1987, p. 192).

4.2 Effect of question order on responses to a general question concerning interest in politics

Table 4.2.1 shows the relation between responses to the general question : 'Some people seem to follow what's going on in government and public affairs most of the time, whether there's an election going on or not. Others aren't that interested. Would you say you follow what's going on in government and public affairs most of the time, some of the time, only now and then, or hardly at all?'; and the order of this question and the two knowledge questions: 'Do you happen to know who is the Speaker of the plenary session of both houses of Parliament? (IF yes): What is his name?'; and 'Do you happen to know which minister is responsible for the administration of the Statistical Bureau of Iceland? (IF yes): Which minister is it?'.

Table 4.2.1. Political interest by order of questions

	Order of questions			
	interest knowledge	knowledge interest	interest only	total
most of the time	56.1%	45.9%	55.5%	52.4%
some of the time	31.9	31.3	31.0	31.4
only now and then	9.7	17.1	10.9	12.6
never	2.3	5.7	2.7	3.6
Total (n)	351	351	339	1041

χ^2=20.12; df=6; p=.01 Size of effect (most of the time): (56.1+55.5)/2-45.9=9.9%

As predicted, there were no apparent differences between the group that answered the interest question before the knowledge questions and the control group in table 4.2.1, but respondents in the group that answered the knowledge questions before the interest question reported following politics less frequently than did respondents in the other two groups. The order of the knowledge questions and the public affairs question had a significant effect on responses to the public affairs question (χ^2=20.12 p=.01 n=1041). Although a large proportion of the respondents who were asked the knowledge questions before the interest question were obviously affected by the context in such a way that they reported following what was going on in government and public affairs less frequently, than they would have done if they had not been asked the knowledge questions, there was still a larger proportion that was not affected by the context. Bishop (1987) has suggested that answers to the interest question may depend more upon the perceived *relevance* of the information that comes to mind, than its *recency*. He claims that some respondents disregard the information (in this case that they did not know who the Speaker of the plenary session of both houses of Parliament was and which minister was responsible for the Statistical Bureau) because 'they know from previous experience that they do follow what's going on "most of the time"' (p. 181). Hence, it is interesting to try to identify how respondents who perceived this context as relevant differ from those who disregarded it as irrelevant. Table 4.2.2 shows the context effect for men and women separately. As can be seen in the table, women generally did not follow politics as often as men. Both men and women appeared to have been influenced by the context, although the effect was, unlike that anticipated, substantially larger for men than women, or 13.65% and 7.6%, respectively.

Table 4.2.2 Effect of question order on political interest by sex

	Male				*Female*			
	interest knowl.	knowl. interest	interest only	total	interest knowl.	knowl. interest	interest only	total
most of the time	65.2%	54.3%	70.7%	63.0%	46.5%	36.2%	41.1%	41.3%
some of the time	23.8	25.5	22.0	23.8	40.6	38.0	39.4	39.4
only now and then	11.0	20.2	7.3	13.1	12.9	25.8	19.4	19.3
Total (n)	181	188	164	533	170	163	175	508

χ^2=16.442; df=4; p=.01
Size of effect (65.2+70.7)/2-54.3=13.65%

χ^2=9.36; df=4; p=.05
(46.5+41.1)/2-36.2=7.6%

Age and education of respondents have often been believed to be associated with attitude stability although there is no full agreement about the direction of the relationship between age and attitude stability or education and attitude stability(cf.Glenn, 1980; Sears, 1981, 1986). These variables might be more likely to help in distinguishing between those respondents who are affected by the context and those who are not. Table 4.2.3 depicts the effect of the question order within three different age groups (18-30, 31-50, and 51-70).

Table 4.2.3 Effect of question order on political interest by age

	Order of questions			
	interest knowledge	knowledge interest	interest only	total
18-30 years				
most of the time	42.7%	31.1%	45.0%	40.0%
some of the time	39.3	39.8	32.5	37.1
only now and then/never	17.9	29.1	22.5	22.9
Total (n)	117	103	120	340

χ^2=7.07; df=4; p=.13; Size of effect (most of the time): (42.7+45.0)/2-31.1=12.75%

table continued on next page

Table 4.2.3 Effect of question order on political interest by age - continued

	Order of questions			
	interest knowledge	knowledge interest	interest only	total
31-50years				
most of the time	60.6	49.4	61.2	56.7
some of the time	30.6	27.7	31.3	29.8
only now and then/never	8.8	22.9	7.5	13.5
Total (n)	160	166	134	460

χ^2=20.02; df=4; p=.001; Size of effect (most of the time): (60.6+61.2)/2-49.4=11.5%

51-70years				
most of the time	67.6	57.3	61.2	61.8
some of the time	23.0	28.0	28.2	26.6
only now and then/never	9.5	14.6	10.6	11.6
Total (n)	74	82	85	241

χ^2=2.20; df=4; p=.70; Size of effect (most of the time): (67.6+61.2)/2-57.3=7.1%

Table 4.2.3 reveals interesting differences between the age groups. The only respondents that seemed to be significantly affected by the context were those aged 31-50. This is rather surprising, since one would expect the youngest respondents to be the most susceptible to the different contexts. An explanation for this might be that the youngest respondents were generally less interested in politics than the older respondents. Hence, collapsing the two response categories 'never' and 'only now and then' for the youngest respondents leads to a loss in statistical significance. The effect was found to be significant when these categories were not collapsed (χ^2=12.5 df=6 p=.0517 n=340). Thus, although the order effect is more statistically significant for respondents between 31 and 50 years of age, it was also significant for the youngest respondents. Despite the greater statistical significance of the context effect for respondents aged 31 to 50 than for those 18-30 years old, the size of the effect

was greater for the younger respondents, i.e., 12.75% vs. 11.5%. Respondents aged 51-70 show a trend in the predicted direction, but this trend did not reach statistical significance, and the size of the effect was only 7.1%.

The conditioning effects of education of respondents are presented in table 4.2.4.

Table 4.2.4 Effect of question order on political interest by education

	Compulsory education				*More than compulsory education*			
	interest knowl.	knowl. interest	interest only	total	interest knowl.	knowl. interest	interest only	total
most of the time	48.9%	34.1%	54.9%	46.2%	60.6%	53.5%	56.4%	56.8%
some of the time	36.5	33.3	27.5	32.4	29.1	30.2	33.3	30.8
only now and then	14.6	32.6	17.6	21.4	10.3	16.3	10.3	12.4
Total (n)	137	132	142	411	213	215	195	623
χ^2=20.17; df=4; p=.01					χ^2=5.66; df=4; p=.23			
Size of effect (48.9+54.9)/2-34.1=17.8%					(60.6+56.4)/2-53.5=5.0%			

As table 4.2.4 shows, the order effect was large (17.8%) and highly significant for respondents with only compulsory education, but was small (5%) and not significant for respondents with more than compulsory education.

4.3 Logit analysis of political interest in Wave 1

To facilitate interpretation of the logit models the political question was coded into only two categories. Because the majority of respondents reported following what goes on in government and public affairs 'most of the time', responses to the political question were coded into the two categories 'some of the time or less', and 'most of the time'.

In order to find the model that best describes the data, a hierarchy of the following four models was fitted:

1) A model of independence, i.e., answers to the political question are independent of the levels of the variables order of questions, age, education, and sex.

2) A model with all main effects, that is, all the independent variables affect answers to the political question, but their effect is not such that it depends on the level of any of the other explanatory variables.

3) All two-way interactions, i.e., the effect of every explanatory variable depends on the level of the other variables.

4) All three-way interactions, i.e., the effect of every pair of independent variables depends on the level of the third variable.

Table 4.3.1 shows the models that were fitted, the lambda parameters included in every model, the likelihood ratio chi-square, the degrees of freedom and the probability of the models.

Table 4.3.1 Models for political interest with order, sex, age and education as explanatory variables

Model	Lambda parameters included in the model*	Chi-square	DF	p
1. Independence	(P)	142.05346	35	.000
2. Main effects	(P)(PO)(PA)(PE)(PS)	33.87219	29	.244
3. Two-way interactions	(P)(PO)(PA)(PE)(PS) (POA)(POE)(POS)(PAE) (PAS)(PES)	13.79058	16	.614
4. Three-way interactions	(P)(PO)(PA)(PE)(PS) (POA)(POE)(POS)(PAE) (PAS)(PES)(POAE)(POAS) (POES)(PAES)	2.94292	4	.567

* P=political question O=order of questions A=age of respondent
E=education of respondent S=sex of respondent

Since adding the three-way interactions to model 3 does not substantially improve the fit and both models 2 and 3 are statistically significant, the final model was searched for between these two. First, in order to test whether all the main effects were statistically significant, one effect at a time was deleted from model 2, the main effects model. The results, which imply that all the explanatory variables have a significant effect on answers to the political question, are displayed in table 4.3.2.

Table 4.3.2 **Test for main effects of sex, education, age, and question order on political interest**

Effect deleted from main effects model in table 4.3.1.	Lambda parameters included in the model	Chi-square	DF	p	Conditional Chi-square	DF	p
Sex	(P)(PO)(PA)(PE)	77.52711	30	.000	43.65492	1	.000
Education	(P)(PO)(PA)(PS)	44.77452	30	.041	10.90233	1	.001
Age	(P)(PO)(PE)(PS)	75.88729	31	.000	42.01510	2	.000
Order	(P)(PA)(PE)(PS)	47.75592	31	.028	13.88373	2	.001

Table 4.3.2 shows the conditional chi-square obtained by comparing the models with model 2 in table 4.3.1.

In order to test whether all of the two-way interactions were statistically significant, one interaction at a time was added to model 2 in table 4.3.1 (the main effects model). The contribution of each of the two-way interactions can be seen in table 4.3.3.

Table 4.3.3 Test for two-way interactions between order, age, sex, and education

Parameters included in the model - Two way interaction	Chi-square	DF	p	Conditional chi-square	DF	p
(P)(PO)(PA)(PE)(PS) (POA) - order x age	32.58614	25	.142	1.28605	4	.863
(P)(PO)(PA)(PE)(PS) (POE) - order x education	27.76045	27	.423	6.11174	2	.047
(P)(PO)(PA)(PE)(PS) (POS) - order x sex	31.39909	27	.255	2.47310	2	.291
(P)(PO)(PA)(PE)(PS) (PAE) - age x education	30.89152	27	.276	2.98067	2	.225
(P)(PO)(PA)(PE)(PS) (PAS) - age x sex	29.02379	27	.360	4.84840	2	.088
(P)(PO)(PA)(PE)(PS) (PES) - education x sex	33.44127	28	.220	0.43092	1	.512

Only one of the two-way interactions had a significant effect on responses to the political question, i.e., the interaction between order and education. The interaction between age and sex also reached borderline significance. Hence the best model has the following parameters: expected log odds for f_{ijkl} = $2(\lambda+\lambda_i^O+\lambda_j^A+\lambda_k^E+\lambda_l^S+\lambda_{ik}^{OE}+\lambda_{jl}^{AS})$, or the main effects of order, age, education, sex, and the interactions between order and education; and age and sex (Goodness-of-fit: χ^2 =23.58, df=25, p=.544).

Table 4.3.4 shows the observed, the expected frequencies and the standardized residuals for the best model. None of the standardized residuals in the table is larger than 1.96 in absolute value, which suggests that there were no important deviations from the model.

Table 4.3.4 **Observed, (expected) frequencies and standardized residuals for the model with main effects of background variables and order and interactions between order and education; and age and sex**

				Political interest			
ORDER	AGE	EDUCATION	SEX	Some of the time	Standardized residuals	Most of the time	Standardized Residuals
I → K	18-30	compulsory	male	11(11.99)	-.0639	11(10.79)	.0651
I → K	18-30	compulsory	female	14(15.59)	-.4038	6(4.41)	.7597
I → K	18-30	m. th. comp.	male	18(16.14)	.4629	23(24.86)	-.3730
I → K	18-30	m. th. comp.	female	24(23.41)	.1220	10(10.59)	-.1813
I → K	31-50	compulsory	male	10(8.32)	.5815	13(14.68)	-.4379
I → K	31-50	compulsory	female	24(22.33)	.3543	16(17.67)	-.3982
I → K	31-50	m. th. comp.	male	14(14.12)	-.0321	40(39.88)	.0191
I → K	31-50	m. th. comp.	female	15(18.96)	-.9099	28(24.04)	.8082
I → K	51-70	compulsory	male	4(5.33)	-.5759	12(10.67)	.4070
I → K	51-70	compulsory	female	7(7.21)	-.0795	9(8.79)	.0721
I → K	51-70	m. th. comp.	male	6(5.94)	.0230	19(19.06)	-.0129
I → K	51-70	m. th. comp.	female	7(5.42)	.6772	9(10.58)	-.4849
K→ I	18-30	compulsory	male	7(6.88)	.0448	3(3.12)	-.0665
K→ I	18-30	compulsory	female	12(11.47)	.1554	1(1.53)	-.4261
K→ I	18-30	m. th. comp.	male	24(21.03)	.6481	20(22.97)	-.6201
K→ I	18-30	m. th. comp.	female	27(26.50)	.0975	8(8.50)	-.1722
K→ I	31-50	compulsory	male	16(13.11)	.7979	8(10.89)	-.8755
K→ I	31-50	compulsory	female	31(29.87)	.2075	10(11.13)	-.3398
K→ I	31-50	m. th. comp.	male	19(21.98)	-.6351	47(44.02)	.4487
K→ I	31-50	comp.plus	female	17(17.90)	-.2134	17(16.10)	.2251
K→ I	51-70	compulsory	male	9(9.78)	-.2493	10(9.22)	.2567
K→ I	51-70	compulsory	female	12(15.89)	-.9753	13(9.11)	1.2877
K→ I	51-70	m. th. comp.	male	9(6.72)	.8797	13(15.28)	-.5833
K→ I	51-70	m. th. comp.	female	4(5.87)	-.7732	10(8.13)	.6574
control	18-30	compulsory	male	10(8.90)	.3680	10(11.10)	-.3296
control	18-30	compulsory	female	13(13.91)	-.2434	6(5.09)	.4022
control	18-30	m. th. comp.	male	8(13.83)	-1.5684	25(19.17)	1.3324
control	18-30	m. th. comp.	female	35(34.12)	.1513	13(13.88)	-.2371
control	31-50	compulsory	male	2(3.65)	-.8644	10(8.35)	.5717
control	31-50	compulsory	female	20(20.73)	-.1603	22(21.27)	.1582
control	31-50	m. th. comp.	male	16(15.82)	.0461	40(40.18)	-.0289
control	31-50	m. th. comp.	female	14(11.21)	.8323	10(12.79)	-.7794
control	51-70	compulsory	male	4(5.56)	-.6628	16(14.44)	.4114
control	51-70	compulsory	female	15(11.25)	1.1195	14(17.75)	-.8910
control	51-70	m. th. comp.	male	7(5.66)	.5613	15(16.34)	-.3305
control	51-70	m. th. comp.	female	5(4.36)	.3084	7(7.64)	-.2328

By inspecting the parameters in table 4.3.5, one can see how answers to the political question about how closely people follow what is going on in government and public affairs were affected by the explanatory variables, order of questions, age, education, sex and the interactions between order and education, and age and sex.

Table 4.3.5 **Parameter estimates for the best model, odds, and proportion saying they follow what is going on in government and public affairs, 'some of the time or less'**

EFFECT LEVEL	λ-para-meters	Log-odds	Odds	Predicted proportion	Observed proportion
Political interest					
1.Some of the time/never	-.033	-0.065	0.937	0.484	0.474
Political interest by order					
1.Interest->knowledge	-.079	-0.157	0.801	0.445	0.440
2.Knowledge->interest	.196	0.391	1.385	0.581	0.539
3.Control- interest only	-.117	-0.234	0.741	0.426	0.442
Political interest by age					
1.18-30	.319	0.639	1.774	0.640	0.599
2.31-50	-.090	-0.180	0.783	0.439	0.431
3.51-70	-.229	-0.459	0.592	0.372	0.377
Political interest by education					
1.Compulsory only	.121	0.243	1.194	0.544	0.538
2.More than compulsory	-.121	-0.243	0.734	0.424	0.432
Political interest by sex					
1.Male	-.210	-0.421	0.615	0.381	0.367
2.Female	.210	0.421	1.427	0.588	0.586
Political interest by order by education					
1.1. Interest - Compulsory	-.004	-0.007	1.013	0.503	0.511
1.2. Interest -More than compulsory	.004	0.007	0.633	0.387	0.394
2.1. Knowledge - Compulsory	.099	0.197	2.151	0.683	0.659
2.2. Knowledge - More than comp.	-.099	-0.197	0.892	0.471	0.465
3.1. Control - Compulsory	-.095	-0.190	0.782	0.439	0.451
3.2. Control - More than comp.	.095	0.190	0.703	0.413	0.436
Political interest by age by sex					
1.1. 18-30 - Male	-.096	-0.192	0.961	0.490	0.459
1.2. 18-30 - Female	.096	0.192	3.273	0.766	0.740
2.1. 31-50 - Male	.010	0.020	0.524	0.344	0.328
2.2. 31-50 - Female	-.010	-0.020	1.168	0.539	0.540
3.1. 51-70 - Male	.086	0.172	0.526	0.345	0.322
3.2. 51-70 - Female	-.086	-0.172	0.759	0.432	0.446

The parameter estimates in table 4.3.5 are deviations from the overall effect. The negative log-odds parameter for political interest indicates that overall there were fewer people who said they followed what goes on in politics never/some of the time, than most of the time, although the parameter was very close to zero, i.e., the two cells are almost equal, the proportion choosing responses never or some of the

time being .48. The other log odd parameters show the increase or decrease in the log-odds ratio associated with each category of the relevant variable. The odds, on the other hand do not show an increase or decrease but are the actual odds that a respondent in a particular category of an independent variable (across levels of the other independent variables) will have given that response (never or some of the time) to the political question, for example the odds that a respondent in category 1 (Interest->knowledge) of the order variable will have responded never or some of the time to the political question are 2(-.033-.079)=-0.222, $e^{-0.222}$ =0.801. The proportions displayed are the expected proportions of every category of the independent variables with response 1 to the political question (proportion=odds/1+odds), and the observed proportions. The odds and the proportions for the interacting effect of order and education on political interest are the odds and the proportions for all possible combinations of the order and education categories.

Although it is obvious from table 4.3.5 that the male respondents were, generally speaking, more interested in following what goes on in government and public affairs, than were the female respondents, this depended, to a certain extent on the age of the respondents. The relationship between age and interest in politics was much more stable for men, than it was for women. The proportion of men saying they follow what goes on in government and public affairs 'some of the time, or less' changed from .46 (for ages 18-30) to .33 (for 31-50), and finally to .32 for respondents aged 51-70. The comparable figures for women were.74 (18-30), .54 (31-50), and .45 (51-70). Hence, although the male respondents were generally more interested in politics than were the female respondents, the oldest women reported following what goes on in government and public affairs as often as the youngest men.

Finally, respondents with compulsory education only were much more likely to be affected by the order of the questions than respondents with more than compulsory education; the proportion of respondents with compulsory education only and knowledge questions before the interest question who said they follow what goes on never/some of the time was .68 as opposed to .5 for respondents who answered the interest question before the knowledge questions, and .44 for the control group. The comparable figures for respondents with more than compulsory education were .47, .39, and .41.

Table 4.3.6 shows the expected log-odds, odds and proportions giving response 1, for every combination of the explanatory variables.

Table 4.3.6 **Expected log-odds, odds, and proportion of respondents saying they follow what is going on in government and public affairs 'some of the time or less' for every combination of the explanatory variables**

				Political interest: Some of the time or less			
ORDER	AGE	EDUCATION	SEX	Log-odds	Odds	Predicted Proportion	Observed Proportion
I→ K	18-30	compulsory	male	0.180	1.198	0.545	0.500
I→ K	18-30	compulsory	female	1.264	3.540	0.780	0.700
I→ K	18-30	m. th. comp.	male	-0.432	0.649	0.394	0.439
I→ K	18-30	m. th. comp.	female	0.793	2.211	0.689	0.706
I→ K	31-50	compulsory	male	-0.567	0.567	0.362	0.435
I→ K	31-50	compulsory	female	0.234	1.263	0.558	0.600
I→ K	31-50	m. th. comp.	male	-1.038	0.354	0.261	0.259
I→ K	31-50	m. th. comp.	female	-0.237	0.789	0.441	0.349
I→ K	51-70	compulsory	male	-0.694	0.499	0.333	0.250
I→ K	51-70	compulsory	female	-0.197	0.821	0.451	0.438
I→ K	51-70	m. th. comp.	male	-1.165	0.312	0.238	0.240
I→ K	51-70	m. th. comp.	female	-0.668	0.513	0.339	0.438
K→ I	18-30	compulsory	male	0.792	2.208	0.688	0.700
K→ I	18-30	compulsory	female	2.017	7.517	0.883	0.923
K→ I	18-30	m. th. comp.	male	-0.088	0.915	0.478	0.545
K→ I	18-30	m. th. comp.	female	1.137	3.117	0.757	0.771
K→ I	31-50	compulsory	male	0.186	1.204	0.546	0.667
K→ I	31-50	compulsory	female	0.987	2.682	0.728	0.756
K→ I	31-50	m. th. comp.	male	-0.694	0.499	0.333	0.288
K→ I	31-50	comp.plus	female	0.106	1.112	0.527	0.500

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Table 4.3.6 **Expected log-odds, odds, and proportion of respondents saying they follow what is going on in government and public affairs 'some of the time or less' for every combination of the explanatory variables - continued**

				Political interest: Some of the time or less			
ORDER	AGE	EDUCATION	SEX	Log-odds	Odds	Predicted Proportion	Observed Proportion
K→ I	51-70	compulsory	male	0.059	1.061	0.515	0.474
K→ I	51-70	compulsory	female	0.556	1.743	0.635	0.480
K→ I	51-70	m. th. comp.	male	-0.822	0.440	0.305	0.409
K→ I	51-70	m. th. comp.	female	-0.325	0.723	0.420	0.286
control	18-30	compulsory	male	-0.220	0.802	0.445	0.500
control	18-30	compulsory	female	1.005	2.731	0.732	0.684
control	18-30	m. th. comp.	male	-0.326	0.722	0.419	0.242
control	18-30	m. th. comp.	female	0.899	2.457	0.711	0.729
control	31-50	compulsory	male	-0.827	0.437	0.304	0.167
control	31-50	compulsory	female	-0.026	0.975	0.494	0.476
control	31-50	m. th. comp.	male	-0.932	0.394	0.282	0.286
control	31-50	m. th. comp.	female	-0.131	0.877	0.467	0.583
control	51-70	compulsory	male	-0.954	0.385	0.278	0.200
control	51-70	compulsory	female	-0.457	0.633	0.388	0.517
control	51-70	m. th. comp.	male	-1.059	0.347	0.257	0.318
control	51-70	m. th. comp.	female	-0.562	0.570	0.363	0.417

4.4 Logit analysis of effect of knowledge questions on political interest in Wave 1

The above analysis shows that the effect of the order of the questions depended on the education of respondents, but it is quite conceivable that those results are misleading, because, in order to compare the control group with the two experimental groups, a very important variable was left out of this analysis, namely responses to the knowledge questions. Looking at the relation between answers to the knowledge questions and education does not rule out the possibility that the interaction found between order of questions and education was due to different levels of knowledge (table 4.4.1).

Table 4.4.1 Education and answers to the knowledge questions

	Education		
	Compulsory education	More than compulsory education	Total
Both answers correct	8.9%	15.0%	12.6%
Either answer correct	33.7	40.9	38.1
Both answers wrong or DK	57.4	44.2	49.3
Total (n)	270	428	698

χ^2=12.97; df=2; p=.01

If the interaction that was found between order of questions and education was due to more educated respondents not being affected by not knowing the answers to the knowledge questions (as opposed to the fact that the more educated respondents were more likely to know the answers to the questions), one would expect to find an interaction between education and order when controlling for knowledge. In other words, if the interaction was genuine it would not disappear by introducing the knowledge variable into the analysis.

In order to test this, three different models were fitted to the variables political interest in Wave 1, knowledge (coded into three categories, both answers correct, either answer correct, and both answers wrong/don't know), order of the questions, and education. The variables sex and age were left out of the analysis in order to avoid the problem of empty cells. The following three models were fitted to the data:

1) A model of independence
2) A model including all main effects
3) A model with all two-way interactions

Table 4.4.2 shows the goodness-of-fit for the three models.

Table 4.4.2 **Models for political interest with knowledge, order, and, education as explanatory variables**

Model	Lambda parameters included in the model*	Chi-square	DF	p
1. Independence	(P)	98.79917	11	.000
2. Main effects	(P)(PK)(PO)(PE)	7.29867	7	.398
3. Two-way interactions	(P)(PK)(PO)(PE)(PKO)(PKE)(POE)	3.99573	2	.136

* P=political question O=order of questions
K=knowledge questions E=education of respondent

Since the fit of the model with all two-way interactions is not substantially better than the fit of the model with main effects only, it is not likely that any of the two-way interactions was significant, as can in fact be seen in table 4.4.3.

Table 4.4.3 **Test for two-way interactions between knowledge, order of questions, and education**

Two-way interaction added to main effects model in table 4.4.2.	Lambda parameters included in the model	Chi-square	DF	p	Conditional Chi-square	DF	p
Knowledge x order	(P)(PK)(PO)(PE)(PKO)	6.14076	5	.293	1.15791	2	.560
Knowledge x educ.	(P)(PK)(PO)(PE)(PKE)	5.68276	5	.338	1.61591	2	.445
Order x education	(P)(PK)(PO)(PE)(POE)	6.43679	6	.376	0.86188	1	.354

These findings suggest that the interaction between education and order of questions can be explained by the simple fact that respondents with more than compulsory education were more likely to know the answers to the knowledge questions. Table 4.4.4 shows what happens when the main effects of knowledge, order, and education are deleted from model 2 in table 4.4.2, that is, all the variables had a significant

effect on political interest and models without any one of the main effects being unsatisfactory.

Table 4.4.4 Test for main effects of knowledge, order, and education on political interest

Effect deleted from main effects model in table 4.4.2.	Lambda parameters included in the model	Chi-square	DF	p	Conditional Chi-square	DF	p
Education	(P)(PK)(PO)	16.72105	8	.033	9.42238	1	.002
Order	(P)(PK)(PE)	17.62912	8	.024	10.33045	1	.001
Knowledge	(P)(PO)(PE)	75.88458	9	.000	68.58591	2	.000

Hence the best model to describe the relations between the dependent variable (political interest) and the three explanatory variables (knowledge, order and education) is the model with the main effects only. Table 4.4.5. shows the parameter estimates for the best model. As the parameters show, there was a strong correlation between political interest and political knowledge. Just over 80% of respondents who knew the answers to both of the knowledge questions could be expected to follow what goes on in government and public affairs 'most of the time' (predicted proportion 0.19 for 'some of the time' or less), 58% of respondents who knew either answer, and 35% of respondents who did not know the answers. The order of the questions seems to have had a similar effect on respondents whether or not they knew the answers, i.e., approximately 14% fewer respondents said they followed what goes on most of the time if the knowledge questions preceded the question on political interest (34.3% of respondents who answered the interest question first were expected to say they followed what goes on 'some of the time or less' vs. 46.8% of respondents who answered the knowledge questions first).

Table 4.4.5 **λ- Parameters, log-odds, odds, predicted, and actual proportion of respondents saying they follow what is going on in government and public affairs 'some of the time or less', based on a model with main effects of knowledge, order, and education on political interest**

EFFECT LEVEL	λ-para-meters	Log-odds	Odds	Predicted proportion	Observed proportion
Political interest					
1.Some of the time	-.195	-.389	0.678	0.404	0.489
Political interest by knowledge					
1. Both answers correct	-.532	-1.063	0.234	0.190	0.182
2. Either answer correct	.038	.075	0.731	0.422	0.406
3. Both answers wrong/DK	.494	.989	1.821	0.646	0.633
Political interest by order					
1. Interest -> knowledge	-.130	-.261	0.522	0.343	0.440
2. Knowledge -> interest	.130	.261	0.879	0.468	0.539
Political interest by education					
1. Compulsory education only	.128	.255	0.875	0.467	0.583
2. More than compulsory	-.128	-.255	0.525	0.344	0.437

It has been suggested that the magnitude of the context effect would be smaller if less difficult knowledge questions were used, but Bishop et al. (1984, footnote 10, p. 516) predict that varying the level of difficulty of the knowledge questions will not change the underlying process, that is, that respondents would still answer the question about their interest in government and public affairs with respect to their most recent experience rather than the most representative instances of their political knowledge.

Bishop (1987) found that not knowing the answer to *either* of the knowledge questions significantly reduced the likelihood of respondents saying that they followed what was going on in government and public affairs 'most of the time'. Furthermore he found that being able to answer the knowledge questions had no effect on respondents' self-perceptions (p.194). Although Bishop did not find a significant order effect for those respondents who knew both of the answers, he does

not mention whether or not there was a significant interaction between the order of questions and knowledge.

In the present study, much easier knowledge questions were asked: 50.5% of the respondents who were asked the knowledge questions knew one or both of the answers, which gave us the opportunity to examine the effects of knowing or not knowing the answers to the knowledge questions more closely. Without controlling for the knowledge questions (simple cross-tabulation), the context effect due to different sequence of the questions was highly significant (χ^2=20.12 p=.01). When we controlled for answers to the knowledge questions we found that the order effect lost significance for respondents who knew *either* of the answers (χ^2=1.82, p=.40, n=267). At first glance, this seems to support the view that the context effect is less profound when easier knowledge questions are asked. On the other hand, the fact that the order effect was very close to being significant for respondents who knew *both* of the answers (χ^2=5.37, p=.0681 n=88) suggests that something peculiar was going on. Table 4.4.6 shows the observed and expected frequencies and the standardized residuals for the main effects model.

Table 4.4.6 **Observed, (expected) frequencies, and standardized residuals for the model with main effects of order, knowledge and education on political interest**

			Political interest			
ORDER	KNOWLEDGE	EDUCATION	Some of the time	Standardized residuals	Most of the time	Standardized residuals
interest	both correct	compulsory	1(1.70)	-.536	8(7.30)	.259
interest	both correct	more than comp.	4(3.80)	.104	27(27.20)	-.039
interest	either correct	compulsory	24(21.46)	.547	27(29.54)	-.467
interest	either correct	more than comp.	25(24.30)	.143	55(55.70)	-.094
interest	both wrong	compulsory	45(49.61)	-.655	32(27.39)	.881
interest	both wrong	more than comp.	55(53.13)	.256	47(48.87)	-.267
knowledge	both correct	compulsory	7(4.22)	1.352	8(10.78)	-.846
knowledge	both correct	more than comp.	4(6.28)	-.913	29(26.72)	.441
knowledge	either correct	compulsory	19(22.01)	-.642	21(17.99)	.710
knowledge	either correct	more than comp.	40(40.23)	-.036	55(54.77)	.031
knowledge	both wrong	compulsory	61(57.99)	.395	16(19.01)	-.690
knowledge	both wrong	more than comp.	56(56.27)	-.036	31(30.73)	.048

Although none of the residuals in table 4.4.6 is larger than $\pm$ 1.96, thus suggesting that there were no important deviations from the model, it is interesting to see which of the cells has the largest residual. The respondents that were furthest away from the prediction were the respondents in the knowledge→interest condition, who knew the answers to both of the knowledge questions, and had only compulsory education. The predicted proportion for this cell was .28, but the observed proportion is .47 (see table 4.4.7).

Table 4.4.7 **Log-odds, odds, predicted proportion, and observed proportion saying they follow what is going on in government and public affairs, 'some of the time' or less, for the model with main effects of order, knowledge, and education on political interest**

			Political interest: Some of the time or less			
ORDER	KNOWLEDGE	EDUCATION	Log-odds	Odds	Predicted proportion	Observed proportion
interest	both correct	compulsory	-1.458	0.233	0.189	0.111
interest	both correct	more than comp.	-1.969	0.140	0.123	0.129
interest	either correct	compulsory	-0.319	0.727	0.421	0.471
interest	either correct	more than comp.	-0.830	0.436	0.304	0.313
interest	both wrong	compulsory	0.594	1.812	0.644	0.584
interest	both wrong	more than comp.	0.084	1.087	0.521	0.539
knowledge	both correct	compulsory	-0.937	0.392	0.281	0.467
knowledge	both correct	more than comp.	-1.448	0.235	0.190	0.121
knowledge	either correct	compulsory	0.202	1.224	0.550	0.475
knowledge	either correct	more than comp.	-0.309	0.734	0.423	0.421
knowledge	both wrong	compulsory	1.115	3.050	0.753	0.792
knowledge	both wrong	more than comp.	0.605	1.831	0.647	0.644

The results from the logit analysis above suggest that the order of the questions does affect responses to the political question irrespective of other factors, including knowledge. The interaction between order and knowledge was not found to be significant (χ^2=1.16, p>.50), and order was found to have a significant effect (p<.005) independent of knowledge, which seems to imply that respondents were affected by the order of the questions, *whether or not* they knew the answers to the

knowledge questions. For example, only 12.3% of respondents who knew both answers and had more than compulsory education were expected to say they follow what goes on in government and public affairs some of the time or less if they got the public affairs question *before* the knowledge question as opposed to 19% if the public affairs question is placed *after* the knowledge questions. Although these results lead to the conclusion that order of questions affects responses independently of both knowledge and education, it is worth noting that the interaction between order, knowledge and education approached significance (χ^2=4.00, df=2, p=.136).

These divergent results give us ample reason to take a closer look at the effects of the two knowledge questions.

4.5 The effect of the two knowledge questions

The distribution of responses to the two knowledge questions suggests that there are some important differences between the two questions (see table 4.5.1).

Table 4.5.1 Responses to the knowledge questions

1) Do you happen to know who is the Speaker of the plenary session for both houses of Parliament?

	N	%
correct answer	249	35.4
wrong answer	62	8.8
don't know	392	55.8

2) Do you happen to know which minister is responsible for the administration of the Statistical Bureau?

	N	%
correct answer	194	27.6
wrong answer	205	29.2
don't know	304	43.2

To the first question, 8.8% of respondents gave the wrong answer, as opposed to 29.2% to the second, which suggests that respondents were more ready to guess the

answer to the second question, where in fact there were only 11 possible answers, and respondents were not asked to name the minister. Obviously, it is much more difficult to guess the answer to the first question where any one of 63 MPs could in principle have been the Speaker of the plenary session of both houses of Parliament. Being or not being able to answer these questions can hardly be argued to tell us very much about how closely respondents followed what goes on in government and public affairs. The first question may be regarded as the easier of the two, simply because the name of the Speaker of the plenary session of both houses of Parliament is often mentioned in news reports. The relevance of the second question, with respect to political knowledge, is more debatable. More or less, the only time when the media mention which minister is responsible for the Statistical Bureau is when a new government takes over (usually every four years). Hence, because of more obvious relevance, one would expect the first question to have a greater effect on responses to the public affairs question than the second knowledge question. Table 4.5.2 shows the effects of the order of the questions on responses to the public affairs question controlling for the first knowledge question.

Table 4.5.2 **Political interest by order of questions, controlling for responses to the question: 'Do you happen to know who is the Speaker of the plenary session of both houses of Parliament?'**

	Correct answer			*Wrong answer/ don't know*		
	interest knowl.	knowl. interest	total	interest knowl.	knowl. interest	total
most of the time	72.8%	71.0%	71.9%	46.9%	32.2%	39.5%
some of the time	20.8	21.8	21.3	38.1	36.6	37.3
only now and then	6.4	7.3	6.8	15.0	31.3	23.2
Total (n)	125	124	249	226	227	453
χ^2=0.12; df=2; p=.94				χ^2=19.17; df=2; p=.001		
Size of effect 72.8-71.0=1.8%				46.9-32.2=14.7%		

As can be seen in table 4.5.2 there was no order effect for those respondents who knew the answer to the question about the Speaker of the plenary session of both houses of Parliament (χ^2=0.12 p=.94 n=249), but the effect was highly significant for respondents who did not know or gave the wrong answer to the question (χ^2=19.17, p=.001 n=453). This result does indeed support Bem's (1967) self-perception theory, i.e., that respondents who fail to give the correct answer to the knowledge question, will from that failure infer that perhaps they do not follow what is going on in government and public affairs that often, and hence they are less likely to say that they follow what is going on 'most of the time' than are respondents who get the interest question before the knowledge questions.

This result also gives support to cognitive dissonance theory (Festinger, 1957), i.e., not being able to answer the knowledge question leads to a heightened tension state or cognitive dissonance, and in order to reduce this tension the respondent rearranges her/his cognitive world, and, hence reports following what is going on in government and public affairs less frequently than (s)he otherwise would have.

Interestingly enough, the pattern for the second knowledge question was totally different, and would suggest somewhat different interpretations. Table 4.5.3. shows the effects of the order of the questions on the public affairs question, controlling for the second knowledge question about the minister for the Statistical Bureau. There, we can see that the order effect was significant, whether or not respondents knew the answer to the question about the minister for the Statistical Bureau. Self-perception theory does not seem to be a plausible explanation for the effect found here, since the effect was significant although respondents gave the correct answer (the effect was larger for respondents who answered the question correctly, i.e., 13.5% vs. 10.6%). Cognitive dissonance theory, on the other hand, is more difficult to rule out, since the tension might have been caused by the anticipation of more knowledge questions along the same lines, and thus the reduction in reported interest might have been the

result of some sort of a self-protection mechanism (cf. McGuire and Millman, 1965 on forewarning). Bearing in mind how many respondents gave the wrong answer to this question, it is not unlikely that many of the respondents who got the answer right, just guessed, which makes it more likely that a self-protection mechanism is at work. Another explanation might be that most of the respondents who gave the correct answer to the second knowledge question had already failed to answer the first question (106 of the 194 respondents who answered the second question correctly had already failed to answer the first one), or that, in some way or other the effects of the second question were dependent on answers to the first knowledge question.

Table 4.5.3 **Political interest by order of questions, controlling for responses to the question: 'Do you happen to know which minister is responsible for the administration of the Statistical Bureau?'**

	Correct answer			*Wrong answer/ don't know*		
	interest knowl.	knowl. interest	total	interest knowl.	knowl. interest	total
most of the time	70.9%	57.4%	63.4%	51.3%	40.7%	46.3%
some of the time	26.7	25.0	25.8	33.6	34.2	33.9
only now and then	2.3	17.6	10.8	15.1	25.1	19.9
Total (n)	86	108	194	265	243	508
χ^2=11.75; df=2; p=.01				χ^2=9.47; df=2; p=.01		
Size of effect 70.9-57.4=13.5%				51.3-40.7=10.6%		

Table 4.5.4 shows the proportion of respondents who said they followed what goes on in government and public affairs 'most of the time' and answers to the knowledge questions. As can be seen, respondents who could answer the first knowledge question (Speaker of plenary session...), but not the second one (minister for Statistical Bureau) did not seem to be affected by the order of the questions (the size of the effect was -1.2%, i.e., not in the predicted direction). What makes this finding

rather puzzling is the much larger effect (10.4%) among respondents who answered both knowledge questions correctly (χ^2=5.37, p=.068 n=88).

Table 4.5.4 **Effect of knowledge questions on the probability of respondents' saying they follow what is going on 'most of the time'**

	Answers to knowledge questions				
	Both correct	First* question correct	Second** question correct	Both wrong	Total (n)
Interest→Knowledge	87.5%	65.9%	56.5%	44.4%	197
Knowledge→Interest	77.1	67.1	41.7	28.7	161
Size of effect	10.4	-1.2	14.8	15.7	

* Speaker of the plenary session of both houses of Parliament
** Minister for the Statistical Bureau

4.6 Logit analysis of the effects of the two knowledge questions

It was suggested above that an interaction between the two knowledge qustions could be an explanation for the seemingly different relationship between the knowledge questions, the order of questions and political interest. For some reason, the second knowledge question (about the minister for the Statistical Bureau) placed before the interest question reduced the likelihood of respondents' saying that they follow what goes on in government and public affairs, regardless of whether they could answer the question or not. The first question, on the other hand, conditioned the effects of the order of the questions. It is difficult to tell why this was the case but of course, it is possible that responses to the public affairs question were affected by the order of the knowledge questions themselves. The question about the minister for the Statistical Bureau was placed after the question about the Speaker of the plenary session of both houses of Parliament and respondents may have expected more similar questions. In other words, respondents were affected by the order of the questions, whether or not they knew the answer to the question about the minister for

the Statistical Bureau, not because that question was fundamentally different from the question about the Speaker of the plenary session of both houses of Parliament but because they were asked *two* questions of that type. Another possibility is that, because the second question (Statistical Bureau) was found to be more difficult, respondents were affected, regardless of whether or not they knew the answer. It is not possible to distinguish between the alternative explanations without designing new experiments, and in fact these explanations do not clarify why there was one group that was not affected by the order, i.e., respondents who knew the answer to the first but not to the second knowledge question. A simpler and more probable explanation is that respondents who only knew the answer to the first knowledge question differed from other respondents in some important respect, such as age, but it was shown above that the older respondents were less likely to be affected by the order of the questions. As table 4.6.1 shows, respondents who knew the name of the Speaker of the plenary session of both houses of Parliament but not who the minister for the Statistical Bureau was, are significantly older than other respondents.

Table 4.6.1 **Mean age of respondents and answers to knowledge questions**

	Mean	Std. dev.	Total (n)
Both answers correct	41.8	13.4	88
Men	41.1	14.0	68
Women	44.2	11.2	20
Speaker of ... Parliament correct	45.2	12.4	161
Men	44.1	12.7	103
Women	47.1	11.7	58
Minister for Statistical Bureau correct	35.8	12.6	106
Men	35.8	12.5	56
Women	35.8	12.9	50
Both wrong	36.5	13.4	348
Men	36.5	13.5	142
Women	36.6	13.3	206

$F_{3,699}=19.6$; $p=.001$

Education was found to influence the effect of order of questions on political interest, and as table 4.6.2 shows there was a strong relation between education and political knowledge.

Table 4.6.2 Education and answers to knowledge questions

	Comp. education	More than comp. education	Total (n)
Both answers correct	27.3%	72.7%	88
Speaker of ... Parliament correct	36.3	63.8	161
Minister for Statistical Bureau correct	31.1	68.9	106
Both wrong	45.1	54.9	348

χ^2=13.67, df=3, p=.003

Since there was a negative correlation between age and education it is important to include both these variables in the logit analysis. Although it would be interesting to include gender as well it is not possible to include all these variables because there would be a number of empty cells. It is not as important to include sex as the other two variables since it did not mediate the effect of order of questions (see table 4.3.3) although there was a strong relationship between knowledge and sex (χ^2=49.3, df=3, p=.000). Hence the variables included in the analysis were the dependent variable interest in government and public affairs, order of the knowledge and interest questions, the two knowledge questions about the Speaker of the plenary session of both houses of Parliament and the minister for the Statistical Bureau, education of respondents, and finally age (coded into three categories: 18-30, 31-50, 51-70). The five initial models that were fitted are shown in table 4.6.3 (model of independence, model with all main effects, a model with all two-way interactions, a model with all three-way interactions, and a model with all four-way interactions).

The models in tables 4.6.3 do not fit the data well, and the model with all four way interactions shows that there was a significant five-way interaction, that is, the effects of order of questions depended on answers to the two knowledge questions,

education and age of respondents. Hence the saturated model was needed to describe the data adequately.

Table 4.6.3 Models for political interest with order, knowledge questions, education and age as explanatory variables

Model	Lambda parameters included in the model*	Chi-square	DF	p
1. Independence	(P)	166.74	47	.000
2. Main effects	(P)(PO)(PK^1)(PK^2)(PE)(PA)	50.37	41	.150
3. Two-way interactions	(P)(PO)(PK^1)(PK^2)(PE)(PA)(POK^1) (POK^2)(POE)(POA)(PK^{1}K^2)(PK^{1}E) (PK^{1}A)(PK^{2}E)(PK^{2}A)	33.34	27	.186
4. Three-way interactions	(P)(PO)(PK^1)(PK^2)(PE)(PA)(POK^1) (POK^2)(POE)(POA)(PK^{1}K^2)(PK^{1}E) (PK^{1}A)(PK^{2}E)(PK^{2}A)(POK^{1}K^2) (POK^{1}E)(POK^{1}A)(POK^{2}E)(POK^{2}A) (POAE)	20.82	13	.077
5. Four-way interactions	(P)(PO)(PK^1)(PK^2)(PE)(PA)(POK^1) (POK^2)(POE)(POA)(PK^{1}K^2)(PK^{1}E) (PK^{1}A)(PK^{2}E)(PK^{2}A)(POK^{1}K^2) (POK^{1}E)(POK^{1}A)(POK^{2}E)(POK^{2}A) (POAE)(POK^{1}K^{2}E)(POK^{1}K^{2}A) (POK^{1}EA)(POK^{2}EA)(PK^{1}K^{2}EA)	8.82	1	.003

* P=political question O=order of questions K^1=first knowledge question
K^2=second knowledge question E=education of respondent A=age of respondents

Table 4.6.4 shows the odds and the proportion of respondents who said they followed what goes on in government and public affairs 'some of the time or less'. The table also shows the size of the effect for each cell, found by comparing cells in the interest→knowledge group and the knowledge→interest group. For example the effect for 18-30 year olds with compulsory education who knew the answers to both knowledge questions was .501-.250=.250, i.e., 25% more of these respondents said they follow what goes on 'most of the time' when the interest question was preceded by the knowledge questions.

A highly complex attitude structure composed of arguments supporting and counterarguments opposing one's predominant position may be 'naturally inconsistent', depending on which of the arguments will be the most salient at any one time (see Linville, 1982; Millar and Tesser, 1986; Tetlock, 1981, 1986). Tourangeau (1992) argues that attitudes can be perceived of as enduring structures in long-term memory and that they are organised by the same principles as other material in memory. If attitudes can be regarded as a network of propositions, one should be able to hold conflicting beliefs about an issue. If only a small number of the propositions is taken into account when an overall judgement is made (for example when responding to a survey question), one can expect a great deal of instability in attitude responses. A response to a general attitude question (such as support for abortion) may depend on which part of a network, such as the one depicted in figure 1.6, is activated, but the network includes three clusters of ideas: 1) a pro-choice cluster of abstraction (e.g. freedom), facilitating a positive response; 2) a pro-life cluster of abstraction (Catholic church), facilitating a negative response; and 3) a cluster of more concrete ideas relevant to the procedure of an abortion. As Fazio (1989) argues, 'not all attitudes are equal' (p. 159), but he suggests that it may be fruitful to conceptualise the attitude-non-attitude, not as a dichotomy, but as a continuum that focuses upon the accessibility of the attitude from memory. According to Wyer and Hartwick (1980) the accessibility of beliefs is moderated by factors such as the recency (Collins and Loftus, 1975; Wyer and Srull, 1980) and amount of processing (Craik and Lockhart, 1972).

This type of account accommodates conflicting ideas about an issue, which the unidimensional approach is not capable of. That is, one can not have both a positive and a negative attitude at the same time if one assumes that attitudes are unidimensional. Theories like Sherif and Hovland's latitudes of acceptance, oscillation theory and other such theories that see the attitude not as a single point on

the dimension but rather as a range of acceptable positions can assume conflicting ideas, given that the neutral point is included in the range.

Nowak, Vallacher, and Lewenstein (1994) stress the importance of using a dynamical approach to the study of attitudes. Such an approach has a fundamentally different view of attitude stability from the view of the traditional approach. A dynamical systems approach focuses on the analysis of equilibrium behaviour. A system may rest in either a stable or unstable equilibrium. Even a slight external influence may lead to a dramatic change in the behaviour of an unstable equlibrium system, whereas a relatively strong external influence will not significantly influence a stable equilibrium system.

Eiser (1994) postulates one such dynamical systems theory. He attempts to accommodate the 'different kinds' of attitudes within one theory. He proposes that attitudes should be viewed as attractors in a phase-space. 'Thought is a flow through a particular kind of phase space, and the contours of that space undoubtedly influence that flow. The question is whether that flow must be entirely deterministic or whether we can direct it consciously to some extent. If we are to do so, it may be that we require some representation of the structure of our thoughts and memories if we are to loosen the pull they have on us. Perhaps this is what insight or self-awareness means. The effect of this would not be to change the landscape of the part of the attitude space in which we find ourselves but to take us to a different part. Maps can help us to climb mountains, not of course because they make them any flatter, but because they help us find a way up from the valley. It is time for attitude theory to get some new maps' (pp. 216-217). It is not clear which measures are necessary to map an individual's attitude phase-space, nor which factors or variables (moderating variables) make an attitude stable. But Eiser (1994) argues that the difference between his theory and the traditional theories lies in 'what we can expect a theory of attitude to do. Any picture of attitude space can never be more than a

snapshot of a moving thing. As William James (1890) put it, thought is in constant change. Attitudes are a special subclass of thought, and although previous research has treated them as static, they also show fluctuation and movement. The more often a viewpoint is expressed, the more likely it will be to be expressed again. The more often aspects of an issue are seen as related to each other (e.g. through argument), the more closely tied they will be to each other thereafter' (p. 216).

As has been shown above, there are many attitude theories that postulate considerable attitude complexity. Nevertheless, attitude measurement in surveys has generally relied on simple unidimensional measures, often based on only one question. The original attitude scales, such as Thurstone's and Likert's, are based on a number of items, where the attitude can be characterized as the breaking point between rejected and accepted items, and the items are tested for their validity. Such methods are surely too laborious for use in large scale surveys, but it may be argued that the emphasis on parsimony in theory and measurement has led survey researchers (and perhaps some attitude theorists) to neglect the complexity of the attitude construct.

Drawing together the different types of attitudes and factors believed to mediate resistance to change discussed in the theories above, one can divide the attitude concept into four different levels reflecting attitude organisation, ego-involvement and salience. Attitudes at the lowest level are the most susceptible to context, persuasive messages, and are also more likely to show random fluctuations. The higher the level of attitudes, the more resistant to change they are, and the greater their stability in general, but a number of attributes have been proposed to explain which attitudes are consequential and the variable susceptibility of attitudes to persuasive messages. Raden (1985) reviewed a family of such variables, which include the following: polarization or extremity (Fazio and Zanna, 1978; Abelson, 1995; Judd and Brauer, 1995), intensity (Schuman and Presser, 1981), importance

(Krosnick, 1988), certainty (Davidson, Yantis, Norwood and Montano, 1985; Pelham, 1991); direct experience (Regan and Fazio, 1977; Davidson et al, 1985; Abelson, 1986), personal relevance (Howard-Pitney, Borgida, and Omoto, 1986; Petty and Cacioppo, 1986b), interest (Kendall, 1954; Bradburn and Caplovitz, 1965) vested interest (Crano, 1995), knowledge (Wood, 1982; Wilson, Kraft, and Dunn, 1989; Davidson, 1995), and accessibility (Fazio and Williams, 1986; Bassili and Fletcher, 1991), size of latitudes of rejection and noncommitment (Sherif, Sherif, and Nebergall, 1965), and affective-cognitive consistency (Norman, 1975; Chaiken and Baldwin, 1981). These attributes or measures have often been treated as interchangeable with one another. Abelson (1988) uses the term conviction to denote attitude importance. He, and his students, factor analysed a large number of items on attitude conviction and found that conviction was multidimensional. They identified three dimensions as Emotional Commitment, Ego Preoccupation, and Cognitive Elaboration. Krosnick, Boninger, Chuang, Berent and Carnot (1993) came to a similar conclusion when they factor analysed 10 of the above attitude attributes and concluded that these dimensions can not be regarded as 'multiple manifestations of a smaller set of underlying attributes' (p. 1132). Although these attributes are believed to regulate the stability of attitudes, not all of these attributes have been found to regulate the magnitude of context effects. Bishop (1990) and Krosnick and Schuman (1988) did not find a relationship between the size of context effects and attitude importance, intensity, and certainty, but affective-cognitive consistency (Chaiken and Baldwin, 1981) and extremity (Hippler and Schwarz, 1986) seem to exert such regulatory influences. Tourangeau et al. (1989a) and Tourangeau, Rasinski, Bradburn, and D'Andrade (1989b) found an interaction between attitude ambivalence and personal importance, i.e., people holding ambivalent beliefs and who consider the attitude to be highly important are more likely to be influenced by the context.

The four different levels or categories that commonly used attitude terms can be classified into, reflecting differences in proposed stability are:

1) Attitudinal responses that are generated on the spot on the basis of accessible salient beliefs, i.e., non-attitudes (Converse, 1970). One can hardly talk about attitude change at this level, but rather attitude response formation based on the most salient information. Hence such attitudes are likely to be greatly influenced by variables such as different contexts in a survey questionnaire.

2) Attitudes that have some temporal continuity, such as peripheral attitude components (N.H. Anderson, 1959; Lazarsfeld, 1959; Kelman, 1980; Petty and Cacioppo, 1986a; 1986b), or distal attitudes (Abelson, 1986) characterized by low participation or relevance. Attitude change on this level is likely to depend on peripheral cues such as source credibility, attractiveness, and other factors unrelated to the content of the persuasive message.

3) A greater stability is assumed for attitudes at this level, including such terms as basal attitudes (N.H. Anderson, 1959; Lazarsfeld, 1959; Kelman, 1980), central attitudes (Petty and Cacioppo, 1986a; 1986b), or accessible attitudes (Fazio, 1989). This increase in (assumed) stability is explained by such factors as the use of participant scripts, greater personal involvement, more knowledge, social rehearsal, social networking, temporal continuity, and direct experiences (Fazio, Chen, McDonel, and Sherman, 1982; Fazio, Herr, and Olney, 1984). Attitude change is likely to depend on the cogency of the persuasive message (Petty and Cacioppo, 1986b) or on cues that increase the accessibility of a particular aspect.

4) Attitudes that can be classified at the highest level are believed to be relatively immune to external influences. They are often emotional and based on a religious element or an ideology. Terms such as values, emotional attitudes, ideological attitudes, and categorical attitudes are most often used to describe this type of attitude. These attitudes are so strongly held that attitude changes are catastrophic in the sense that when a change is brought about, generally by a large amount of consistent information, it is a drastic change from one extreme view to the completely opposite one (Latané and Nowak, 1994).

The process by which an attitude changes from being a non-attitude to a peripheral one and so on, or whether an attitude has to go through the three lower levels to reach the fourth one to become a categorical attitude or an ideology is by no means clear, but presumably, with increase in involvement, knowledge, etc., an attitude can move up the levels and hence become more resistant to change. If context effects are in fact due to a change in people's attitudes, brought about by the questioning, as has often been suggested, one would expect a decrease in susceptibility to context as one moves up the levels.

1.4 The social nature of context effects

> 'All human communication, not only survey responses, is subject to frame-of-reference effects; and therefore all conclusions drawn from such communications are "biased" in some fashion' (Singer, 1988, p. 576).

Two different approaches to context effects in social surveys can be seen in the literature. The first one, that was the most popular in the 1970s and early '80s, was to view context effects as artifacts or due to imperfections in measurement (cf. Achen, 1975; Davis, 1976; Schuman, 1982). The second approach, that became increasingly

popular in the 1990s is to regard context effects as an integral part of the process of answering questions. These two different perspectives have radically different implications. The artifact perspective regards context effects as errors in measurement, hence ways to avoid context effects should be the focus of research. Several methods have been suggested to control or minimize context effects, for example separating related questions by interposing questions dealing with unrelated issues as buffers, or even randomizing question order (Perreault, 1975). The most common recommendation is that general summary type questions on a particular issue should precede the more specific questions on the same issue (McFarland, 1981). If the researcher wants respondents to bear in mind certain specific aspects of an issue, they are advised to place the specific questions before the general question (see McClendon and O'Brien, 1988).

Attempts to circumvent context effects, instead of trying to shed light on when and how they occur, imply that they are conceived of as artifacts. But, they can only be considered to be artifacts if one ignores the social nature of the interview situation. As Farr (1978) points out, the purely natural science model of experimenting may not be the most appropriate model to apply to human behaviour (cf. Harré and Secord, 1972). What first and foremost characterizes human behaviour and distinguishes it from the objects that are of interest to the natural scientist is the reactivity of the human behaviour. Duval and Wicklund (1972) claim that: 'Reactivity is the basic human response to the knowledge that one is the object of investigation by others. An individual with this knowledge is likely to be in a state of objective self-awareness' (Farr, 1978, p. 301). Most of the artifacts that have been identified in experimental settings can be argued to be a consequence of basic human reactions to the knowledge of being the object of observation (i.e., experimenter effect, demand characteristics, etc.). These artifacts are artifactual only 'if what are inherently social relations, such as those that exist between experimenters and the subjects who participate in their research, are construed by psychologists as being in

fact relations of a *non-social* kind (because in that situation experimenters *think* of themselves as guided by a natural scientific model of experimentation), [and] then it is scarcely surprising if unforeseen side-effects, artifacts, of a social nature emerge; only experimenters, conceptualizing the situation as non-social when it is in fact social, will be surprised' (Farr, 1978, p. 300). Or, as Martin (1984, p. 279) puts it 'survey artifacts represent systematic psychological phenomena that do not exist only in surveys.'

Only by maintaining a purely natural science model can one possibly think of questions in a questionnaire as totally isolated from one another. In an interview we use language to obtain the information we require, and although standardization of particular questions is a useful method to achieve reliability, it, for purely practical reasons can seldom be applied to the questionnaire as a whole. Thus, when asking the same questions in different questionnaires, for the purpose of comparison, one has to be aware of the characteristics that are peculiar to the interview itself. The survey-interview 'is a scientific enterprise on the one hand, and a social encounter on the other' (Dijkstra and van der Zouwen, 1987, p. 200).

Although Bingham and Moore as early as 1924 described the interview as a 'conversation with a purpose' (cited in Cannell and Kahn, 1968), survey researchers have largely ignored the inherently social and co-operative characteristics of the interview situation that the word conversation implies. This neglect can at least in part be blamed on the behaviourists who early in the twentieth century rejected the interview as an appraisal device because of its unreliability. At that time, psychologists were adopting a scientific perspective: 'that of being the detached observer of others' (Farr, 1982, p. 157). Or, as Watson said: 'the behaviorists reached the conclusion that they could no longer be content to work with intangibles and unapproachables. They decided either to give up psychology or else make it a natural science' (Watson, 1924-1925, p. 6). Later on, the behaviourists admitted that a person can observe her/his behaviour to some extent. As they realized that verbal

reports could not be completely avoided in psychological research, they gradually relaxed their original requirement that everything in psychology should be actually observable and retreated to the philosophical demand that everything must be potentially observable (Woodworth, 1931). Hence, the interview was back in use as a research instrument, but emphasis was laid on standardizing the interviewing conditions in order to achieve higher reliability. This is particularly enhanced by specifying the exact wording of the questions to be asked in the interview, specifying the forms and range of behaviour, which may be used to elicit responses, and by using multiple questions for measurement of each concept. In behaviouristic terms, the actual process of interviewing, the speaking of questions and answers, can be thought of as the act of evoking (stimulus) the verbal representations of events, or more exactly eliciting the verbal responses which are really the target of the measurement. The task of the interviewer is merely to get a good verbal 'print' of the respondent's information and to do so 'without getting his own interviewing thumbprints all over it' (Cannell and Kahn, 1968, p. 572). Thus, each question in a questionnaire or an interview was conceived of as a separate stimulus that required a response from the interviewee. In view of this conception of the interviewing process, it is not surprising that most of the methodological research on survey questionnaires that was carried out in the 1940s focussed on one question at a time as an isolated measure of an attitude or some other entity. Although the behavioural approach has led to greater precision and reliability, it has failed to take into account the social characteristics of the interview, the interaction between the interviewer and the interviewee, different states of awareness, or what Mead (1934) calls 'awareness of self as object', and last but not least the conversational or communicational characteristics of the interview, i.e., that the questions are not isolated measures of a particular attribute but are a part of a sequence of questions, the questionnaire as a whole.

When asking the same questions in different questionnaires, for the purpose of comparison, one has to be aware of the characteristics that are peculiar to the interview itself. Having defined the interview as a 'conversation with a purpose' although more formalized than an everyday conversation, one would expect the same basic principles to be operating. In an informal conversation we expect a person to show consistency in her/his speech, and the meaning of any particular sentence can, at least in part, be defined either by the situational context within which the conversation takes place, or by the preceding parts of the person's utterance. The difference between a normal conversation and the survey interview lies mainly in the fact that 'the conversational interaction requires an adequate understanding of the contribution *without* allowing the contributor to tune his or her question to the particular needs of the respondent' (Strack, Schwarz and Wänke, 1991, p. 112). Thus, if one appreciates the social nature of the interview, one is hardly surprised if answers to a particular question are conditioned by answers to previous questions. As Lund (1925) claimed in another context: 'Once we have committed ourselves, we frequently dare not change our position lest we be challenged with our former statements.'

Bearing in mind the definition of the interview as a 'conversation with a purpose', although more formalized than an everyday conversation, one would expect the same basic principle to be in operation. In his article on the conditions governing conversation, Grice (1975) argues that for a conversation to be rational, the participants need to observe a general principle, called the 'Co-operative Principle'. Four major categories fall under this general principle, i.e., Quantity, which requires speakers to be informative although not more informative than the situation requires; Quality, which enjoins speakers to say nothing untruthful; Relation, stressing that the speaker's contribution should be relevant to the ongoing conversation, and Manner. The first three categories relate to what is said, but the last one relates to 'how what is said is to be said' (p. 46). Under this category Grice includes four specific

maxims: 1) avoid obscurity of expression; 2) avoid ambiguity; 3) be brief (avoid unnecessary prolixity); and 4) be orderly – maxims that are not so unlike the general recommendations for writing a survey questionnaire, as they usually stress the need for simplicity, clarity, intelligibility and keeping questions short (Babbie, 1973; Bradburn, 1983; Bradburn and Sudman, 1979; Converse and Presser, 1986; Hoinville and Jowell, 1978; Kahn and Cannell, 1957; Kornhauser and Sheatsley, 1976; Maccoby and Maccoby, 1954; Payne, 1951; Sheatsley, 1983; Sudman and Bradburn, 1982). Given that a questionnaire is an instrument based on language, one would expect people to have similar expectations when they take part in an interview as for any other conversation. Thus in order to make an interview seem sensible and coherent the organisation of a questionnaire requires placing similar items together, and thus the design of questionnaires is at a cross-purpose with the avoidance of context effects, which, as described above, is generally achieved by interposing a buffer of unrelated questions between related ones. Not only would the conversational view require a coherent and logical order of related questions, but it would also impose numerous demands on the interviewer as a participant in a conversation. However, this role of the interviewer went largely ignored until recent years.

In explaining various biases and shortcomings in human judgement Schwarz (1994) makes extensive use of Grice's theory of the logic of conversation. He emphasizes the opinion of Clark and Schober (1992, p. 15) that it is a 'common misperception that language use has primarily to do with words and what they mean. It doesn't. It has primarily to do with people and what *they* mean. It is essentially about *speaker's intentions*.' In determining what the speaker's intentions are, people rely on 'rules of the communication game', which require the communicator (in this case the interviewer) to follow tacit rules which include taking the recipient's characteristics into account, trying to be coherent and comprehensible, giving the necessary amount of information, being relevant, producing a message appropriate to the context,

producing a message appropriate to their communicative intent or purpose, conveying the truth as seen by the communicator, and assuming that the recipient is trying to follow the rules of the communication game. (Schwarz, 1994, p. 126; see also McCann and Higgins, 1992). Schwarz argues that when answering a survey question, respondents work on the assumption that not only they themselves are following the rules of the communication game, but also the interviewer. Schwarz, Groves and Schuman (1998) discuss various research findings that illustrate that 'question comprehension is not primarily an issue of understanding the literal meaning of utterances. Rather, question comprehension involves exstensive inferences about the speaker's intentions to determine the pragmatic meaning of the question. To make these inferences, respondents draw on the nature of the preceding questions as well as the response alternatives' (p. 152).

1.5 Summary

It has been argued that context effects on attitude questions are not artifacts due to crudity of measurement. Rather, they should be perceived as an integral part of the process of expressing one's attitude. Attitudes must always depend on the context in which they are expressed. Although attitude theories do not agree on the nature of attitudes, whether they should be viewed as a construct that varies on a single dimension or as a more complex multidimensional belief structure, few of them seem to postulate perfect attitude stability across different conditions. However, some of the theories (cf. Fishbein and Ajzen, 1975) assume that poeple do in theory hold stable attitudes, but due to their limited mental capacity draw on different beliefs on different occasions, thus leading to considerable instability. Such a view also seems to imply that people will never know their 'true' attitude, simply because they cannot process all the necessary information at the same time.

This does not mean that preceding questions must always have a great influence on responses to a subsequent question because, as has been shown, there are various factors that mediate attitude persuasibility or changeability, and in addition surely the wording of the question must be the most important factor in determining the context. This view is reflected in Bradburn's (1992) simple question asking rule: 'Ask about what you want to know, not something else' (p. 316). The clearer the question, the less likely it is that respondents need to guess what the questioner means and the less likely they are to use previous questions to clarify the meaning.

2

Pilot study

2.1 Introduction

In order to test the susceptibility of various questions to context effects a small pilot study was carried out. Although the pilot questionnaire had to be kept as short as possible, because of limited time and resources, an attempt was made to include questions that would produce different types of context and order effects. Four different types of context and order effects are described on pages 33-34 in chapter 1. Experiments were set up to test three different effect types: 1) Effects of political knowledge questions on responses to a question on interest in government and public affairs, as Bishop et al. (1984a, 1984b; Bishop, 1986, 1987) had found that not knowing the answers to political knowledge questions immediately before the general question substantially reduced reported political interest. Hence, this effect is related to the content of the preceding questions and to the way in which they were answered. 2) Effects of giving examples (prompts) in the preamble to a question asking which issues of national importance respondents are most concerned about, an experiment reminiscent of Schuman and Presser's (1981) experiment on open vs. closed questions. This effect, thus, is unrelated to the content of previous questions, but related to the content of the target question itself. 3) Finally, the position of the question about the most important issues was varied to test for sequence effects (rapport effects). The fourth type of effects discussed in chapter 1, i.e., related to the content of prior questions but not to the way in which they were answered, was not pre-tested in the pilot study, but was included in the main study (see methodology and chapter 6).

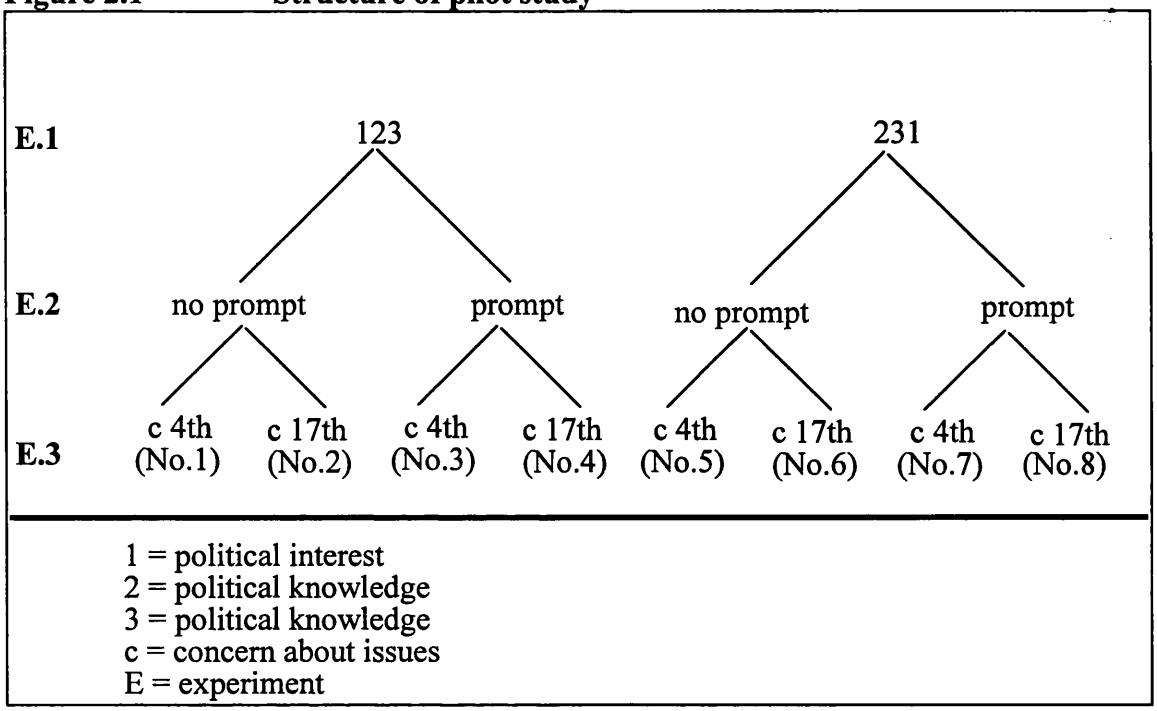
2.2 Design

A nested design was applied and eight different versions of the questionnaire were prepared. In half of the questionnaires the general question: 'Some people seem to follow what is going on in government and public affairs most of the time, whether there is an election going on or not. Others aren't that interested. Would you say that you follow what's going on in government and public affairs most of the time, some of the time, only now and then or hardly at all?' was asked first. In the other half the two knowledge questions: 'Do you know how many Members of Parliament will be elected in your constituency in the next election?' and 'Which minister do you think is responsible for administration of sport?' preceded the general question. Secondly, the wording of the question: 'Which issues of national importance are you most concerned about these days?' was altered to see the effects of giving examples of issues of national importance, i.e., 'Issues such as the sale of the City Hospital, introduction of VAT, new income tax legislation, freeing the price of fish from government constraints and housing are prominent these days. Which issues of national importance are you most concerned about?' Thirdly, this question was placed fourth in half of the questionnaires and seventeenth in the other half. These three variations give he following eight conditions:

1) General question first, concern question placed fourth, not prompted.
2) General question first, concern question placed seventeenth, not prompted.
3) General question first, concern question placed fourth, prompted.
4) General question first, concern question placed seventeenth, prompted.
5) Knowledge questions first, concern question placed fourth, not prompted.
6) Knowledge questions first, concern question placed seventeenth, not prompted.
7) Knowledge questions first, concern question placed fourth, prompted.
8) Knowledge questions first, concern question placed seventeenth, prompted.

(See figure 2.1).

Figure 2.1 Structure of pilot study



2.3 Sample and response rate

The overall sample was composed of 200 individuals, aged 18-70, all living in Reykjavík, the capital and largest city in Iceland. The sample was a simple random sample drawn from the National Registry of Iceland. The 200 individuals selected were then randomly assigned to eight subsamples by mixing 200 numbers in a bowl and drawing out 25 numbers for each of the eight conditions. However, due to interviewer mistakes, four of the subjects were given the 'wrong' questionnaire, making the numbers in the different conditions unequal. Table 2.1 shows the number of subjects and the response rate in the eight conditions.

Table 2.1 Number of subjects in each condition, and response rate

Questionnaire number	Number of respondents in condition	Number of respondents interviewed	% completed interviews
1	22	16	72.7
2	25	20	80.0
3	24	15	62.5
4	25	18	72.0
5	27	20	74.1
6	26	19	73.1
7	26	19	73.1
8	25	21	84.0
Total	200	148	74.0

The overall response rate was 74%; 13% refused to answer, 3.5% were ill or not at home and 9.5% could not be found. Information about sex and age of the people who did not answer the questionnaire is available. Tables 2.2 shows response rate and gender.

Table 2.2 Response rate and gender

	male %	female %	total %
answer	94.8	69.8	74.0
refuse to answer	6.4	18.9	13.0
ill/not at home	4.3	2.8	3.5
not found	10.6	8.5	9.5
total (n)	94	106	200

As depicted in table 2.2, women were much more likely than men to refuse to answer the questionnaire, possibly because the survey was carried out only three days before Christmas and Icelandic women are traditionally very busy, baking and cleaning on the last days before Christmas.

around 6% with an easy knowledge question (approximately 70% of respondents knew the answer) and around 13% with the difficult knowledge questions (around 15% of respondents knew the answers) (see tables 1 and 2 in Bishop, 1987). The size of the effect shown in table 2.3 is very close to that found by Bishop for the difficult knowledge questions, or 14.7%, although the marginal distribution was substantially different. Almost 50% of the Icelandic respondents reported that they followed what was going on in government and public affairs 'most of the time', but only around 30% of the American respondents reported by Bishop.

Table 2.3 **The effect of political knowledge questions on reports of interest in government and public affairs**

	interest question first	knowledge questions first	total
most of the time	55.1	41.8	48.0
some of the time	33.3	34.2	33.8
only now and then	11.6	24.1	18.2
Total (%)	46.6	53.4	100.0
Total (n)	69	79	148

χ^2=4.50; df=2; p=.106

Despite the size of the context effect in table 2.3, the chi-square statistic only reaches borderline significance. Treating the scale (from 1, most of the time, to 4, hardly at all) as an interval scale, however shows a statistical difference in the mean response (t_{144}=-2.35; p=.020).

The figures in table 2.3 do not take into account whether people actually knew the answers to the knowledge questions or not, but respondents were expected to be less likely to say that they followed what was going on 'most of the time' if they did not know the answers to the knowledge questions. The number of respondents who knew

2.4 Method

Most of the interviews (telephone interviews), or 115, were carried out by five interviewers on the 21st of December 1986 (two LSE students and three interviewers from the Social Science Research Institute, University of Iceland). The remainder of the interviews (33) were done in the first two weeks of January 1987. The interviewers were not controlled for, and this might have introduced some bias into the study.

The introduction was as follows:

Good afternoon/evening.

My name is ..... We are two students of London University who are conducting a survey concerning people's attitudes towards political discussion in the media. We seek the opinion of 200 individuals in Reykjavík and you are one of the people who were randomly selected from the National Registry. Would you be so kind as to participate in our study?

2.5 Results and discussion

Experiment 1 - The effect of knowledge questions on reported interest in politics

The first experiment dealt with the effects of political knowledge questions on reported interest in government and public affairs. Bishop (1987) found that between ten and twenty percent fewer respondents reported that they followed what was going on in government and public affairs 'most of the time' when the knowledge questions were asked before the interest question. This effect was moderated by the level of difficulty of the knowledge questions. On average, the size of the effect was

the answers to the knowledge questions shows that, according to Bishop's (1987) criteria, the questions were rather difficult, although they were not equally difficult (see table 2.4). Obviously, the first knowledge question about the number of MPs in the respondent's constituency was extremely difficult. Although the second question was easier, it was unlikely that it would reduce or eliminate the context effect created by the first question, but Bishop (1987) found that adding an easy item (two-thirds knew the answer) did not reduce the effects of the hard items.

Table 2.4 **Answers to knowledge questions about number of MPs in constituency and name of Minister of sSport**

	Both correct	Number of MPs correct	Minister of Sport correct	Both wrong	Total (n)
Interest - knowledge	4.3	1.4	34.8	59.4	69
Knowledge - interest	7.6	2.5	24.1	65.8	79
Total (%)	6.1	2.0	29.1	62.8	148 (100%)

χ^2=2.55; df=36; p=.470

Tables 2.5 and 2.6 show the relationship between respondents' political knowledge (as measured by these two rather superficial questions) and reports on how often they followed what was going on in government and public affairs. The first table shows that there was no significant relation between these variables in the group where respondents were asked about their interest before being asked the knowledge questions. The second table (table 2.6), however, shows a significant context effect. Respondents who were not able to answer the knowledge questions correctly were less likely to say that they followed what was going on in government and public affairs 'most of the time'.

Table 2.5 Relation between political interest and political knowledge where interest question preceded knowledge questions

	Both correct	Number of MPs correct	Minister of Sport correct	Both wrong	Total (%)
most of the time	66.7	100.0	62.5	48.8	55.1
some of the time	33.3	0.0	33.3	34.1	33.3
only now and then	0.0	0.0	4.2	17.1	11.6
Total (%)	4.3	1.4	34.8	59.4	100%
Total (n)	3	1	24	41	69

χ^2=3.98; df=6; p=.679 (66.7% of cells with expected frequency less than 5)

Table 2.6 Relation between political interest and political knowledge where interest question followed knowledge questions

	Both correct	Number of MPs correct	Minister of Sport correct	Both wrong	Total (%)
most of the time	100.0	50.0	42.1	34.6	41.8
some of the time	0.0	0.0	47.4	34.6	34.2
only now and then	0.0	50.0	10.5	30.8	24.1
Total (%)	7.6	2.5	24.1	65.8	100%
Total (n)	6	2	19	52	79

χ^2=13.67; df=6; p=.034 (58.3% of cells with expected frequency less than 5)

Although the sample was far to small to give a reliable estimate of the context effect, the results were similiar to Bishop's. However, many respondents tried to guess the answer to the knowledge questions, whereas others offered a 'don't know' response. Unfortunately, the interviewers did not write down the answers, but only ticked right or wrong, without making a distinction between don't knows and wrong answers, so that it was not possible to distinguish between these groups. It is however conceivable that the effect of giving the wrong answer was greater than saying 'don't know'.

A full 34.6% of the people who got the knowledge questions first and could not answer them still said they followed what was going on most of the time. This was

somewhat higher than Bishop's results, who found this figure to be between 20 and 25%. Apart from the possibility that Icelanders are more interested in politics than are Americans (as pointed out above), this difference might have been due to two main causes, i.e., not all of the respondents who gave the wrong answer to the knowledge questions were actually told that they gave an incorrect answer, and secondly, there was a very strong relation between how frequently people read a particular newspaper or watched television news and how frequently they said they followed what was going on in politics (see table 2.7).

Table 2.7 **Relation between political interest and news consumption[3]- All respondents**

	Watch TV-news and read papers daily	Read papers daily/ TV-news occasion-ally	TV-news daily/ read papers occasion-ally	TV-news and papers occasion-ally	Total (%)
most of the time	60.5	42.1	25.0	22.2	50.4
some of the time	31.6	31.6	37.5	33.3	32.1
only now and then	7.9	26.3	37.5	44.4	17.6
Total (%)	58.0	29.0	6.1	6.9	100%
Total (n)	76	38	8	9	131

χ^2=15.81; df=6; p=.015 (50.0% of cells with expected frequency less than 5) Spearman's rho=0.32 p=.001; Kendall's tau-c=0.26; Gamma=0.45

It is possible that respondents who followed the news daily were less likely to be influenced by a failure to answer these questions than respondents who only occasionally followed the news. A comparison between tables 2.8 and 2.9 suggests that this was the case, i.e., the context effect seems to have been a little smaller (10%) for respondents who watched television news and read a newspaper daily.

[3] News consumption was based on three questions: how often people read a newspaper, how often they watched the news on the state channel, and how often they watched the news on Channel 2. There was only one news programme a day on each channel at the time of the study.

Table 2.8 **Relation between political interest and news consumption - Interest question preceded knowledge questions**

	Watch TV-news and read papers daily	Read papers daily/ TV-news occasion-ally	TV-news daily/ read papers occasion-ally	TV-news and papers occasion-ally	Total (%)
most of the time	65.7	56.3	33.3	33.3	58.3
some of the time	25.7	31.3	33.3	66.7	30.0
only now and then	8.6	12.5	33.3	0.0	11.7
Total (%)	58.3	26.7	10.0	5.0	100%
Total (n)	35	16	6	3	60

χ^2=5.95; df=6; p=.428 (75.0% of cells with expected frequency less than 5) Spearman's rho=0.21 p=.106; Kendall's tau-c=0.16; Gamma=0.32

Table 2.9 **Relation between political interest and news consumption - Knowledge questions preceded interest question**

	Watch TV-news and read papers daily	Read papers daily/ TV-news occasion-ally	TV-news daily/ read papers occasion-ally	TV-news and papers occasion-ally	Total (%)
most of the time	56.1	31.8	0.0	16.7	43.7
some of the time	36.6	31.8	50.0	16.7	33.8
only now and then	7.3	36.4	50.0	66.7	22.5
Total (%)	57.7	31.0	2.8	8.5	100%
Total (n)	41	22	2	6	71

χ^2=16.76; df=6; p=.010 (58.3% of cells with expected frequency less than 5) Spearman's rho=0.42 p=.001; Kendall's tau-c=0.35; Gamma=0.59

However, this comparison between tables 2.8 and 2.9 not only shows that respondents who followed the news daily were less likely to be influenced by the knowledge questions, but it also suggests that the relationship between political interest and news consumption was enhanced by asking the knowledge questions before the political interest questions, Spearman's rho goes from 0.21 (n.s.) to 0.42 (p=.001). However, the sample was too small for detailed and reliable analysis.

Experiment 2 - The most important issues and prompting

With respect to the question about what people are most concerned about, the effects of providing people with examples of issues can easily be demonstrated with a simple crosstable, but statistics can hardly be used without recoding the variable in some intelligible way. Table 2.10 shows this variable broken down by experimental condition, that is, whether people were given examples or not, ignoring the actual position of the variable in the questionnaires (i.e., whether it was the 4^{th} or the 17^{th} question). It is interesting to see that only 6.8% of the people who were prompted said they were not concerned about anything specific or did not know what concerned them most, but 12.3% said they were concerned about all the examples, which might suggest that the effects of providing examples of important issues was similar to the acquiescence effect (Kalton and Schuman, 1982).

Table 2.10 The most important issues by experimental condition

	no examples		examples	
The sale of the City Hospital*	2	(2.7%)	15	(20.5%)
Introduction of V.A.T.*	0	(0.0%)	9	(12.3%)
Income tax legislation*	1	(1.3%)	9	(12.3%)
Freeing the price of fish from government constraints*	0	(0.0%)	2	(2.7%)
Housing/Mortgages*	5	(6.7%)	6	(8.2%)
Salaries/Wages	15	(20.0%)	1	(1.4%)
Inflation	3	(4.0%)	1	(1.4%)
Economic Situation	8	(10.7%)	0	(0.0%)
Industrial disputes/unions	6	(8.0%)	3	(4.1%)
Fishing/Export	1	(1.3%)	0	(0.0%)
The Budget	4	(5.3%)	1	(1.4%)
Education/The Loan Fund	3	(4.0%)	0	(0.0%)
Nuclear disarmament	0	(0.0%)	1	(1.4%)
Health Services	1	(1.3%)	1	(1.4%)
Social Services	0	(0.0%)	1	(1.4%)
Industrial development	1	(1.3%)	1	(1.4%)
New building for the Parliament	1	(1.3%)	0	(0.0%)
Financial fraud	1	(1.3%)	2	(2.7%)
Tax/Customs	0	(0.0%)	2	(2.7%)
Voting legislation	1	(1.3%)	2	(2.7%)
Sporting facilities	1	(1.3%)	1	(1.4%)
Aviation	1	(1.3%)	0	(0.0%)
Agriculture	4	(5.3%)	1	(1.4%)
Independent broadcasting	1	(1.3%)	0	(0.0%)
All five prompts*	0	(0.0%)	9	(12.3%)
Don't know (nothing)	15	(20.0%)	5	(6.8%)
Total	75	(50.7%)	73	(49.3%)

Issues marked with * were used as examples.

Respondents were asked to mention the three issues of national importance that they were the most concerned about. Table 2.10 shows only the first mentioned issue. The difference between the two experimental conditions becomes even clearer when all the three most important issues are taken into account (see table 2.11). However, there were only minimal changes in the pattern of responses when all three most important issues are taken together, but respondents who were prompted mentioned more issues than respondents who were not prompted, 1.37 and 1.23 issues, respectively. Hence, only the first-mentioned issue will be included in further analysis.

Table 2.11 The three most important issues by experimental condition

	no examples		examples	
The sale of the City Hospital*	2	(3.3%)	18	(26.5%)
Introduction of V.A.T.*	0	(0.0%)	13	(19.1%)
Income tax legislation*	2	(3.3%)	16	(23.5%)
Freeing the price of fish from government constraints*	0	(0.0%)	4	(5.9%)
Housing/Mortgages*	5	(8.3%)	6	(8.8%)
Salaries/Wages	18	(30.0%)	2	(2.9%)
Inflation	3	(5.0%)	1	(1.5%)
Economic Situation	8	(13.3%)	0	(0.0%)
Industrial disputes/unions	7	(11.7%)	3	(4.4%)
Fishing/Export	1	(1.7%)	0	(0.0%)
The Budget	7	(11.7%)	1	(1.5%)
Education/the Loan Fund	5	(8.3%)	1	(1.5%)
Nuclear disarmament	1	(1.7%)	1	(1.5%)
Health Services	1	(1.7%)	1	(1.5%)
Social Services	2	(3.3%)	1	(1.5%)
Industrial development	1	(1.7%)	1	(1.5%)
New building for the Parliament	1	(1.7%)	0	(0.0%)
Financial fraud	1	(1.7%)	3	(4.4%)
Tax/Customs	0	(0.0%)	5	(7.4%)
Voting legislation	1	(1.7%)	5	(7.4%)
Sporting facilities	1	(1.7%)	1	(1.5%)
Charity	1	(1.7%)	0	(0.0%)
Aviation	1	(1.7%)	0	(0.0%)
Agriculture	4	(6.7%)	1	(1.5%)
Independent broadcasting	1	(1.7%)	0	(0.0%)
All five prompts*	0	(0.0%)	9	(13.2%)
Total (number of respondents)	60		68	
Total (number of responses)	74		93	

Percentages are based on number of respondents. - Issues marked with * were used as examples.

An easy way to see how prompting affects responses to the question 'Which issues of national importance are you most concerned about these days?' is to code responses into three categories, i.e., nothing, the examples (marked with * in tables 2.10 and 2.11), and other issues. Table 2.12 shows that although the issues that were used as examples were all much talked about in the media in the weeks leading up to the survey, respondents were not very likely to mention them if they were not prompted.

Table 2.12 The most important issues

	No prompt	Prompt	Total
Nothing	14.3	6.9	10.6
The examples	11.4	70.8	41.5
Other issues	74.3	22.2	47.9
Total (%)	49.3	50.7	100.0
Total (n)	70	72	142

χ^2=52.05; df=2; p≤.001

The results in table 2.12 show clearly the effects of giving examples of important issues. Not only were respondents who were given examples likely to say that they were most concerned about those issues, but also less likely to say that they did not know, or that they were not concerned about anything in particular.

Schuman and Presser (1981) found that respondents' education mediates the effects of question wording. One can hypothesize that less educated people are more susceptible to the examples given. Table 2.13 shows the relationship between the most important issues and the experimental condition, controlling for education of respondents.

Table 2.13 The most important issues, experimental condition, and education

	Compulsory education		*More than compulsory education*	
	No prompt	Prompt	No prompt	Prompt
Nothing	14.3%	12.0%	14.3%	4.3%
The examples	4.8	72.0	14.3	70.2
Other issues	81.0	16.0	71.4	25.5
Total (n)	21	25	49	47

Compulsory education: χ^2=23.08; df=2; p≤.001; More than compulsory: χ^2=30.90; df=2; p≤.001; interaction between experimental condition, education and response: L.R.χ^2=2.15; df=1; p=.143.

Education did not significantly condition the effects of prompting (χ^2=2.15; df=1; p=.143). The only difference between respondents who had only compulsory education and more educated respondents seems to be that prompting reduced the likelihood of more educated respondents giving a 'don't know' or 'nothing' response. However, the sample was clearly far too small to give any reliable picture of the effects of different educational levels.

Experiment 3 - Sequence effects, the most important issues

In the last experiment, the position of the question about the most important national issues was varied. In half of the questionnaires it came before the questions about the media, and in the other half it was placed after the media questions, to test whether the media questions increased the accessibility of particular issues. It was hypothesized that placing this question towards the end of the questionnaire would reduce 'don't know' and 'nothing' responses and that it would increase the likelihood of respondents remembering issues other than the ones used as examples in the preamble to the question. In the event, whether the question was 4th or 17th in the questionnaire did not produce statistically significant results on responses (see table 2.14).

Table 2.14 The most important issues and the position of the question

	No prompt		*Prompt*	
	Beginning	End	Beginning	End
Nothing	19.4%	8.8%	6.1%	7.7%
The examples	13.9	8.8	78.8	64.1
Other issues	66.7	82.4	15.2	28.2
Total (n)	36	34	33	39

No prompt χ^2=2.35; df=2; p=.308; Prompt: χ^2=1.98; df=2; p=.371; interaction between experimental condition, position and response: L.R. χ^2=0.333; df=2; p=.847.

A closer examination of table 2.14 reveals that although there was no significant relationship between position of the question about the most important issues and responses to that question, there was a higher proportion of respondents in the 'no-prompt-beginning' group that did not name any issues (19.4 vs 8.8% in the 'no-prompt-end group). The effect of prompting also seemed to be less severe (although there was no significant difference) when the question came towards the end of the questionnaire, i.e., 64% of respondents who were prompted and asked about the most important issues towards the end of the interview named one of the examples as the most important issues as against 79% of respondents who were prompted in the beginning of the interview.

2.6 Conclusion

Of the three experiments in the pilot study, only two produced significant results. The first experiment on the effects of knowledge questions on reported interest in politics showed that respondents who were unable to answer the questions were less likely to say that they followed what was going on 'most of the time'. Respondents who read newspapers and watched television news daily were slightly less likely to be affected by their failure to answer the knowledge questions than other respondents, but more importantly the order of the questions seemed to affect the relationship between the political interest question and the news consumption questions. That is, there was a significant relationship between news consumption and political interest, but only for those respondents who answered the knowledge questions before the interest question. Respondents in this experiment, however, were not always aware of having given an incorrect answer to the knowledge questions, which may have diminished the effect. Another factor that may have reduced the value of this experiment was the difficulty of the knowledge questions. Only 8% of respondents knew how many members of Parliament were to be elected

in their constituency in the next general election. This makes it difficult to examine the effects of different levels of political knowledge. Hence the knowledge questions were replaced by easier questions in the main study.

Prompting respondents with specific issues when asking them which issues of national importance they were most concerned about had a profound effect on the marginal distribution of answers to the question. More than two thirds of respondents who were prompted said that one of the examples or prompts was the issue they were most concerned about. The examples were all very specific either concerning bills pending before the parliament or the issue of privatization. The answers given by the respondents who were not prompted were of a different nature, being much more general. The most frequently mentioned issues in this group were salaries/wages, the economic situation, industrial disputes, and the Budget. This was taken into account in the main study, and different examples given. The sample was split into three groups, a group that was not prompted, a group prompted with specific issues, and a group prompted with general issues.

The experiment on sequence effects did not provide any convincing results, and being of another nature than the other two experiments (not related to the content of the previous questions or the target question itself) it was decided to omit it from the main study. This experiment was replaced with an experiment testing the fourth type (see pp. 33-34 in chapter 1 where different types of context and order effects are described) of context effects, i.e., effects that were related to the content of preceding questions but not to the way in which they were answered.

3

Methodology

3.1 Introduction

The pilot study that was carried out in December 1986 was concerned with two major topics: a) the effects of focusing people's attention on particular issues by asking two knowledge questions related to politics, immediately before asking them about how well they generally follow what is going on in government and public affairs, and b) the effects of providing people with examples when asking about what, in their opinion are, the most important national issues. The results for a) showed that people tended to report they followed politics less frequently if asked the knowledge questions before the general question. With respect to b) the analysis showed highly significant differences between the group that was given examples of important national issues, and the group that was not given such examples. Although these were the general trends, the pilot study sample had been too small for any detailed analysis. Thus, it is important to replicate these experiments with a larger sample. In addition to replicating these two experiments with a larger sample it was decided to add the third experiment dealing with a different type of context effects to the main study.

3.2 Design

Split-ballot experiments have been used since the 1930s to investigate the effects of question wording or question order. Such experiments have demonstrated that asking people questions about their attitudes or opinions in a particular way may lead to a

change in these very same attitudes and opinions (cf. discussion of 10 different consequences of being asked a question by Knowles et al., 1992). An explanation frequently proposed is that prior items in a questionnaire will increase the accessibility of particular beliefs, and hence affect the way in which following questions are interpreted or lead to an oversampling of particular beliefs (Bargh and Pratto, 1986; Fazio, Powell, and Herr, 1983; Higgins, King, and Mavin, 1982). Changes that are due to increased accessibility produced by prior items are generally assumed to wear off over time (e.g. Posner, 1978). However, there are very few studies that have been designed to test the endurance of such effects. This study was therefore designed as a three-wave panel survey to test the effects of different types of context items and the endurance of some of these effects, i.e., to test whether the effects would still be detectable two to six weeks after the initial interview or whether they would fade or disappear over time.

The research consisted of three main experiments with three different types of context, i.e., neutral context, neutral context involving self-presentation, and normative context. In the experiment on context effects unrelated to prior items but related to the content of the question itself, neutral context was set. That is, examples were given of issues that might be of national importance and respondents were asked to state their preference. In the experiment on context effects related to the content of prior questions and to the way in which these questions are answered, another dimension was added. Although the context is in principle neutral, i.e., political knowledge questions presented before a question asking about *frequency* or *magnitude* of attending to political events, a self-presentation dimension is involved. That is, it is assumed that having to answer knowledge questions in a survey is anxiety provoking. In the experiment on context effects related to the content of prior questions but not to the way in which they are answered, normative context was set, i.e., the items leading up to general attitude questions towards abortion or nuclear weapons reflect either a favourable *or* an unfavourable attitude.

The order of the experiments in the questionnaire was such that the questionnaire started with the questions on political interest and knowledge, followed by the question about the most important issues. The questions about attitudes towards abortion and nuclear weapons were the last questions in the questionnaires (see appendices 1, 2, and 3). The form of the question, different order or context was assigned randomly to respondents. However, the random assignment in the main study only applied to the first experiment, i.e., the effects of the knowledge questions on the general question about politics. This was done by randomly drawing three equally large subsamples from the overall simple random sample and nesting all the other experiments within the three conditions of the first experiment. This resulted in 12 different versions of the questionnaire within each subsample. These questionnaires were then mixed in a pile and haphazardly assigned to respondents. The randomization did not operate over the interviewers for two major reasons: 1) it was not possible to plan in advance the work of the interviewers, because of other commitments they had, and 2) because of time pressure and because of how difficult it was to find many of the respondents at home, it was necessary to constantly circulate the telephone numbers among the interviewers.

Experiment 1 - The effect of knowledge questions on responses to a question about political interest

The evidence indicates that people respond largely with the first thing that comes to mind from their most relevant recent experience, and this depends heavily on the context in which the question is asked (cf. Collins and Loftus, 1975; Wyer and Hartwick, 1984). In the same vein, one could assume that asking difficult knowledge questions immediately before a general question about how well people follow what is going on in government and public affairs would lead to a shift in the marginals, i.e., those who do not know the answers will report following what is going on less frequently than do those who know the answers (cf. Bishop et al., 1984; Bishop,

1987). To demonstrate these effects the sample was randomly divided into three groups: a) the general question leading to the knowledge questions, b) the knowledge questions leading to the general question, and c) the general question without the knowledge questions, or the control group. One would expect to get the same results for groups a) and c). The question of interest in this experiment was the following: Does preceding a general question about interest in politics with knowledge questions affect responses to the general question: 'Some people seem to follow what is going on in government and public affairs most of the time, whether there is an election going on or not, others aren't that interested. Would you say that you follow what is going on in government and public affairs, hardly at all, only now and then, some of the time, or most of the time?'

The knowledge questions were the following:

a) Do you know which minister is responsible for the administration of the Statistical Bureau of Iceland?
b) Do you know who is the Speaker of the plenary session of both houses of Parliament?

Form 1

The questionnaire started with the political interest question, followed by the two knowledge questions.

Form 2

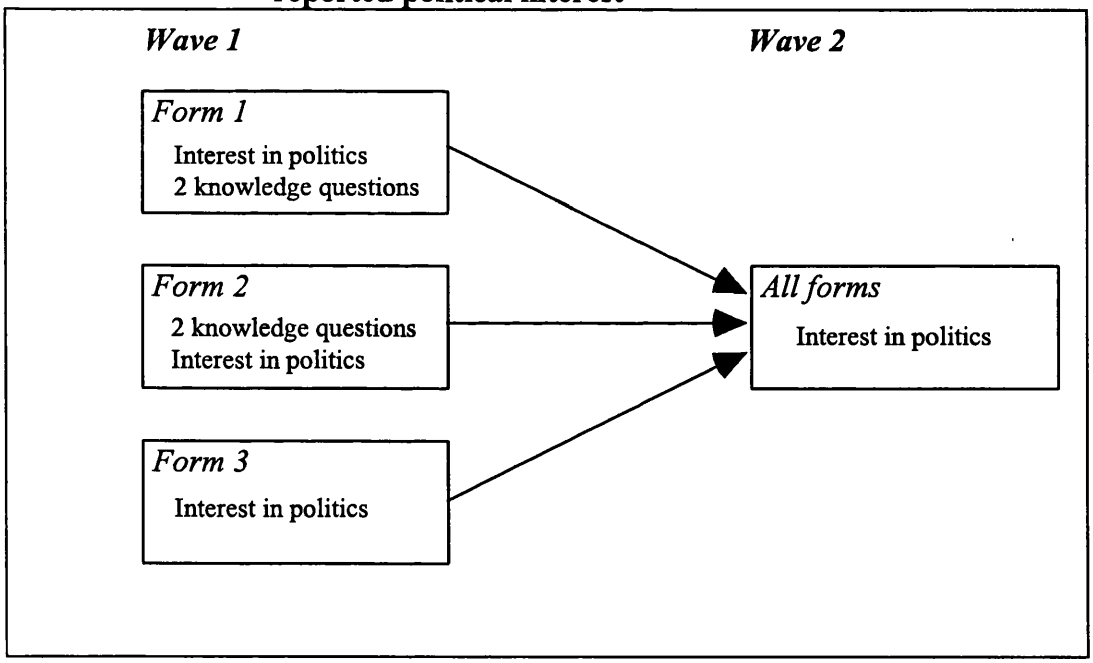
The questionnaire started with the knowledge questions immediately before the question about how closely respondents follow what is going on in government and public affairs.

Form 3

In this condition respondents were only asked the general interest question, and no knowledge questions, to provide a control group to detect changes that might take place from Wave 1 to Wave 2 of the survey.

In the second interview, which took place two to three weeks after the first one, all respondents were asked the general interest question only. (see figure 3.1).

Figure 3.1 Design of experiment on effect of knowledge questions on reported political interest



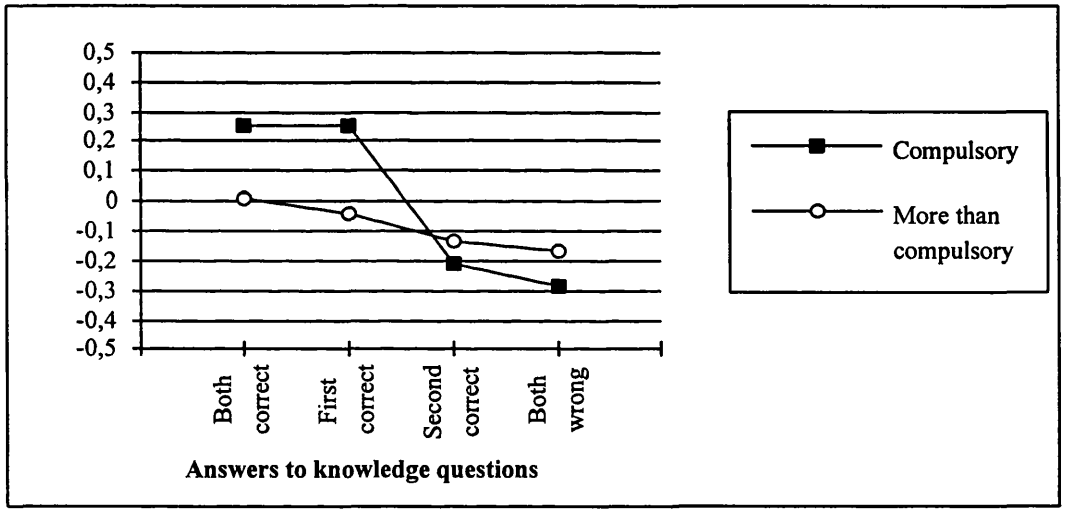
The original idea was to ask the knowledge questions again in Wave 2 and divide each of the three groups into three subgroups. Because of the very limited time we had to carry out the second wave, and because we did not want to risk losing more of the sample on account of the knowledge questions, they were excluded. According to the interviewers, in many cases, it turned out to be a difficult task to start the interview with the knowledge questions. These questions appeared to be an obstacle

Table 4.6.4 **Odds, and predicted proportion of respondents saying 'some of the time or less', based on a saturated model**

EFFECT LEVEL	Odds	Predicted proportion	Size of effect
Political interest by order by knowledge 1 by knowledge 2 by education by age			
1.1.1.1.1. I→K - correct - correct - comp. - 18-30	1.004	.501	
1.1.1.1.2. I→K - correct - correct - comp. - 31-50	.111	.100	
1.1.1.1.3. I→K - correct - correct - comp. - 51-70	.143	.125	
1.1.1.2.1. I→K - correct - correct - m.th.c - 18-30	.273	.214	
1.1.1.2.2. I→K - correct - correct - m.th.c - 31-50	.226	.185	
1.1.1.2.3. I→K - correct - correct - m.th.c - 51-70	.067	.062	
1.1.2.1.1. I→K - correct - wrong- comp. - 18-30	1.000	.500	
1.1.2.1.2. I→K - correct - wrong- comp. - 31-50	1.166	.538	
1.1.2.1.3. I→K - correct - wrong- comp. - 51-70	.476	.323	
1.1.2.2.1. I→K - correct - wrong - m.th.c - 18-30	1.000	.500	
1.1.2.2.2. I→K - correct - wrong - m.th.c - 31-50	.319	.242	
1.1.2.2.3. I→K - correct - wrong - m.th.c - 51-70	.305	.234	
1.2.1.1.1. I→K - wrong - correct - comp. - 18-30	.717	.418	
1.2.1.1.2. I→K - wrong - correct - comp. - 31-50	3.010	.751	
1.2.1.1.3. I→K - wrong - correct - comp. - 51-70	.200	.167	
1.2.1.2.1. I→K - wrong - correct - m.th.c - 18-30	1.266	.559	
1.2.1.2.2. I→K - wrong - correct - m.th.c - 31-50	.305	.234	
1.2.1.2.3. I→K - wrong - correct - m.th.c - 51-70	1.002	.500	
1.2.2.1.1. I→K - wrong - wrong - comp. - 18-30	1.709	.631	
1.2.2.1.2. I→K - wrong - wrong - comp. - 31-50	1.289	.563	
1.2.2.1.3. I→K - wrong - wrong - comp. - 51-70	1.002	.500	
1.2.2.2.1. I→K - wrong - wrong - m.th.c - 18-30	1.528	.604	
1.2.2.2.2. I→K - wrong - wrong - m.th.c - 31-50	.844	.458	
1.2.2.2.3. I→K - wrong - wrong - m.th.c - 51-70	.998	.500	
2.1.1.1.1. K→I - correct - correct - comp. - 18-30	.333	.250	.250
2.1.1.1.2. K→I - correct - correct - comp. - 31-50	4.983	.833	-.733
2.1.1.1.3. K→I - correct - correct - comp. - 51-70	.077	.071	.054
2.1.1.2.1. K→I - correct - correct - m.th.c - 18-30	.262	.208	.006
2.1.1.2.2. K→I - correct - correct - m.th.c - 31-50	.097	.088	.096
2.1.1.2.3. K→I - correct - correct - m.th.c - 51-70	.272	.214	-.151
2.1.2.1.1. K→I - correct - wrong- comp. - 18-30	.332	.249	.250
2.1.2.1.2. K→I - correct - wrong- comp. - 31-50	.552	.356	.183
2.1.2.1.3. K→I - correct - wrong- comp. - 51-70	.728	.421	-.102
2.1.2.2.1. K→I - correct - wrong - m.th.c - 18-30	1.183	.542	-.042
2.1.2.2.2. K→I - correct - wrong - m.th.c - 31-50	.320	.243	0
2.1.2.2.3. K→I - correct - wrong - m.th.c - 51-70	.391	.281	-.048
2.2.1.1.1. K→I - wrong - correct - comp. - 18-30	1.675	.626	-.208
2.2.1.1.2. K→I - wrong - correct - comp. - 31-50	1.157	.536	.214
2.2.1.1.3. K→I - wrong - correct - comp. - 51-70	1.397	.583	-.416
2.2.1.2.1. K→I - wrong - correct - m.th.c - 18-30	2.234	.691	-.131
2.2.1.2.2. K→I - wrong - correct - m.th.c - 31-50	.763	.433	-.200
2.2.1.2.3. K→I - wrong - correct - m.th.c - 51-70	1.391	.582	-.083
2.2.2.1.1. K→I - wrong - wrong - comp. - 18-30	11.658	.921	-.289
2.2.2.1.2. K→I - wrong - wrong - comp. - 31-50	4.195	.808	-.243
2.2.2.1.3. K→I - wrong - wrong - comp. - 51-70	1.594	.614	-.114
2.2.2.2.1. K→I - wrong - wrong - m.th.c - 18-30	3.483	.777	-.170
2.2.2.2.2. K→I - wrong - wrong - m.th.c - 31-50	1.214	.548	-.091
2.2.2.2.3. K→I - wrong - wrong - m.th.c - 51-70	.998	.500	0

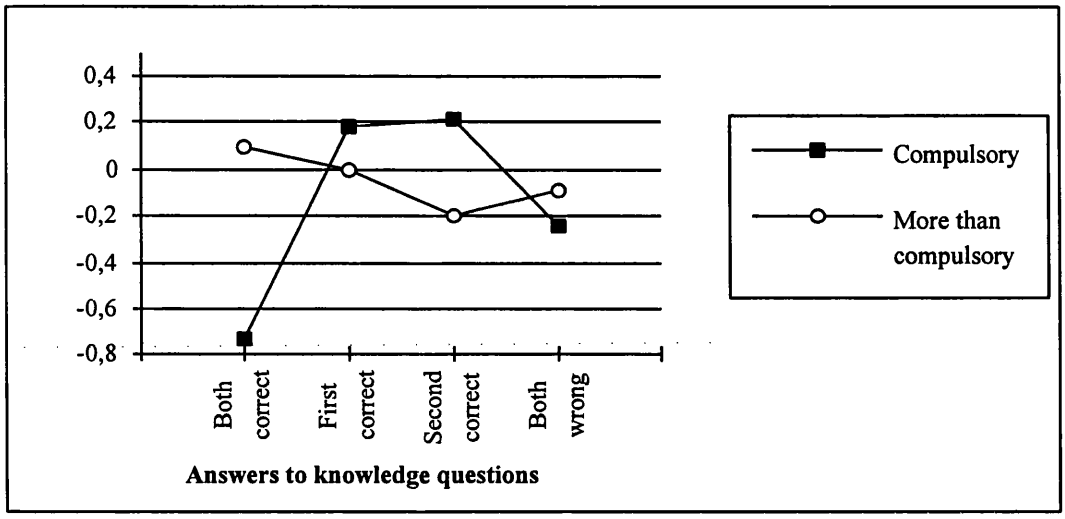
The pattern of the relationship between the size of the context effect and answers to the knowledge questions for respondents between 18 and 30 years of age, especially those who only have compulsory education, seemed to comply with self-perception theory. That is, if they answered both knowledge questions correctly, they were more likely to say they follow what goes on most of the time than respondents who answered the interest question first. If, however, they failed to answer the first or both knowledge questions they were less likely to say they follow what goes on most of the time. The effect was similar, although much smaller, for respondents who had more than compulsory education (see figure 4.6.1).

Figure 4.6.1 **Relation between size of context effect, political knowledge and education for the age group 18-30**



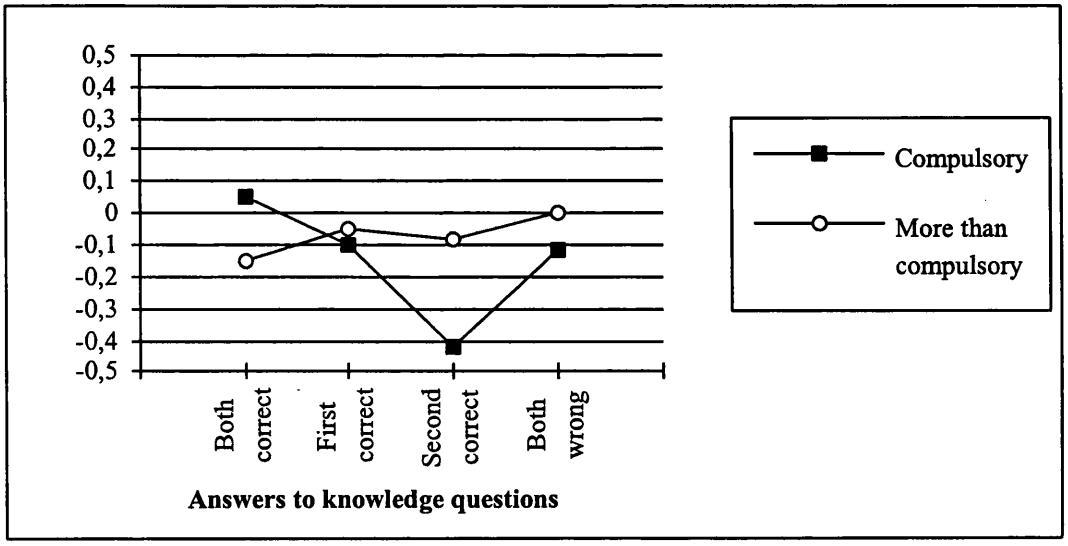
More deviations from the expected pattern can be seen in the responses of 31-50 years old respondents. A very large context effect was found for respondents who only had compulsory education but answered both the knowledge questions correctly, but respondents in this group who could answer one of the questions were *more* likely to say they follow what goes on most of the time. Respondents 31-50 years old with more than compulsory education showed a pattern similar to that of the younger respondents, i.e., a context effect only occurred when respondents failed to answer the first or both the knowledge questions (see figure 4.6.2).

Figure 4.6.2 **Relation between size of context effect, political knowledge and education for the age group 31-50**



A significant context effect was not found for respondents aged 51 to 70. A possible explanation can be seen in figure 4.6.3. The effect for respondents with compulsory education only was not very different from the effect found for the younger respondents, but for respondents with more than compulsory education the relationship was reversed. There was no effect for respondents who did not know the answer to either of the questions, but a 15% effect for respondents who knew both answers.

Figure 4.6.3 **Relation between size of context effect, political knowledge and education for the age group 51-70**



Although there were statistically significant differences between age groups and respondents with different education with respect to their susceptibility to the context, it is important to remember that there were very few observations per cell when the sample was broken down as here, and this may well have affected the reliability of the results.

4.7 Effect of question order in Wave 1 on political interest in Wave 2

In his protocol analysis, Bishop found evidence not only of the cognitions involved in answering the question, but also of affect. The inability of respondents to answer the knowledge questions activated feelings of embarrassment (Bishop, 1986).

These results give us reason to suspect that the knowledge questions will give rise to the same affect within the group that was asked the interest question first as it did within the group that answered the knowledge questions before the interest question. The main difference between these two experimental conditions in Wave 1 was that only one of the groups was given the opportunity to convey that embarrassment by reporting that they followed politics less frequently than they otherwise would have. This opportunity was provided in Wave 2, where all respondents were presented with the general question, and no knowledge questions.

Thus it was predicted that the difference between the two groups would become smaller in Wave 2, when both groups were confronted with the same general question as in Wave 1, but this time without knowledge questions. In other words, the hypothesis was that the effects of asking respondents the political interest question before the knowledge question in Wave 1 could be detected in responses to the interest question three weeks later in Wave 2, since respondents may well have expected being put in the same embarrassing situation for the second time. On the other hand, one expected the effects of the knowledge questions, presented before

the general question in Wave 1, to remain the same, or to have been somewhat attenuated between the two studies as the embarrassment may wear off. Table 4.7.1 shows the relation between the experimental conditions in Wave 1 and responses to the general question in Wave 2. It was also predicted that in Wave 2, the control group, those who were never confronted with the knowledge questions, would report themselves as more interested in politics than the two groups that received the knowledge questions in Wave 1.

Table 4.7.1 Political interest (Wave 2) by order of questions (Wave 1)

	Order of questions in Wave 1			
	interest knowledge	knowledge interest	interest only	total
most of the time	43.1%	45.0%	50.5%	46.2%
some of the time	43.1	42.1	31.7	39.1
only now and then	12.4	10.3	14.3	12.3
never	1.3	2.6	3.5	2.5
Total (n)	299	302	287	888

χ^2=12.51; df=6; p=.05 Size of effect (most of the time): for interest→knowledge: 50.5-43.1=7.4%; for knowledge→interest: 50.5-45.0=5.5%.

The results in table 4.7.1 seem to confirm the above hypotheses, at least if one looks only at the probability of respondents saying 'most of the time'. The experimental conditions in Wave 1 do seem to affect responses to the political question in Wave 2 (three weeks later). The difference between the two groups that were presented with the knowledge questions in Wave 1, had then disappeared. Thus, the major differences between tables 4.7.1 and 4.2.1 above is that in table 4.2.1 the knowledge → interest group reported significantly less interest in government and public affairs, than the interest → knowledge, and the control groups. In table 4.7.1 this was not the case, but the difference was now between the control group, on the one hand, and the interest → knowledge, and knowledge → interest, on the other. But can it be argued that the knowledge questions, which were placed after the political interest question

in Wave 1 affected responses to the interest questins in Wave 2? Table 4.7.2 shows the χ^2 statistics for pairwise comparisons for political interest (in Wave 2) of the three groups in table 4.7.1 (the distribution of responses can be seen in that table).

Table 4.7.2 Chi-square statistics for pairwise comparisons of political interest in Wave 2

	χ^2	df	sig.	n
Interest→knowledge vs. Knowledge→interest	2.05	3	.562	601
Interest→knowledge vs. Control group	10.03	3	.018	586
Knowledge→interest vs. Control group	7.47	3	.058	589

As can be seen in table 4.7.1, there was both a higher proportion of respondents who said they follow what goes on most of the time and who said they hardly ever or only now and then follow what goes on politically in the control group than the other two groups. Hence it is important to take a closer look at the changes from one time to the other. The changes in political interest, between the two studies, can be seen more clearly in tables 4.7.3 and 4.7.4

Table 4.7.3 Political interest in Wave 2, by political interest in Wave 1, controlling for experimental condition

	Political interest in Wave 1			
Political interest in Wave 2	most of the time	some of the time	only now and then/ never	total (n)
Interest→knowledge				
most of the time	66.9%	10.5%	17.1%	129
some of the time	30.2	70.5	31.4	129
only now and then/never	3.0	18.9	51.4	41
Total (n)	169	95	35	299

χ^2=127.62; df=4; p=.001; Stability: 66.2%; negative change: 24.7%; positive change: 9%; Spearman's rho: .57

table continued on next page

Table 4.7.3 Political interest in Wave 2, by political interest in Wave 1, controlling for experimental condition - continued

Political interest in Wave 2	*Political interest in Wave 1* most of the time	some of the time	only now and then/ never	total (n)
Knowledge→interest				
most of the time	68.7	28.9	13.8	136
some of the time	26.5	63.3	47.7	127
only now and then/never	4.8	7.8	38.5	39
Total (n)	147	90	65	302

χ^2=98.40; df=4; p=.001; Stability: 60.6%; negative change: 17.5%; positive change: 21.9%
Spearman's rho: .50

Control group (no knowledge questions)				
most of the time	74.7	24.7	11.1	145
some of the time	20.9	51.6	27.8	91
only now and then/never	4.4	23.7	61.1	51
Total (n)	158	93	36	287

χ^2=114.89; df=4; p=.001; Stability: 65.5%; negative change: 21.6%; positive change: 12.9%
Spearman's rho: .58

Table 4.7.3 shows the comparison of responses to the political interest question in Wave 1 and Wave 2, controlling for experimental conditions in Wave 1. Just over 60% of respondents gave the same response in waves 1 and 2. Almost a quarter of the respondents who answered the knowledge questions after the interest question in Wave 1 changed their response in a negative fashion, i.e., reported less interest in politics. Whether this can be regarded as an effect of the knowledge questions is by no means clear, since more than 20% of the control group also gave a more negative response in Wave 2. More than 20% of respondents who were confronted with the knowledge questions before the interest question in Wave 1 changed their response in a positive direction, a substantially larger proportion than in the other two groups,

suggesting that the effect wore off over time, although it did not disappear. Table 4.7.4 shows the differences in the marginals of the subtables in table 4.7.3.

Table 4.7.4 Comparison of marginals for political interest in Waves 1 and 2

	Changes in political interest: Wave 2 - Wave 1
Interest→knowledge	
never/only now and then	13.7 - 12.0 = 1.7%
some of the time	43.1 - 31.9 = 11.2%
most of the time	43.1 - 56.1 = -13.0%
Knowledge→interest	
never/only now and then	12.9 - 22.8 = -9.9%
some of the time	42.1 - 31.3 = 10.8%
most of the time	45.0 - 45.9 = -0.9%
Control group (no knowledge questions)	
never/only now and then	17.8 - 13.6 = 4.2%
some of the time	31.7 - 31.0 = 0.7%
most of the time	50.5 - 55.5 = -5.0%

The results from the control group (never presented with knowledge questions) suggest that there had been a general decline in political interest from Wave 1 to Wave 2, but comparison of the patterns of shift within the three groups revealed some interesting differences.

According to the hypothesis that the knowledge questions in Wave 1 (group 1) would affect responses in Wave 2, in such a way that respondents would convey less general interest in politics than they did in Wave 1 when confronted with the general question before they were asked to answer the knowledge question, one would expect to find a more pronounced, or at least more general decrease in interest in group 1, than in the control group (group 3). As can be seen in tables 4.7.3 and 4.7.4

this is not very clear. If one looks only at the proportion of respondents who said they followed what was going on 'most of the time' in Wave 1, the hypothesis seems to have been supported (see table 4.7.4). In fact, 13.0% fewer respondents in the group that answered the interest question before the knowledge questions in Wave 1 reported following what is going on in government and public affairs 'most of the time', as opposed to 5.0% in the control group. This difference, i.e., between 13 and 5% was statistically significant ($z=3.33$ $p=.001$). The measures of response stability in table 4.7.3, however, do not show any significant differences between the control group and the group that answered the question about political interest before the knowledge questions.

The hypothesis concerning the knowledge→interest group was in the opposite direction, i.e., respondents were predicted to show the same or more interest in government and public affairs when they were asked the general question in Wave 2 without the knowledge questions. Comparison between the change in marginals from Wave 1 to Wave 2 in the control group and the knowledge→interest group confirms this hypothesis. An overall decline in interest can be seen in the control group, i.e., 5.0% fewer people in that group reported following what is going on in government and public affairs most of the time but no such effect can be seen in the knowledge→interest group (0.9%), though the predicted differences in the shift pattern come clear in the categories 'never/only now and then' and 'some of the time'. In the control group in Wave 2, 4.2% more people said they follow what goes on in government and public affairs only now and then or never than in Wave 1. In the group that answered the knowledge questions before the interest question the shift was in the opposite direction. In Wave 2, 9.9% fewer people said they never/only now and then followed politics than in Wave 1. Although there had been a clear decline in interest in politics in the control group and some increase in reported political interest in the knowledge→interest group, there was still a significant difference between these two groups in Wave 2. For some reason, the

responses in the control group were more polarized than in the other two groups, i.e., there was a higher porportion of respondents who said they follow what goes on 'most of the time', but there was also a higher proportion of respondents in the control group who said they never or only now and then follow what goes on. Hence if the scale is treated as a four-point interval scale and the mean calculated for each group, there was no difference between the three groups (means: I→K=3.36; K→I=3.38; control=3.39; $F_{2,885}$=.0274, p=.973) in Wave 2. There was a significant decrease in the mean response in the interest→knowledge group, as predicted. However, it is difficult to give an affirmative answer to the question whether the knowledge questions presented after the interest question in Wave 1 affected responses in Wave 2 because there were also negative changes in the control group (see table 4.7.5 for mean responses in Wave 1 and 2).

Table 4.7.5 **Mean response to political interest question in Wave 1 and Wave 2 by order**

	Wave 1		*Wave 2*					
	Mean	Std.dev	Mean	Std.dev	Diff.	t	df	p
Interest→knowledge	3.43	.749	3.28	.729	.15	3.59	298	.000
Knowledge→interest	3.23	.890	3.29	.758	-.07	-1.41	301	.160
Control group	3.40	.760	3.29	.839	.11	2.55	286	.011

Although the negative changes were greater in the interest→knowledge group than in the control group (on average 1.5 and 1.1 points, respectively) there was no statistically significant difference between the changes in these two groups, making it impossible to draw a definite conclusion.

4.8 Changes in political interest between waves

Whether one would conclude that there had been an increase, decrease, or no change at all, in political interest between the two waves, depends on which of the groups one examined. Although two of the groups (interest→knowledge and the control group) showed a significant decline in political interest, the magnitude of the change was not the same. In the interest→knowledge group, 13% fewer respondents said they follow what is going on 'most of the time' in Wave 2 than in Wave 1. The comparable figure for the control group was only 5%. If, on the other hand, one looks at the knowledge→interest group, the conclusion would be different. Although the increase in political interest was not significant (the mean went from 3.22 to 3.29, $t_{301}=1.41$, $p=.16$) within this group, the changes were different from the changes in the other two groups. In the interest→knowledge and the control groups there was a decline in interest down the whole scale, i.e., from 'most of the time' to 'never', but in the knowledge interest group, the changes were more in the direction of centralizing responses, i.e., 0.9% fewer respondents said they follow what is going on 'most of the time', *but* there are 9.9% fewer respondents that said they follow what is going on 'never/only now and then'; thus the changes were towards the centre of the scale (10.8% more respondents said they follow what is going on 'some of the time' in Wave 2 than in Wave 1; see table 4.7.4) Although the changes in reported interest as found by subtracting the score on the political question in the first wave from the score in the second wave ranged from a score of -3 to 3, the variable is coded into five categories only in table 4.8.1, i.e., a one or two point negative change, no change, and a one or two point positive change, since there were only 8 respondents who changed their response by three points. Table 4.8.1 shows the effect of the order of the questions in Wave 1 on changes in political interest between Waves 1 and 2.

Table 4.8.1 **Changes in political interest between waves by order of questions (in Wave 1)**

	Order of questions in Wave 1			
	interest knowledge	knowledge interest	interest only	total
negative change 2 points	2.0	3.0	3.8	2.9
negative change 1 point	23.4	15.2	19.2	19.3
no change	65.2	59.3	63.8	62.7
positive change 1 point	6.7	17.2	11.1	11.7
positive change 2 points	2.7	5.3	2.1	3.4
Total (n)	299	302	287	888

χ^2=27.19; df=8; p=.001 - This table shows slightly more changes than table 4.7.3, because the categories 'never' and 'only now and then' were collapsed before stability was measured in table 4.7.3. The pairwise comparisons are: I→K vs. K→I: χ^2=23.12, df=4, p=.000; I→K vs. control: χ^2=6.46, df=4, p=.167; K→I vs. control: χ^2=9.98, df=4, p=.041.

In order to test whether any other variables had an effect on the changes in political interest between the two studies and to see whether the effects of the order of questions in Wave 1 were conditioned by any of the background variables, logit models for the variables: change (in the logit analysis this variable is coded into three categories, i.e., negative cange, no change and positive change), order, age, sex, and education were fitted. Goodness-of-fit statistics for the independence model, the main effects model, and the model with all two-way interactions are presented in table 4.8.2.

Table 4.8.2 **Models for change in political interest with order, sex, and education as explanatory variables**

Model	Lambda parameters included in the model*	Chi-square	DF	p
1. Independence	(C)	39.74431	22	.012
2. Main effects	(C)(CO)(CS)(CE)	13.83909	14	.462
3. Two-way interactions	(C)(CO)(CS)(CE)(COS) (COE)(CSE)	3.90313	4	.419

* C=change in political interest O=order of questions
E=education of respondent S=sex of respondent

The fit of the main effects model is reasonably good (χ^2=13.84, df=14, p=.462). Adding all possible two-way interactions did not substantially improve the fit (conditional χ^2=9.94, df=10, p<.50), which suggests that none of the two-way interactions made an important contribution to the model. Table 4.8.3. shows the significance test for the main effects.

Table 4.8.3 Test for main effects of sex, education, and order on change in political interest

Effect added to the independence model in table 4.8.2.	Lambda parameters included in the model	Chi-square	DF	p	Conditional Chi-square	DF	p
Order	(C)(CO)	17.74908	18	.472	21.99523	4	.000
Sex	(C)(CS)	36.86408	20	.012	2.88023	2	.237
Education	(C)(CE)	38.27610	20	.008	1.46821	2	.480

Table 4.8.3 shows that the only variable that has a significant effect on changes in political interest is order of questions, or rather the experimental condition in Wave 1. Table 4.8.4 shows that none of the two-way interactions was significant.

Table 4.8.4 Test for two-way interactions between order, sex, and education

Effect added to the main effects model in table 4.8.2.	Lambda parameters included in the model	Chi-square	DF	p	Conditional Chi-square	DF	p
Order x sex	(C)(CO)(CS)(CE) (COS)	10.26810	10	.417	3.57099	4	.467
Order x education	(C)(CO)(CS)(CE) (COE)	9.43013	10	.492	4.40896	4	.353
Sex x education	(C)(CO)(CS)(CE) (CSE)	13.21290	12	.354	0.62619	2	.730

Since 45% of the cells have an expected frequency of less than 5, if age (3 categories) is included in the model as a categorical variable, age is included as a covariate, to see if age of respondents conditioned the effect of any of the independent variables. As table 4.8.5 shows, age did not condition the effects of any of the variables, order, sex, or education.

Table 4.8.5 Test for conditioning effects of age on order, sex, and education

Effect added to the main effects model in table 4.8.2.	Chi-square	DF	p	Conditional Chi-square	DF	p
Order x age	8.82224	10	.549	5.01685	4	.285
Sex x age	13.62798	12	.325	0.21111	2	.900
Education x age	13.26359	12	.350	0.57550	2	.748

Hence, the only effect that is in the best model is the main effect of order (χ^2=22.0, df=4, p=.000). The parameters in table 4.8.6 show how the order of questions in Wave 1 affected the changes that took place between the waves. Since logit models are designed for dichotomous variables, it is often helpful to use a special contrast to make the desired comparisons among the categories of the dependent variable when the variable is multinomial. Thus the first parameter for change contrasts those who changed their response versus those who did not, and the second parameter contrasts negative vs. positive changes.

Table 4.8.6 **Parameter estimates for the best model, odds, and proportion 1) changing the response, or 2) if changing, changing in a negative direction**

EFFECT LEVEL	λ-para-meters	Log-odds	Odds	Predicted proportion	Observed proportion
Change					
1.change/no change (ch/no ch)	-.440	-0.881	0.415	0.293	0.359
2. negative/positive (neg/pos)	.216	0.431	1.539	0.606	0.592
Change by order					
1.1. ch/no ch - interest->knowledge	-.053	-0.106	0.373	0.272	0.338
1.2. ch/no ch - knowledge->interest	.066	0.132	0.473	0.321	0.394
1.3. ch/no ch - control	.013	0.026	0.426	0.299	0.345
2.1. neg/pos - interest->knowledge	.284	0.568	2.715	0.731	0.733
2.2. neg/pos - knowledge->interest	-.324	-0.648	0.805	0.446	0.445
2.3. neg/pos - control	.040	0.080	1.668	0.625	0.626

Approximately 30% of respondents were expected to change their response from one wave to the next (the observed proportion was 6% higher than expected). This proportion did not vary much between conditions, although those who answered the knowledge questions before the general question in Wave 1 were slightly more likely to change their response than were respondents in the interest→knowledge group and the control group. More interesting differences become apparent when one looks at the parameters where the negative changes are compared with the positive changes. Thus, 73% of respondents who changed their response in the interest→knowledge group, were expected to do so in the negative direction. However, this proportion dropped to 63% for the control group and 45% for the knowledge→interest group, that is, more than half of the respondents that changed their response in the knowledge→interest group were expected to do so in a positive direction.

Table 4.8.7 shows the observed and expected frequencies and the standardized residuals for the best model (i.e., main effects of order)

Table 4.8.7 **Observed, (expected) frequencies and standardized residuals for the model with main effects of order on change in political interest**

			Change					
ORDER	SEX	EDUCATION	Negative change	Standard. residuals	No change	Standard. residuals	Positive change	Standard. residuals
I→K	male	compulsory	13(12.87)	.036	33(34.43)	-.245	6(4.70)	.602
I→K	male	m. th. comp.	22(26.73)	-.915	75(71.52)	.412	11(9.75)	.400
I→K	female	compulsory	19(15.59)	.863	39(41.72)	-.421	5(5.09)	-.289
I→K	female	m. th. comp.	20(18.81)	.275	51(50.33)	.095	5(6.86)	-.711
K→I	male	compulsory	9(8.07)	.326	21(27.87)	-1.302	16(10.05)	1.876
K→I	male	m. th. comp.	18(20.18)	-.486	75(69.69)	.637	22(25.13)	-.625
K→I	female	compulsory	12(11.76)	.071	41(40.60)	.063	14(14.64)	-.168
K→I	female	m. th. comp.	14(12.99)	.281	46(44.84)	.173	14(16.17)	-.540
control	male	compulsory	6(8.86)	-.960	33(26.86)	1.185	2(5.29)	-1.429
control	male	m. th. comp.	20(21.60)	-.345	67(65.51)	.185	13(12.89)	.030
control	female	compulsory	20(15.77)	1.065	44(47.82)	-.552	9(9.41)	-.134
control	female	m. th. comp.	16(15.77)	.058	44(47.82)	-.552	13(9.41)	1.170

4.9 The effect of knowledge on changes between waves

As discussed above, whether knowledge mediates the effects of order depends on a combination of age and education and it is not very clear how knowledge affects the relationship between order and political interest. The following analysis investigates the effects of knowledge on changes in political interest between the waves.

In order to avoid problems of small frequencies in the cells, responses to the knowledge questions were coded into two categories only, i.e., both/either answer correct, and both wrong/or don't know. For the same reason age was not included as a categorical variable but as a covariate.

Table 4.9.1 shows the goodness-of-fit statistics for the independence model, the main effects model, and the model with all two-way interactions.

Table 4.9.1 **Models for change in political interest with order, knowledge, sex, and education as explanatory variables**

Model	Lambda parameters included in the model*	Chi-square	DF	p
1. Independence	(C)	41.89147	30	.073
2. Main effects	(C)(CO)(CK)(CS)(CE)	12.22864	22	.952
3. Two-way interactions	(C)(CO)(CK)(CS)(CE)(COK) (COS)(COE)(CKS)(CKE)(CSE)	4.16465	10	.940

* C=change in political interest O=order of questions K=knowledge
E=education of respondent S=sex of respondent

The fit of the main effects model is very good, p=.952. The significance test for individual main effects is presented in table 4.9.2. The only variable that has a significant effect on changes between waves was the order of the questions in Wave 1.

Table 4.9.2 **Test for main effects of sex, education, knowledge, and order on change in political interest**

Effect added to the independence model in table 4.9.1.	Lambda parameters included in the model	Chi-square	DF	p	Conditional Chi-square	DF	p
Order	(C)(CO)	20.95582	28	.827	20.93565	2	.000
Knowledge	(C)(CK)	40.63094	28	.058	1.26053	2	.533
Sex	(C)(CS)	39.59972	28	.072	2.29175	2	.318
Education	(C)(CE)	38.40588	28	.091	3.48559	2	.175

Table 4.9.3 shows that none of the effects in table 4.9.2 were conditioned by the age of the respondents.

Table 4.9.3 **Test for conditioning effects of age on order, knowledge, sex, and education**

Effect added to models in table 4.9.2	Chi-square	DF	p	Conditional Chi-square	DF	p
Order x age	20.84003	26	.750	0.11579	2	.942
Knowledge x age	39.04547	26	.048	1.58547	2	.452
Sex x age	36.64555	26	.080	2.95417	2	.229
Education x age	35.80807	26	.095	2.59781	2	.273

Significance tests for all possible two-way interactions are presented in table 4.9.4.

Table 4.9.4 Test for two-way interactions between order, knowledge, sex, and education

Effect added to the main effects model in table 4.9.2	Lambda parameters included in the model	Chi-square	DF	p	Conditional Chi-square	DF	p
Order x knowledge	(C)(CO)(CK)(CS) (CE)(COK)	11.45937	20	.933	0.76927	2	.680
Order x sex	(C)(CO)(CK)(CS) (CE)(COS)	11.79885	20	.923	0.42979	2	.807
Order x education	(C)(CO)(CK)(CS) (CE)(COE)	11.86748	20	.921	0.36116	2	.835
Knowledge x sex	(C)(CO)(CK)(CS) (CE)(CKS)	6.88104	20	.997	5.34760	2	.069
Knowl. x educ.	(C)(CO)(CK)(CS) (CE)(CKE)	12.13646	20	.911	0.09218	2	.956
Sex x education	(C)(CO)(CK)(CS) (CE)(CSE)	11.03575	20	.945	1.19289	2	.552

Tables 4.9.2, and 4.9.4 show that changes in responses to the question about how frequently respondents followed what is going on in government and public affairs depended on the order of questions in the first wave, and on a combination of the variables knowledge and sex. The effect of these variables is depicted in table 4.9.5.

Table 4.9.5 **Parameter estimates for the best model, odds, and proportion 1) changing the response, or 2) if changing, changing in a negative direction**

EFFECT LEVEL	λ-para-meters	Log-odds	Odds	Predicted proportion	Observed proportion
Change					
1.change/no change (ch/no ch)	-.447	-0.893	0.409	0.290	0.366
2. negative/positive (neg/pos)	.168	0.336	1.400	0.583	0.577
Change by order					
1.1. ch/no ch - interest->knowledge	-.061	-0.122	0.363	0.266	0.338
1.2. ch/no ch - knowledge->interest	.061	0.122	0.463	0.316	0.394
2.1. neg/pos - interest->knowledge	.320	0.639	2.653	0.726	0.733
2.2. neg/pos - knowledge->interest	-.320	-0.639	0.739	0.425	0.445
Change by knowledge					
1.1. ch/no ch - both/either correct	-.018	-0.036	0.395	0.283	0.355
1.2. ch/no ch - both wrong/DK	.018	0.036	0.424	0.298	0.391
2.1. neg/pos - both/either correct	.099	0.199	1.708	0.631	0.609
2.2. neg/pos - both wrong/DK	-.099	-0.199	1.147	0.534	0.545
Change by sex					
1.1. ch/no ch - male	.004	0.009	0.413	0.292	0.364
1.2. ch/no ch - female	-.004	-0.009	0.406	0.289	0.368
2.1. neg/pos - male	-.132	-0.264	1.075	0.518	0.530
2.2. neg/pos - female	.132	0.264	1.823	0.646	0.631
Change by knowledge by sex					
1.1.1. ch/no ch - correct - male	.010	0.021	0.407	0.289	0.363
1.1.2. ch/no ch - correct- female	-.010	-0.021	0.383	0.277	0.294
1.2.1. ch/no ch - wrong - male	-.010	-0.021	0.419	0.295	0.367
1.2.2. ch/no ch - wrong - female	.010	0.021	0.430	0.301	0.386
2.1.1. neg/pos - correct - male	.161	0.322	1.809	0.644	0.616
2.1.2. neg/pos - correct - female	-.161	-0.322	1.612	0.617	0.595
2.2.1. neg/pos - wrong - male	-.161	-0.322	0.639	0.390	0.386
2.2.2. neg/pos - wrong - female	.161	0.322	2.062	0.673	0.652

The parameters in table 4.9.5 show that respondents in the knowledge→interest group were first of all more likely to change their response (31.6% in the knowledge→interest group and 26.6% in the interest→knowledge group) than were respondents in the interest→knowledge group and were, in addition, much more likely to change their response in a positive direction (57.5% vs. 27.4%,

respectively), i.e., saying that they followed what is going on in government and public affairs more often in Wave 2 than they did in Wave 1. The other parameters demonstrate the unexpected interaction between knowledge and sex. These effects were such that both men and women who knew the answer to at least one of the knowledge questions were expected to be slightly less likely to change their response than those who did not know the answers (the difference was not statistically significant). The most surprising differences become apparent when one looks at the comparison between negative and positive changes. The female respondents who knew one or both of the answers to the knowledge questions were sligthly less likely to show a negative change than were female respondents who knew neither of the answers (61% and 67%, respectively). This pattern was reversed for male respondents, the proportion being 64% for men who knew one or both of the answers, but *only* 39% for those who knew neither of the answers. Table 4.9.6 shows the observed and expected frequencies and standardized residuals for this model.

Table 4.9.6 **Observed, (expected) frequencies and standardized residuals for the model with main effects of order, and an interacting effect of knowledge and sex on change in political interest**

				Change					
ORDER	KNOWL.	SEX	EDUC.	Negative change	Standard. residuals	No change	Standard. residuals	Positive change	Standard. residuals
interest	correct	male	comp.	8(7.12)	.3285	17(17.80)	-.1895	2(2.08)	-.0538
interest	correct	male	m.th. c.	16(18.20)	-.5165	46(45.49)	.0760	7(5.31)	.7338
interest	correct	female	comp.	7(6.88)	.0473	20(19.87)	.0282	2(2.25)	-.1666
interest	correct	female	m.th. c.	5(5.93)	-.3810	19(17.13)	.4511	1(1.94)	-.6746
interest	wrong	male	comp.	5(4.28)	.3493	16(17.19)	-.2867	4(3.53)	.2479
interest	wrong	male	m.th. c.	6(6.67)	-.2606	29(26.81)	.4222	4(5.51)	-.6443
interest	wrong	female	comp.	12(9.97)	.6437	19(21.48)	-.5354	3(2.55)	.2812
interest	wrong	female	m.th. c.	15(14.95)	.0126	32(32.22)	-.0392	4(3.83)	.0888
knowl.	correct	male	comp.	6(4.50)	.7089	11(14.79)	-.9859	7(4.71)	1.0543
knowl.	correct	male	m.th. c.	15(15.18)	-.0453	54(49.92)	.5772	12(15.90)	-.9784
knowl.	correct	female	comp.	5(3.85)	.5885	13(14.63)	-.4270	5(4.52)	.2254
knowl.	correct	female	m.th. c.	5(5.35)	-.1516	20(20.36)	-.0797	7(6.29)	.2832
knowl.	wrong	male	comp.	3(2.38)	.4045	10(12.57)	-.7250	9(7.05)	.7331
knowl.	wrong	male	m.th. c.	3(3.67)	-.3510	21(19.43)	.3569	10(10.90)	-.2727
knowl.	wrong	female	comp.	7(9.25)	-.7400	28(26.24)	.3427	9(8.50)	.1698
knowl.	wrong	female	m.th. c.	9(8.83)	.0571	26(25.05)	.1895	7(8.12)	-.3924

4.10 News consumption and the effect of question order on political interest

Bishop (1986) found that respondents who were asked the question about how well they followed what is going on in government and public affairs before they were asked two knowledge questions answered the question with respect to how closely they generally followed the news. On the other hand, asking the knowledge questions (concerning respondents' U.S. Representative) first, was found to focus respondents' attention on their lack of knowledge about their U.S. Representative rather than on the contents of their long-term memory, based on how much they followed the news about government and public affairs by watching television, reading the newspapers, or listening to the radio. Furthermore, he suggests that those respondents who were unable to answer the knowledge questions and still said they

follow what is going on 'most of the time' did so 'because of the weight of evidence from their own experience, they are able to discount, or even ignore as trivial, the fact that they cannot momentarily think of what their congressman has done' (Bishop, 1986, p.14).

Bishop's (1986) interpretation of why this context effect occurs (i.e., by focusing respondents' attention on their lack of knowledge) is based on his analysis of think-aloud protocols. Should his interpretation be generalizable to other populations, i.e., that people who are not asked the knowledge questions before the general question usually answer the question with respect to how closely they follow the news, and that people who follow the news closely, are less likely to base their answer on their success or failure to answer the knowledge questions, this could be detected in the research described here by comparing responses to the question concerning government and public affairs to responses to questions about how often people watch news on television, listen to radio and read newspapers. If the interpretation is correct, one would expect respondents who are heavy news consumers to be less influenced by the order of the questions than respondents who do not generally follow what is going on. As table 4.10.1 shows, there is no evidence for Bishop's (1986) interpretation that respondents who follow the news closely are less likely to be influenced by being asked the knowledge questions before the general question.

Table 4.10.1 Political interest (Wave 1) by order of questions, controlling for news consumption

	Follow news daily on TV, radio and in at least one newspaper				*Do not follow news on TV, radio and in a newspaper, every day*			
	interest knowl.	knowl. interest	interest only	total	interest knowl.	knowl. interest	interest only	total
most of the time	71.6%	55.3%	66.9%	64.2%	45.5%	37.9%	46.4%	43.4%
some of the time	23.4	29.8	28.8	27.4	37.8	32.6	33.2	34.6
only now and then	5.0	14.9	4.3	8.4	16.7	29.5	20.4	22.0
Total (n)	141	161	139	441	209	190	196	595
χ^2=17.50; df=4; p=.01					χ^2=10.56; df=4; p=.05			
Size of effect (71.6+66.9)/2-55.3=13.95%					(45.5+46.4)/2-37.9=8.05%			

Table 4.10.1 shows that although respondents showed a great deal of consistency in the sense that respondents who followed the news on all of the media every day were much more likely to say they followed what is going on in government and public affairs 'most of the time', they were no less likely to be affected by the order of the questions than respondents who followed the news less frequently, and in fact the size of the effect was much larger for the respondents who followed the news daily (13.95% vs. 8.05%).

4.11 Think-aloud and political interest

In an attempt to aid interpreting and explaining the context effects described above, 17 students at the University of Iceland were asked to think-aloud while answering these questions. Of these 17 subjects 15 knew the name of the Speaker of the plenary session for both houses of Parliament - a question that may well have been much easier at the time of the think-aloud experiments than it was at the time of the survey. At the time of the think-alouds a new president had been elected, a woman author well known for her children's books (only 35% of respondents in the survey knew the answer when they were interviewed).

Only two subjects knew which minister was responsible for the administration of the Statistical Bureau. Despite the fact that almost as many respondents in the survey were able to answer correctly the question about the minister for the Statistical Bureau (27.6%) as the question about who was the Speaker of the plenary session for both houses of Parliament (35.4%) it appeared to be the case that only one of the questions, i.e., the question about the Speaker of the plenary session for both houses of Parliament, conditioned the effect of order on responses to the interest question. It was suggested that this was due to the nature of the questions, i.e., that more respondents were able to guess who of 11 ministers was responsible for the Statistical Bureau. The name of the minister was not required, but subjects had to know the name of the Speaker of the plenary session for both houses of Parliament, who could be any of 63 members of Parliament, making it very difficult to guess who s(he) was. Hence, those respondents who managed to guess which minister was responsible for the Statistical Bureau were aware of the fact that they had not known the answer although they gave the correct response, and thus they were affected in the same way as respondents who did not know (or give) the right answer. If this is a correct interpretation of the seemingly 'different' effects of the knowledge questions, it is more consistent with the reinterpretation hypothesis (framing hypothesis), or possibly a self-protection mechanism than it is with self-perception theory. If self-perception theory applied, one would expect those respondents who gave a correct response to infer that they followed what was going on more often than respondents who did not answer correctly. This is not necessarily true of cognitive dissonance theory, i.e., if the respondent is aware of the fact that he did not know the answer but was merely lucky in his guessing, this will most likely give rise to dissonant thoughts and, hence the dissonance is resolved when the respondent reports following what is going on less frequently than he would have had he truly known the answer.

Taken together, 2 subjects (both in the condition where the knowledge questions preceded the interest question) answered both questions correctly, 13 respondents

answered one question correctly, and only 2, one from each condition, knew neither answer. (see table 4.11.1)

Table 4.11.1 Political knowledge and interest in think-aloud protocols

	Interest→knowledge				*Knowledge→interest*			
	Both correct	Either correct	Neither correct	Total	Both correct	Either correct	Neither correct	Total
never/hardly at all	0	2	0	2	0	0	1	1
only now and then	0	0	0	0	1	0	0	1
some of the time	0	4	0	4	1	4	0	5
most of the time	0	1	1	2	0	2	0	2
Total (n)	0	7	1	8	2	6	1	9

The protocols from the two subjects who were not able to answer the knowledge questions show clear evidence of embarrassment over not being able to answer these questions and also how this affects responses to the interest question.

Respondent no. 12, a 29 year old female

This subject was presented with the knowledge questions, to which she did not know the answers, before the political interest question. In response to the interest question she said she hardly ever followed what was going on in government and political affairs. When asked about what she remembered from answering these questions she said:

> 'Yes, I thought I was awfully stupid not to know this. This was something I felt I ought to know and I found it embarrassing. I thought the question was, so to speak, disturbing. About the minister, I thought I had to..... I haven't been attentive enough about politics to answer that, so I tried to think of some responsible men whom I knew were politicians or whom I believed in. (*And the last question?*) Since I could not answer the knowledge questions I thought: NO, I'd better try to excuse myself by saying that I never follow what is going on.'

Respondent no. 11, a 25 year old female

She was asked about her interest in politics before she was asked the knowledge questions. Her answers were the following:

> 'I usually follow what is going on in politics 'most of the time'. I am really into politics, so I try to be knowledgeable about most issues. But I haven't 'dived deep' into everything I have wanted to dive into. I would like to know a lot more about the EC and the 'EEA', the fishing quotas and fishing policies, so I would really like to be well informed about all these issues, but I don't give myself time for that. But I try to learn something about all of them.'

> 'Spekaer of the plenary session of both houses of Parliament? Oh my God - Gudmundur Einarsson. (*It is Gudrun Helgadottir*) Gudrun Helgadottir, of course, what am I thinking. You know that, you always see her in that chair - God!! You don't even get the name'.

> 'The Statistical Bureau, hm, hm. Hang on. The Statistical Bureau.... Huh, shall I think aloud, oh my God. I'm just trying to allocate the Statistical Bureau some place in the system. Of course the Statistical Bureau takes care of the National Registry. The Statistical Bureau..... one must have heard that at some point. Ummmm, it's not the Industrial Ministry, and it is not the Ministry of Fisheries, it's not ..... no, it can't be the Ministry of Trade and Commerce, not the Ministry of Foreign Affairs, not the Ministry of Education. Can it be the Ministry of Education?'

When asked about what she remembered thinking she said:

> 'Well, first you ask very generally, and I think I can answer ... of course I answer as I think I am, but of course I panic when you ask me two questions that I cannot answer after I have told you that I follow rather closely what is going on in government and public affairs. So, I feel ashamed of myself for having said that and not being able to answer the questions as I would have liked.'

Both of the above subjects refer to some kind of cognitive dissonance, but it is also obvious that only the first subject is able to resolve this dissonance by saying that she hardly ever follows what is going on in politics. However, the retrospective account given by the latter subject (number 11) also lends some support to the framing hypothesis, i.e., that the knowledge questions have an effect on respondents' interpretation of what it means to follow what is going on in politics 'most of the time'. The subject says that she 'answers as she thinks she is', but after having

exposed her ignorance she feels ashamed of herself for having said that she follows what is going on most of the time. Despite this, it is difficult to argue that the framing hypothesis has gained much support unless some evidence can be found for re-interpretation among the subjects who knew at least one of the answers. Unfortunately, this is not obvious in any of the protocols.

4.12 Conclusion

It might seem to be a straightforward conclusion from the above analysis that merely by asking the two knowledge questions we change people's self-perception of how frequently they follow what is going on in government and public affairs, as has indeed been suggested by Bishop (1987). Both Bem's (1967, 1978) self-perception theory and Festinger's (1957) cognitive dissonance theory would predict that a respondent who is unable to answer knowledge questions concerning political knowledge before being asked a question about how often he 'follows what is going on in government and public affairs' would be less likely to say he follows what is going on 'most of the time'. According to Bem's self-perception theory, the person who cannot answer the knowledge questions infers that since (s)he does not know the answers, (s)he probably does not follow what is going on 'most of the time'. Cognitive dissonance theory, on the other hand, would explain the lowered probability of a respondent reporting that (s)he follows what is going on 'most of the time' with reference to a tension state or dissonance. Having been unable to answer the knowledge questions, and to the extent that the option 'most of the time' has positive qualities and the options 'some of the time' or less have negative qualities, the respondent experiences cognitive dissonance that (s)he is motivated to resolve, in one way or the other. This cognitive dissonance could be resolved, for example, by discarding the knowledge questions as having no relevance to the question about how closely they '..follow what is going on in government and public affairs', or by

re-evaluating their perception of how closely they think they follow what is going on. In other words, the respondent may well (but not necessarily) change his self-perception of how closely he follows politics as a consequence of having been made aware of dissonant cognitions.

The major factor that casts doubt on this interpretation, that people's self-perceptions are being changed in the process of being 'measured' is the fact that respondents (except 18-30 year olds with compulsory education only) are affected by the order of the questions whether or not they knew the answers to the knowledge questions. Should respondents who correctly answer the knowledge questions *before* answering the interest question be less likely to say that they follow what is going on 'most of the time' than respondents who answer the knowledge questions *after* the interest question? On the contrary, according to most consistency theories, these respondents should be *more* likely to say that they follow what is going on 'most of the time'. If, as Bem (1967, 1978) claims, people infer from their own overt behaviour what their attitudes, opinions, and other internal states are, the respondent who is able to answer both of the knowledge questions should infer from that, that he follows what is going on 'most of the time'. Festinger's (1957) cognitive dissonance theory also seems to fail to explain why a respondent who knows the answers to both the knowledge questions should be less likely to say that (s)he follows what is going on 'most of the time' if the knowledge questions are placed before the interest question rather than after. It is not at all obvious why answering both of the knowledge questions correctly and responding 'most of the time' to the interest question should lead to a state of cognitive dissonance or reduce the likelihood of respondents saying they follow what is going on most of the time.

The finding (although not well established) that respondents who were presented with the knowledge question after the interest question in Wave 1 changed their responses to reduce inconsistency when they were asked the interest question in

Wave 2 supports the claim made by Henninger and Wyer (1976) and Wyer and Hartwick (1980) that the Socratic effect, which predicts an increase in consistency between related beliefs over repeated administrations of a questionnnaire, depends on the type of propositions. That is, whether or not the inconsistency is eliminated in the initial session depends on whether potential premises (in this case the knowledge questions) are before or after the potential conclusion (the interest question). This finding also demonstrates that it is not the recency of the information (the answers to the knowledge questions) that is the crucial factor in setting off the context effect, but more so the perceived relevance of the information. Then why do respondents perceive the answers to the knowledge questions as the most relevant basis for their answer to the political interest question? As has been repeatedly emphasized, people typically base their judgements on only a few pieces of information that are accessible in memory at the time (cf. Wyer and Hartwick, 1980; Wyer and Srull, 1980), and thus the similarity between the concepts that these questions are dealing with, and the reported embarrassment caused by not being able to answer the knowledge questions (Bishop, 1986), may well be the major determinant of the perceived relevance. Given that the principle of co-operation (see Grice, 1975) is operating in the interview situation, one would hardly be surprised to find that answers to the general question are influenced by the knowledge questions, i.e., there is hardly any point, the respondent may think, in including the knowledge questions in the questionnaire if they are irrelevant to all other questions. It is not at all obvious what the researcher means when he asks a person if (s)he follows what is going on in government and public affairs most of the time. As Bradburn et al. (1987) point out, respondents will 'use any information they have to generate a reasonable answer' (p.160), and it seems to be quite reasonable to infer that the researcher defines 'most of the time' as knowing the answers to knowledge questions such as those included in the questionnaire. On the other hand, as Wyer and Hartwick (1984) point out, it is very likely that the effects found are confined to the particular situational context, that is, that the variables may lose some, or all, of their effect, when the two

situational contexts are physically and psychologically different. This, in addition to the finding that respondents were affected by the order of the questions more or less independently of their level of knowledge, suggests that we as researchers are not changing people's self-perceptions of how frequently they think they follow what is going on in government and public affairs, but rather that we are providing the definition of what we mean by following government and public affairs 'most of the time'. That is, asking respondents about their 'political knowledge' in the same questionnaire as the question about how well they follow what is going on in government and public affairs implies that a person who follows what is going on 'most of the time' knows the answers to these and similar questions. Thus, the respondents probably perceive the knowledge questions as a 'truth-check' (why else would the questions be there?), and might as well be prepared for more questions of that type, hence explaining the lowered probability that respondents who know both of the answers say they follow what is going on 'most of the time', when the knowledge questions precede the interest question.

5

The most important issues

5.1 Introduction

Schuman and Presser (1981) discuss how the distribution of responses to a question about what people believe to be the most important problems facing the country changes when the question is closed and specific response alternatives are provided. Social scientists generally recommend the employment of closed questions for the sake of standardization. Converse and Presser (1986) claim that closed questions are more specific than open questions because they spell out the response alternatives and therefore they are more apt to communicate the same frame of reference to all respondents. In addition such questions make interviewing, coding and analysis much easier. However, the relative merits of open-ended and closed questions have been the subject of a great deal of research and debate. Those who argue for the superiority of open-ended questions, claim they are better for gathering information on complex issues (cf. Bailey, 1978; Kiecolt, 1978), if the researcher wants a very detailed answer, or wants to find out which aspects of an issue are uppermost in the respondent's mind (Moser and Kalton, 1971), and finally in the measurement of sensitive or disapproved behaviour, where closed questions have been shown to lead to underreporting (Bradburn and Sudman, 1979).

In their experiment with an open-ended and a closed form of the question asking people what they believed to be the most important problem facing the country, Schuman and Presser (1981) found that respondents who were given the closed form of the question were more than twice as likely to mention crime and violence than respondents answering the open-ended question. They suggest that this may be the

result of the question's wording and people's perception of crime as a local problem, i.e that the reference to 'this country' may actually deter respondents from mentioning crime as the most important problem. However, when crime is explicitly given as a response option, it is legitimized as an alternative.

Another possibility, related to the above, but not explicitly mentioned by Schuman and Presser (1981), is that the probability of respondents thinking of crime and violence as the most important problem facing the country is greatly enhanced by the inclusion of the category as a response alternative. As Schuman and Presser state when discussing the merits of open-ended questions: 'Respondents are apt to be influenced by the specific closed alternatives given, and ... therefore a more valid picture of respondents' choice is obtained if they must produce an answer themselves' (1981, p. 80). They also argue that 'almost all respondents work within the substantive framework of priorities provided by the investigators, whether or not it fits their own priorities' (Schuman and Presser, 1981, p.86) and are unlikely to use the 'other' category provided on the closed question form. In other words, it is conceivable that the specific closed alternatives lead to a change in the interpretation of the question.

A related phenomenon that may also be an explanatory factor in this context is the problem of acquiescence or the tendency of some respondents to agree with survey items. Schuman and Presser (1981) describe three different interpretations of this tendency, found in the literature. The prevailing view in psychology has regarded acquiescence as a personality trait (cf. Couch and Keniston, 1960), although it has, for example, been challenged by Rores (1965) and Nunnally (1978) who believe acquiescence to be of little importance 'either as a measure of personality or as a source of systematic invalidity in measures of personality and sentiments' (p. 669). The other two interpretations, assuming a relationship between acquiescence and education and social status, come out of survey research and, if correct, would

suggest it to have a more profound influence in survey research and other research based on samples of the general population than in psychological research that usually relies on samples of college students. Lenski and Leggett (1960) and Carr (1971) interpret acquiescence as a form of deference shown by low-status respondents towards the interviewer, but Campbell, Converse, Miller and Stokes (1960, p. 513) believe it to be the 'tendency for poorly educated people to be uncritical of sweeping statements and to be "suggestible" where inadequate frames of reference are available'. Hence, the latter interpretation also gives one reason to suspect that poorly educated people answering a question such as the question about the most important problem facing the country will be more susceptible to the form of the question than people with more education.

To test this a question similar to the question about the most important problem was constructed. Instead of closing the question and giving five response alternatives, the question was left open but in the preamble two examples of issues or problems were given as a clarification. The wording of the question was as follows: 1) 'Issues such as Albert's affair and the idea of declaring the Nordic countries free of nuclear weapons are much talked about these days. Which issues of national importance are you most concerned about?'; 2) 'Issues such as pay disputes and inflation are much talked about these days. Which issues of national importance are you most concerned about?'; 3) 'Which issues of national importance are you most concerned about these days?'

5.2 Effect of prompting

Table 5.2.1 shows that providing respondents with examples of what kind of issues might be the most important problems facing the nation has a very substantial influence on responses. More than 70% of respondents said they believed one of the prompts was the most important issue of national importance. Just under a quarter of respondents who were not prompted mentioned the general example pay disputes,

and inflation as the most important issues and only 14.6% believed Albert's affair was the most important. No one even mentioned declaring the Nordic countries free of nuclear weapons without being prompted, but nearly a fifth of respondents who were prompted with that issue said it was the most important issue of national importance at that time. Contrary to the results from the pilot study, there does not seem to have been any support for the hypothesis that respondents who were not prompted were more likely to be unable to tell which issues of national importance they were most concerned about. However, respondents in this group certainly came up with a greater variety of issues than the other two groups. Issues that were not mentioned by at least one percent of respondents in all three waves were collapsed and called 'other'.

Table 5.2.1 **The most important issues and experimental condition in Wave 1**

	Prompted: Albert/ nukes	Prompted: pay disp./ inflation	Not prompted	Total
None	10.6 %	19.3 %	15.6 %	15.3 %
Albert's affair	58.3	2.1	14.6	23.7
Nuclear-free North	18.6	0.0	0.0	5.6
Pay disputes	6.1	63.1	20.9	29.9
Inflation	0.3	10.0	2.3	4.1
Elections - politics	1.9	1.5	11.6	5.5
Regional policy	0.0	0.9	13.3	5.4
Economy	0.3	0.6	6.5	2.8
Other	3.8	2.4	15.3	7.8
Total (n)	312	331	398	1041

χ^2=813.9; df=16; p=.001

In Wave 2 all respondents were asked what they believed to be the most important national issue, but this time they were not prompted. As can be seen in table 5.2.2 there were still statistically significant differences between the three groups (prompted with specific examples, prompted with general examples, and not prompted). However, the differences were minute compared to Wave 1. Less than

7% of respondents prompted with the specific examples in Wave 1 mentioned them in Wave 2, as opposed to 2.9 and 2.1% in the other two groups. The 16.5% of respondents not prompted or prompted with general examples said the general examples, pay disputes and inflation, were the most important issues. The comparable figure for the group prompted with the specific examples was 12.4%, with the differences only about 4%.

Table 5.2.2 **The most important issues in Wave 2 and the experimental condition in Wave 1**

	NO PROMPTS IN WAVE 2			
	Prompted: Albert/ nukes in Wave 1	Prompted: pay disp./ inflation in Wave 1	Not prompted in Wave 1	Total
None	14.2 %	18.0 %	15.2 %	15.8 %
Albert's affair	3.3	2.2	1.2	2.1
Nuclear-free North	3.6	0.7	0.9	1.7
Pay disputes	9.5	13.3	13.7	12.3
Inflation	2.9	3.2	3.0	3.0
Elections - politics	45.3	40.6	39.6	41.7
Regional policy	2.9	1.8	7.7	4.4
Economy	5.8	8.3	7.7	7.3
Other	12.4	11.9	11.0	11.7
Total (n)	274	278	336	888

χ^2=33.0; df=16; p=.01

The wording of the question was slightly changed in the Wave 3 that took place after the election, that is, people were asked about their recollection: 'Which issues did you find the most important in the election campaign?' No significant differences could be seen between responses of the three groups to this question, so although prompting had a substantial effect it did not last a very long time, since no trace of it could be seen in the third and final wave that took place just over a month after the first wave. However, it is possible that the different wording of the question in Wave 3 diminished the effects of the prompting (see table 5.2.3).

Table 5.2.3 The most important issues in Wave 3[5]

	NO PROMPTS IN WAVE 3			
	Prompted: Albert/ nukes in Wave 1	Prompted: pay disp./ inflation in Wave 1	Not prompted in Wave 1	Total
None	22.4 %	27.8 %	25.2 %	25.1 %
Albert's affair	6.3	3.5	5.3	5.0
Nuclear-free North	3.9	1.5	2.2	2.5
Pay disputes	14.1	12.7	12.8	13.2
Inflation	5.1	5.8	4.0	4.9
Elections - politics	3.5	3.1	2.8	3.1
Regional policy	4.3	5.0	10.3	6.8
Economy	24.7	28.6	24.3	25.7
Other	15.7	12.0	13.1	13.5
Total (n)	255	259	321	835

χ^2=19.9; df=16; p=.226

The analysis above focussed solely on respondents' first choice, but they were allowed to name the three issues of national importance they were most concerned about. Looking at which issues respondents named as the second and third most important issues of national importance, one can see that for most categories another 5-6% of respondents identified these issues as the most important ones. The increase seems to have been approximately the same in all experimental conditions for all categories of responses other than those used as prompts, and a somewhat greater increase for the 'other' category in the group that was not prompted. Thus, it seems unlikely that much important information will be lost by sacrificing the second and the third most important issues for the sake of simplicity of statistical analysis. Table 5.2.4. shows the percentage of respondents in each experimental group that mentioned each issue (multiple response).

[5] The wording of the question in Wave 3 was different from Waves 1 and 2. Respondents were asked which issues of national importance they believed to have been the most important in the election campaign.

Table 5.2.4 **The most important issues in Waves 1, 2, and 3 (multiple response - %)**

	Prompted: Albert/ nukes in Wave 1			Prompted: pay disp./ inflation in Wave 1			Not prompted in Wave 1			Total		
	Wave											
	I	II	III	I	II	III	I	II	III	I	II	III
Albert's affair	72.1	4.7	8.2	8.5	2.2	4.2	23.4	2.4	5.6	33.2	3.0	6.0
Nuclear-free North	63.1	4.7	4.7	2.1	1.4	2.7	2.5	1.5	3.1	20.6	2.5	3.5
Pay disputes	21.2	14.2	22.0	78.5	20.5	19.3	39.9	16.1	21.2	46.6	16.9	20.8
Inflation	5.1	4.4	7.1	35.3	5.4	8.5	6.0	5.4	5.9	15.1	4.2	7.1
Elections - politics	5.4	47.1	5.9	5.1	43.2	3.1	17.8	42.9	3.7	10.1	44.3	4.2
Regional policy	4.5	3.6	5.1	4.8	2.2	6.9	23.4	9.2	13.7	11.8	5.3	9.0
Economy	20.8	7.7	27.5	23.0	9.0	30.9	27.1	9.2	27.7	23.9	8.7	28.6
Other	18.9	23.0	34.5	15.4	17.3	33.6	38.7	19.3	30.2	25.4	19.8	32.6
None	10.6	14.2	22.4	19.3	18.0	27.8	15.6	15.2	25.2	15.3	15.8	25.1
Total (n)	312	274	255	331	278	259	398	336	321	1041	888	835

Table 5.2.4 shows the distribution of responses in all three waves and shows that around three quarters of respondents who were prompted with the specific examples said one or both of the prompts were among the three most important issues at the moment. A full 79% of respondents prompted with pay disputes and inflation said they believed pay disputes to be one of the three most important issues of national importance, but 35% in this group believed inflation was one of the three most important issues. The table also shows that although there are statistically significant differences between responses, both in Wave 1 and 2, prompting in Wave 1 did not have a very large effect on responses in Wave 2 although respondents who were prompted were slightly more likely than other respondents to mention the particular issues they were prompted with.

5.3 Effect of prompting and demographic variables

Social scientists (cf. Carr, 1971; Campbell et al., 1960) have found that aquiescence is more common among people with shorter education and thus it is not unlikely that education also conditions the effects of prompting. In line with these findings, one

would expect respondents with the least education to be the most likely to say that the issues mentioned in the preamble to the question were the issues they were most concerned about. Table 5.3.1 shows that it depends on the education of respondents what kind of issues they believed to be of greatest importance. The shorter their education, the more likely respondents were to say that the specific examples (Albert's affair and declaring the Nordic countries free of nuclear weapons) were the most important issues of national importance. The more educated respondents were more likely to mention the more general issues such as pay disputes and inflation. However, the interaction between prompting and education was not significant (L.R.$\chi^2_{issue*prompt*education}$=8.5, df=12, p=.742).

Table 5.3.1 The most important issues in Wave 1 and education of respondents - %

	Prompted: Albert/ nukes in Wave 1			Prompted: pay disp./ inflation in Wave 1			Not prompted in Wave 1			Total		
	*EDUCATION**											
	I	II	III	I	II	III	I	II	III	I	II	III
None	14.5	7.1	5.4	28.1	7.8	8.3	21.8	9.3	5.0	21.8	8.1	6.4
Albert/nukes	80.0	78.7	70.3	2.3	2.6	2.1	16.2	13.6	2.5	28.8	31.9	22.4
Pay disputes/inflation	1.8	7.1	13.5	65.6	84.3	75.0	17.9	25.0	30.0	28.3	36.9	42.4
Other	3.6	7.1	10.8	3.9	5.2	14.6	44.1	52.1	62.5	21.1	23.0	28.8
Total (n)	110	127	37	128	115	48	179	140	40	417	382	125
	χ^2=14.2; p=.05			χ^2=26.9; p=.001			χ^2=21.4; p=.01			χ^2=45.7; p=.001		

* I = compulsory education, II = Upper secondary school, III = University education
L.R. $\chi^2_{issue*prompt*education}$=8.5, df=12, p=.742

Respondents with a university education were also less likely to say that they couldn't think of any issues of national importance than respondents with less education and they were more likely to state other issues than those given as examples. This suggests that the more educated respondents named more issues than less educated respondents, but respondents were asked to restrict their answer to the three issues they believed to be of the greatest importance (see table 5.3.2).

Table 5.3.2 **Mean number of issues mentioned in each condition in the first wave by education**

	Prompted: Albert/ nukes	Prompted: pay disp./ inflation	Not prompted	Total
Compulsory education	1.52 (110)	1.09 (128)	1.11 (179)	1.21 (417)
Upper secondary school	1.61 (127)	1.40 (115)	1.33 (140)	1.45 (382)
University	1.95 (37)	1.31 (48)	1.65 (40)	1.61 (125)
Total	1.62 (274)	1.25 (291)	1.26 (359)	1.36 (n=924)

Significantly more issues were mentioned by respondents in the group prompted with the specific examples than in the groups prompted with the general examples and no examples ($F_{2,915}$=19.1 p=.001). Education had a significant effect on the number of issues ($F_{2,915}$=14.0 p=.001) but there was no significant interaction between education and question form ($F_{4,915}$=1.7 p=.147).

It is debatable whether one should expect people to give the same response to this question on two different occasions, since their opinions may well change frequently, as may the issues that are generally considered to be the most important. However, the first two interviews were only between two and three weeks apart, and certainly one would not expect more changes in one group than another, but table 5.3.3 shows that the stability or reliability of responses was much smaller in the group that was prompted with specific examples than in the other two groups.

Table 5.3.3 **Reliability or stability of answers in Wave 1 and Wave 2 and education (i.e., % of respondents giving the same response in Wave 1 and Wave 2)**

	Prompted: Albert/ nukes	Prompted: pay disp./ inflation	Not prompted	Total
Compulsory education	12.9 %	29.2 %	34.7 %	27.2 %
Upper-secondary educ.	4.5	15.3	31.1	17.5
University education	17.6	24.4	45.7	29.1
Total	10.2	21.9	32.4	22.3
Total (n)	239	245	304	788

	L.R. Chi-Square	DF	Probability
Issue reliability by education by question form	5.4	4	.246
Issue reliability by question form	49.8	2	.000
Issue reliability by education	11.5	2	.003

Table 5.3.3 shows that the reliability or stability of opinion was by far the greatest in the group that was not prompted (32.4% gave the same answer in Wave 1 and Wave 2), but respondents in the group that was prompted with the specific examples were very unlikely to give the same response to the open question in Wave 2 (only 10.2% gave the same response on those 2 occasions). For some reason, the more general examples (pay disputes and inflation) did not seem to have as strong an effect on responses as the more specific examples, but this depended to some extent on the education of respondents, although there was no significant interaction between issue reliability, education and prompting (L.R. χ^2=5.43, df=4, p=.246).

As depicted in table 5.3.4 there was a highly significant difference between the answers men and women gave to this question when they were not prompted and women were more likely than men to say they couldn't name any nationally important issues. Prompting seems to have reduced the variability of responses and the difference between men and women almost vanished. However, the interaction between issue, prompting and sex was significant (L.R. $\chi^2_{issue*prompt*sex}$=16.5, df=6, p=.011). The different prompts seem to have been equally influential where

men were concerned: 76.9% of men who were prompted with the specific examples said that one of them is the most important issue and 78% when prompted with the more general examples (χ^2=.057, df=1, p=.81). This was different for the women. They were more likely to agree with the specific examples (77%) than the general ones, but 67.5% of the women prompted with pay disputes and inflation said one of these was the most important (χ^2=3.4, df=1, p=.065).

Table 5.3.4 **The most important issues in Wave 1 and sex of respondents - %**

	Prompted: Albert/ nukes in Wave 1		Prompted: pay disp./ inflation in Wave 1		Not prompted in Wave 1		Total	
	*Sex**							
	F	M	F	M	F	M	F	M
None	10.5	10.6	25.3	14.1	18.7	12.3	18.3	12.4
Albert/nukes	77.0	76.9	1.9	2.3	11.8	17.4	28.3	30.3
Pay disputes/inflation	9.2	3.8	67.5	78.0	31.5	14.4	35.8	32.3
Other	3.3	8.8	5.2	5.6	37.9	55.9	17.7	25.0
Total (n)	152	160	154	177	203	195	509	532
	χ^2=7.4 p=.059		χ^2=6.6 p=.084		χ^2=24.3 p=.001		χ^2=13.6 p=.004	

* F = female, M = male

L.R. $\chi^2_{issue*prompt*sex}$=16.5, df=6, p=.011

Age of respondents also seems to have conditioned the effects of prompting. The older the respondents the more likely they were to be affected by the prompts, whether or not the prompts were specific or general (see table 5.3.5). An interesting difference can be seen between the group prompted with the specific examples and the one not prompted. The youngest respondents were less likely than other respondents to say that the specific examples were the most important issues when prompted with them (72% vs. 78% and 83% in the older age groups), but they were

much more likely to volunteer this response when not prompted (27% vs. 11 and 6%).

Table 5.3.5 The most important issues in Wave 1 and education of respondents - %

	Prompted: Albert/ nukes in Wave 1			Prompted: pay disp./ inflation in Wave 1			Not prompted in Wave 1			Total		
	*Age**											
	I	II	III	I	II	III	I	II	III	I	II	III
None	16.2	6.9	8.6	23.1	18.8	14.9	19.4	11.8	17.3	19.5	12.8	14.1
Albert/nukes	72.1	77.9	82.9	1.0	3.1	1.5	27.4	10.6	5.8	33.9	27.1	27.0
Pay disputes/inflation	7.2	6.9	4.3	70.2	71.3	82.1	24.2	23.5	21.2	32.7	35.4	33.2
Other	4.5	8.4	4.3	5.8	6.9	1.5	29.0	54.1	55.8	13.9	24.7	25.7
Total (n)	111	131	70	104	160	67	124	170	104	339	461	241
	χ^2=8.6 ; p=.20			χ^2= 6.5; p=.37			χ^2= 36.7; p=.01			χ^2= 23.6; p=.01		

* I = 18-30, II = 31-50, III = 51-70

L.R. $\chi^2_{issue*prompt*age}$=27.7, df=12, p=.006

The specific issues were selected because they had had extensive media coverage during the weeks before the survey was carried out. Thus, it is not unlikely that frequency of watching news and reading newspapers did actually influence responses to the question about the most important issues and even mediated the effect of prompting (see table 5.3.6).

Table 5.3.6 **The most important issues in Wave 1 and news consumption of respondents - %**

	Prompted: Albert/ nukes in Wave 1		Prompted: pay disp./ inflation in Wave 1		Not prompted in Wave 1		Total	
	*News consumption**							
	H	L	H	L	H	L	H	L
None	8.5	12.3	8.6	29.6	9.1	22.0	8.8	21.3
Albert/nukes	76.6	77.2	2.5	1.8	13.1	16.0	27.5	30.9
Pay disputes/inflation	6.4	6.4	80.9	65.7	24.7	21.5	37.7	30.6
Other	8.5	4.1	8.0	3.0	53.0	40.5	25.9	17.2
Total (n)	141	171	162	169	198	200	501	540
	χ^2=3.5 p=.32		χ^2=25.5 p=.01		χ^2=15.0 p=.01		χ^2=40.8 p=.01	

* H = heavy (follow news daily on all media, i.e., TV, radio and newspapers),
L = light (do not follow news daily on all media)

L.R. $\chi^2_{issue*prompt*news}$=5.14, df=6, p=.526

The main difference between respondents who were classified as heavy news consumers and light consumers was that light consumers were more likely to say that they couldn't think of any nationally important issues. Another difference seems to have been in the effects of prompting. The specific examples, Albert's affair and declaring the Nordic countries free of nuclear weapons, seem to have had the same influence whether respondents followed the news on all media every day or not. The general examples, on the other hand, seem to have had a greater effect on respondents who followed the news every day than on other respondents. However, the interaction between issue, prompting and following the news was not significant.

5.4 Prompting and non-response

Results from the pilot study indicated that respondents who were asked the open-ended question about which issues of national importance they were most concerned

about, without being given any examples, were more likely than other respondents to say that they couldn't think of any important issues. However, as discussed above, there was no clear indication of this effect in the main study, and in fact, respondents who were prompted with the general examples, pay disputes and inflation, appeared to be the most likely to give no response (see table 5.4.1).

Table 5.4.1 Non-response and prompting in Wave 1

	Prompted: Albert/ nukes	Prompted: pay disp./ inflation	Not prompted	Total
No response	10.6 %	19.3 %	15.6 %	15.3 %
One or more issues mentioned	89.4	80.7	84.4	84.7
Total (n)	312	331	398	1041

χ^2=9.567; df=2; p=.008

For some reason, the specific examples seemed to reduce the likelihood of respondents saying that they were not concerned about any issues in particular, but there were significantly more respondents, both in the group that was prompted with the general examples (χ^2=9.62, df=1, p=.002) and in the group that was not prompted (χ^2=3.77, df=1, p=.05), who reported not being concerned about any issues of national importance. However, there was no statistically significant difference between the group prompted with the general examples and the group that was not prompted (χ^2=1.79, df=1, p=.182), in terms of non-response.

It was suggested above that poorly educated respondents were more likely to be affected by the prompts given, and since age and sex are strongly related to education, the effect of these variables on non-response and the effects of prompting were examined with logit analysis. The analysis shows that prompting, education

and sex had an interacting effect on whether or not people provided an answer to the question.

Table 5.4.2 Models for non-response with prompting, sex, education and age as explanatory variables

Model	Lambda parameters included in the model*	Chi-square	DF	p
1. Independence	(N)	74.86	35	.000
2. Main effects	(N)(NP)(NS)(NE)(NA)	22.78	29	.786
3. Two-way interactions	(N)(NP)(NS)(NE)(NA) (NPS)(NPE)(NPA)(NSE) (NSA)(NEA)	14.48	16	.563
4. Three-way interactions	(N)(NP)(NS)(NE)(NA) (NPS)(NPE)(NPA)(NSE) (NSA)(NEA)(NPSE)(NPSA) (NPEA)(NSEA)	1.50	4	.827

* N=no issues mentioned P=prompting S=sex of respondent
E=education of respondent A=age of respondent

Prompting, education, and age all showed a significant relationship with responding or not responding to the question about the most important issues (a significant main effect), and sex of respondent showed a borderline significance (see table 5.4.3).

Table 5.4.3 Test for main effects of prompting, sex, education and age, on non-response

Effect deleted from main effects model in table 5.4.2.	Lambda parameters included in the model	Chi-square	DF	p	Conditional Chi-square	DF	p
Prompting	(N)(NA)(NE)(NS)	32.83	31	.377	10.05	2	.006
Sex	(N)(NP)(NA)(NE)	25.61	30	.695	2.83	1	.093
Education	(N)(NP)(NA)(NS)	50.26	30	.012	27.48	1	.000
Age	(N)(NP)(NE)(NS)	36.71	31	.221	13.93	2	.001

As can be seen in table 5.4.4, none of the two-way interactions reached significance, but there was a highly significant three-way interaction between prompting, sex and education (see table 5.4.5).

Table 5.4.4 Significance test for two-way interactions between prompting, sex, education and age

Effect deleted from two-way interaction effects model in table 5.4.2.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Prompt x sex	16.45	18	.561	1.97	2	.373
Prompt x education	14.52	18	.695	0.04	2	.980
Prompt x age	17.10	20	.646	2.62	4	.628
Sex x education	16.36	17	.499	1.88	1	.170
Sex x age	14.62	18	.688	0.14	2	.932
Education x age	15.30	18	.642	0.82	2	.664

Table 5.4.5 Significance test for two-way interactions between prompting, sex, education and age

Effect deleted from three-way interaction effects model in table 5.4.2.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Prompt x sex x education	8.26	6	.219	6.76	2	.034
Prompt x sex x age	3.33	8	.912	1.83	4	.767
Prompt x education x age	2.94	8	.938	1.44	4	.837
Sex x education x age	3.02	6	.806	1.52	2	.468

The best model for explaining non-response to the question about the most important issues is a model with main effects of all the independent variables (prompting, sex, education and age), two-way interactions between prompting and sex, prompting and education, and sex and education, and the three way interaction between prompting, sex and education (χ^2=12.42, df=22, p=.948). Table 5.4.6 shows the parameter estimates for the best model.

Table 5.4.6 **λ- Parameters, log-odds, odds, predicted, and actual proportion of respondents who mention no issue**

EFFECT LEVEL	λ-para-meters	Log-odds	Odds	Predicted proportion	Observed proportion
Most important issue					
1. nothing	-0.930	-1.860	0.156	0.135	
Most important issue by prompting					
1. specific	-0.252	-0.504	0.094	0.086	
2. general	0.212	0.424	0.238	0.192	
3. no prompts	0.040	0.080	0.169	0.144	
Most important issue by sex					
1. male	-0.057	-0.114	0.139	0.122	
2. female	0.057	0.114	0.174	0.149	
Most important issue by education					
1. compulsory	0.244	0.488	0.254	0.202	
2. more than comp.	-0.244	-0.488	0.096	0.087	
Most important issue by age					
1. 18-30	0.255	0.510	0.259	0.206	
2. 31-50	-0.125	-0.250	0.121	0.108	
3. 51-70	-0.130	-0.260	0.120	0.107	
Most important issue by prompting by sex					
1.1. specific-male	0.112	0.224	0.105	0.095	
1.2. specific-female	-0.112	-0.224	0.084	0.078	
2.1. general-male	-0.065	-0.130	0.186	0.157	
2.2. general-female	0.065	0.130	0.304	0.233	
3.1. no prompt-male	-0.047	-0.094	0.137	0.120	
3.2. no prompt-female	0.047	0.094	0.208	0.172	
Most important issue by prompting by education					
1.1. specific-comp.	-0.022	-0.044	0.147	0.128	
1.2. specific-m.th.comp	0.022	0.044	0.060	0.057	
2.1. general-comp.	0.019	0.038	0.403	0.287	
2.2. general-m.th.comp	-0.019	-0.038	0.141	0.123	
3.1. no prompt-comp.	0.003	0.006	0.276	0.217	
3.2. no prompt-m.th.comp	-0.003	-0.006	0.103	0.093	
Most important issue by sex by education					
1.1. male-comp.	-0.100	-0.200	0.185	0.156	
1.2. male-m.th.c.	0.100	0.200	0.104	0.094	
2.1. female-comp.	0.100	0.200	0.347	0.258	
2.2. female-m.th.c.	-0.100	-0.200	0.088	0.081	

Table continued on next page

Table 5.4.6 Continued

EFFECT LEVEL	λ-para-meters	Log-odds	Odds	Predicted proportion	Observed proportion
Most important issue by prompting by sex by education					
1.1.1. specific-male-comp.	-0.186	-0.372	0.092	0.085	0.095
1.1.2. specific-male-m.th.c	0.186	0.372	0.119	0.107	0.110
1.2.1. specific-female-comp.	0.186	0.372	0.233	0.189	0.182
1.2.2. specific-female-m.th.c.	-0.186	-0.372	0.031	0.030	0.035
2.1.1. general-male-comp.	0.113	0.226	0.324	0.245	0.235
2.1.2. general-male-m.th.c	-0.113	-0.226	0.107	0.097	0.104
2.2.1. general-female-comp.	-0.113	-0.226	0.501	0.334	0.312
2.2.2. general-female-m.th.c.	0.113	0.226	0.184	0.156	0.173
3.1.1. no prompt-male-comp.	0.073	0.146	0.213	0.175	0.178
3.1.2. no prompt-male-m.th.c	-0.073	-0.146	0.088	0.081	0.083
3.2.1. no prompt-female-comp.	-0.073	-0.146	0.359	0.264	0.252
3.2.2. no prompt-female-m.th.c.	0.073	0.146	0.120	0.107	0.120

Generally speaking, women with compulsory education only, were more likely to have no opinion on which issues were the most important ones than any other group and were at least twice as likely as the women with more than compulsory education to have no opinion. Almost a third of the women with compulsory education only who were prompted with the general examples and a quarter of those not prompted said they were not sure which issues, if any, they were most concerned about. The comparable figure for the women prompted with the specific issues was 18.2%. The only group where non-response did not seem to be related to the experimental condition were the men with more than compulsory education. The other groups, men and women with compulsory education only and women with more than compulsory education all followed the same pattern, i.e., they were most likely to give a non-response when prompted with the general examples, then if they were not prompted, and least likely to have no opinion if they were prompted with the specific examples. Thus the two types of examples seem to have had different effects on the likelihood of non-response: the specific examples reduced the likelihood, whereas the general examples increased it.

It is not clear why providing respondents with general examples such as pay disputes and inflation had the effect of increasing the probability of non-response where specific examples seemed to reduce this probability. The main difference between these two types of examples appears to have been that the specific examples were at the time popular news items, one of them (Albert's affair) qualifying as a political scandal, whereas the general examples were of a much more persistent nature. It is conceivable that such items can act as a turn-off for people who have little interest in economic and political issues in general.

Partial support for this hypothesis can be seen in table 5.4.7 where the sample is divided according to their expressed interest in following what is going on in government and public affairs.

Table 5.4.7 **Effects of prompting and political interest on non-response to question about the most important issues**

	Interested in politics				*Not interested in politics*			
	specific prompts	general prompts	no prompts	total	specific prompts	general prompts	no prompts	total
non-response	5.2%	10.1%	6.1%	7.0%	17.4%	27.5%	26.5%	24.3%
some issues	94.8	89.9	93.9	93.0	82.6	72.5	73.5	75.7
Total (n)	174	159	213	546	138	171	185	494
	χ^2=3.46; df=2; p=.177				χ^2=5.01; df=2; p=.082			

There was no significant difference between the proportion of non-response in the three experimental groups among respondents who were interested in politics (followed what is going on in government and public affairs most of the time), and these respondents were much more likely to have an opinion about which issues were the most important than respondents who did not express the same interest in politics. Only 7% of respondents who generally followed what is going on did not

have an opinion as opposed to 24.3% of respondents who were less interested in politics. In the latter group, the specific examples seemed to substantially reduce non-response, but no difference was found between the groups that were not prompted or prompted with the general examples, which may suggest that respondents interpreted the question as asking for general economic/political issues. The chi-square for the effects of prompting on non-response among respondents who were not very interested in politics, however, only reached borderline significance (χ^2=5.01; df=2; p=.082) and there was no significant interaction between prompting and political interest (LRχ^2=1.23; df=4; p=.541).

A somewhat clearer picture emerges when one looks at these effects for men and women separately. Prompting did not have any effect on non-response among men, whether or not they were generally interested in what was going on in government and public affairs. However, as can be seen in table 5.4.8, the specific examples significantly reduced the likelihood of women who were not interested in politics saying that they did not have an opinion on which issues were the most important.

Table 5.4.8 **Effects of prompting, political interest, and sex on non-response to question about the most important issues**

	Interested in politics				*Not interested in politics*			
	specific prompts	general prompts	no prompts	total	specific prompts	general prompts	no prompts	total
Male								
non-response	5.6%	8.0%	5.4%	6.3%	20.8%	22.1%	25.8%	23.0%
some issues	94.4	92.0	94.6	93.8	79.2	77.9	74.2	77.0
Total (n)	107	100	129	336	53	77	66	196
	χ^2=0.75; df=2; p=.688				χ^2=0.47; df=2; p=.790			
Female								
non-response	4.5	13.6	7.1	8.1	15.3	31.9	26.9	25.2
some issues	95.5	86.4	92.9	91.9	84.7	68.1	73.1	74.8
Total (n)	67	59	84	210	85	94	119	298
	χ^2=3.65; df=2; p=.161				χ^2=6.86; df=2; p=.032			

Interaction between prompting, political interest and sex: χ^2=.026; df=2; p=.987

Despite the strong effect found for women who showed little interest in politics, there was no significant interaction between prompting, political interest and sex (χ^2=.026; df=2; p=.987). The results suggest that including the specific examples in the preamble to the question may alter respondents' interpretation of the question by widening its frame of reference. The fact that there is an even higher proportion of respondents who did not state an issue when they were prompted with the general examples than when they were not prompted at all may suggest that these examples led to a narrower frame of reference, confining possible responses to hard core political or economic issues and leading to a higher proportion of non-response, particularly among female respondents not interested in politics.

5.5 Effect of specific and general examples

If the interpretation that the general examples narrowed the frame of reference and the specific examples widened it is correct, one would not only expect to find differences in terms of non-response but also in the distribution of the actual issues mentioned and in the number of people assenting that the examples were the issues they were most concerned about. It has already been shown in table 5.3.2 that respondents in the group prompted with the specific items mentioned significantly more issues than respondents in the other two groups. The smaller proportion of respondents expressing no opinion when prompted with the specific examples can not be explained by these respondents being more likely to agree that the prompts were the issues they were most concerned about, but rather that they came up with a greater variety of issues. This result agrees with the interpretation that the specific examples opened up the frame of reference (see table 5.5.1).

Table 5.5.1 **Percent of respondents who say the prompts given in Wave 1 are the most important issues of national importance**

	Interested in politics			*Not interested in politics*		
	specific prompts	general prompts	total	specific prompts	general prompts	no prompts
Wave 1						
non-response	5.2%	10.1%	7.5%	17.4%	27.5%	23.0%
other issues	16.7	10.1	13.5	7.2	5.3	6.1
the prompts	78.2	79.9	79.0	75.4	67.5	70.9
Total (n)	174	159	333	138	171	309
	χ^2=5.36; df=2; p=.069			χ^2=4.58; df=2; p=.101		
Wave 2						
non-response	7.3	7.4	7.3	22.6	28.2	25.6
other issues	84.0	72.8	78.7	72.6	58.5	65.0
the prompts	8.7	19.9	14.0	4.8	13.4	9.4
Total (n)	150	136	286	124	142	266
	χ^2=7.52; df=2; p=.023			χ^2=7.98; df=2; p=.019		
Wave 3						
non-response	19.3	17.8	18.6	26.1	37.7	32.2
other issues	70.0	63.6	66.9	64.3	43.8	53.5
the prompts	10.7	18.6	14.5	9.6	18.5	14.3
Total (n)	140	129	269	115	130	245
	χ^2=3.37; df=2; p=.185			χ^2=10.73; df=2; p=.005		

The pattern of responses in all waves depended to some extent on the type of prompting that was used in Wave 1. Respondents who were not interested in politics were less likely to have no opinion if they were prompted with specific rather than general examples. In Wave 1 this seemed to be due to their agreeing with the prompts, but in Waves 2 and 3 they were much more likely than the respondents who got the general examples to state issues other than the prompts as the most important. Type of prompting did not affect the proportion of non-response in any wave among respondents who were interested in politics, but in all cases, respondents who were given the specific examples were more likely to mention other issues than they were prompted with as the issues of national importance they

were the most concerned about. This result certainly gives some support to the hypothesis that general examples, such as pay disputes and inflation narrow people's interpretations of what kind of answers are acceptable, whereas specific examples convey the message that almost any kind of issues or problems will be taken as valid answers. This should also explain the lower reliability or stability in the group prompted with the specific examples, since the problems mentioned were of a more temporary nature than the general ones and can often be resolved within a short period of time, and thus lose their importance.

5.6 The most important issues and changes between waves

It has been suggested that attitude change produced by consistency pressures can be enduring on some occasions (cf. Rokeach, 1975), and that once a respondent has made a judgement s(he) is likely to retrieve that judgement and reuse it when rendering related judgements later (Lingle and Ostrom, 1979; Lingle, 1979). The analysis above suggests that the changes in responses between waves are, to some extent, affected by the experimental condition in Wave 1. As displayed in table 5.3.3, respondents who were prompted were less likely to mention the same issue as the most important one in Waves 1 and 2 (that were approximately two weeks apart), and respondents prompted with the specific issues were less likely to give the same response than respondents prompted with the more general examples. Table 5.6.1 shows that when asked what was the most important issue in the election campaign, respondents were more likely to mention the issue they thought was the most important in Wave 2 rather than the issue from Wave 1. As the table shows, prompting respondents in Wave 1 had a significant effect on the stability of responses and the respondents who were not prompted were much more likely to mention the same issue on all three occasions than the respondents prompted with the specific or the general examples.

Table 5.6.1 **Stability of responses to the question about what are the most important issues in Waves 1, 2, and 3, and experimental condition in Wave 1**

	Prompted: Albert/ nukes in Wave 1	Prompted: pay disp./ inflation in Wave 1	Not prompted in Wave 1	Total	χ^2	df	p	n
Same response in 1 and 2	10.2%	22.3%	33.9%	23.0%	48.1	2	.000	888
Same response in 1 and 3	12.9	20.5	27.1	20.7	17.4	2	.000	835
Same response in 2 and 3	23.9	30.9	29.9	28.4	3.7	2	.160	835
Same response in 1, 2 and 3	3.9	11.2	15.0	10.4	18.8	2	.000	835

Reliability of responses was by far the lowest in the group prompted with the specific issues. Only 3.9% of respondents in this group mentioned the same issue as the most important one in all three waves. This ratio was much higher in the group that was prompted with the general examples and in the group that was not prompted, or 11.2% and 15% respectively.

Loglinear analysis shows that the effects of prompting with general or specific examples depended on demographic variables, such as gender, age and education. When examining changes in responses between Waves 1 and 2, two four-way interactions were found to be statistically significant. The effects of prompting depended, firstly, on a combination of age and education (L.R.χ^2=9.60, df=4, p=.048), and secondly, on a combination of sex and education (L.R.χ^2=9.77, df=2, p=.008). Tables 5.6.2 and 5.6.3 show how stable responses in the experimental groups were between Waves 1 and 2, and table 5.6.4 shows the percentage of respondents who gave the same response in Waves 1, 2, and 3 and the effects of prompting, age and education thereupon.

Table 5.6.2 **Percent of respondents who give the same answer in Waves 1 and 2 and effects of prompting, age and education**

Prompt	Age	Compulsory education		n	More than compulsory education		n
Specific examples	18-30	17.9		28	13.4		67
General examples	18-30	28.6		21	23.4		64
No examples	18-30	41.7		36	24.6		69
Specific examples	31-50	8.6	*	35	6.0	*	83
General examples	31-50	27.1		59	15.9		82
No examples	31-50	41.0		61	34.5		87
Specific examples	51-70	13.8		29	6.3	*	32
General examples	51-70	34.6		26	11.5		26
No examples	51-70	21.3		47	47.2		36

* means that the effect of prompting was significant at the .05 level in the age and educational group marked. L.R.$\chi^2_{stability*prompt*age*education}$=9.60, df=4, p=.048

Table 5.6.3 **Percent of respondents who give the same answer in Waves 1 and 2 and effects of prompting, sex and education**

Prompt	Sex	Compulsory education		n	More than compulsory education		n
Specific examples	female	19.3		57	9.2	*	76
General examples	female	31.3		64	23.4		64
No examples	female	31.7		82	42.2		83
Specific examples	male	2.9	*	35	8.5	*	106
General examples	male	26.2		42	14.8		108
No examples	male	38.7		62	26.6		109

* means that the effect of prompting was significant at the .05 level in the sex and educational group marked. L.R.$\chi^2_{stability*prompt*sex*education}$=9.77, df=2, p=.008

Table 5.6.4 **Percent of respondents who give the same answer in Waves 1, 2 and 3 and effects of prompting, age and education**

Prompt	Age	Compulsory education		More than compulsory education		
			n			n
Specific examples	18-30	7.4	27	6.8		59
General examples	18-30	15.8	19	15.3		59
No examples	18-30	28.6	35	9.4		64
Specific examples	31-50	3.0	33	2.5	*	79
General examples	31-50	16.4	55	5.2		77
No examples	31-50	18.6	59	14.5		83
Specific examples	51-70	3.8	26	0.0	*	31
General examples	51-70	16.0	25	0.0		24
No examples	51-70	4.5	44	19.4		36

*effect of prompting was significant at the .05 level in the age and educational group marked. L.R.$\chi^2_{stability*prompt*age*education}$=14.65, df=4, p=.006

If specific issues or occurrences are taken as valid answers to the question about which issues of national importance people are most concerned about, which indeed they must be when such issues are used as examples in the preamble to the question, one would expect much more frequent shifts or changes within such a framework. The general issues or problems are of a different kind, because they do not disappear and are never irrevocably solved, although they are not equally serious at all times. Thus if people are concerned about inflation in March, it is highly likely that they will also be concerned about inflation in April, and much more likely that concerns about such matters will be relatively persistent compared with matters such as a minister being fired (as in the Albert affair).

5.7 Conclusion

It seems fair to argue that people generally do not have a very strong feeling about which issues of national importance are the most important ones, since almost a fifth of respondents were unable to answer the question (although this proportion varies somewhat). Respondents who were not prompted and respondents who were prompted with general issues were likely to give a response that was at a very general political-economic level, whereas respondents prompted with the specific examples gave much more divergent responses and at a different level of abstraction.

Beliefs about which national issues are most important are probably in most cases what Abelson (1986) calls 'distal beliefs', i.e., beliefs 'about objects only remotely experienced or not sensibly verifiable' (p. 229). He contends that people often express an opinion they don't really have but have merely borrowed. Factors that are instrumental in changing the status of a belief from being 'borrowed' towards being 'possessed' are, according to Abelson's (1986) theory: public commitment to a belief, suffering for a belief, explaining a belief, elaborating a belief, or tracing its origins, defending a belief, attributing longevity to a belief, and becoming aware of the value of a belief. For many people the question of what may be the most important problem facing the nation never arises, and thus they are unlikely to 'possess' an opinion. It is a lot easier to say simply that you agree than having to come up with some issues yourself that you may or may not have considered before. Hence these people are likely to 'borrow' the prompts from the question and use them as their answer. However, people who are generally interested in politics and follow what is going on in government and public affairs are more likely to have discussed the matter, explained a particular belief, defended their point of view, etc., and as a consequence, are more likely to 'possess' a belief concerning the most important issues. People who possess a belief and are committed to it should be more likely to resist persuasive attacks and thus, should also be less likely to be influenced

by the examples they are presented with. The results above lend very meagre support to this view. Those respondents interested in politics (follow what is going on in government and public affairs most of the time) were only slightly less likely (85.4% of those who mentioned at least one issue) than respondents who were not so interested in politics (92%) to agree to the prompts as the issues of national importance they were most concerned about. Political interest, however, did not seem to have any effect on the stability or reliability between waves, although one would according to Abelson's (1986) theory, expect someone who 'possesses' a belief to show more consistency in responses than a person who merely 'borrows' one.

Type of prompting was found to affect stability of responses in such a way that respondents prompted with the specific examples were found to be less likely to say that they had no opinion on which issues were the most important in Wave 1. They were not, however, more likely to 'borrow' the prompts than respondents who got the general examples. In Wave 2, the main difference between the two groups that were prompted was that the respondents prompted with the specific examples were much more likely to proclaim issues other than the prompts the most important ones. This result, along with no differences found between the group prompted with the general examples and the group not prompted at all, strongly suggest that the specific examples had an effect on the interpretation of the question by widening its frame of reference.

6

Context effects on attitudes towards abortion and declaring the Nordic countries free of nuclear weapons

6.1 Introduction

Attitude questions, especially general questions that ask for a global judgement, have been shown to be quite susceptible to the context within which they are asked. Tourangeau and Rasinski (1986) found that it was possible to increase or decrease the probability of respondents giving a favourable response to an attitude question by asking them if they agreed or disagreed with attitudinal assertions that were either pro- or anti-attitudinal. Various researchers have shown that this susceptibilty to the context is often mediated by factors such as attitude strength, knowledge of the subject, involvement, etc. (see discussion in chapter 1 and Tourangeau and Rasinski, 1988), and Tourangeau and Rasinski (1986) demonstrated that respondents with mixed views on the issue were more easily influenced by the context than partisan respondents.

In the experiments reported here, emphasis was laid on 1) measuring the strength and ambivalence of the attitude, 2) collecting base rate data to see how the context can affect reliability of attitude questions, and 3) selecting issues with different levels of agreement and variance, i.e., abortion, an issue on which one can expect substantial disagreement and thus large variance, and attitudes towards declaring the Nordic countries free of nuclear weapons, an issue on which one can expect a greater uniformity of opinion, and thus a smaller variance.

6.2 Context effect on attitude towards abortion

Table 6.2.1 shows the association between the abortion question and the pro-/anti-context items.

Table 6.2.1 Abortion by context

	Context		
	pro-context	anti-context	Total
favour strongly	8.4%	11.3%	9.9%
favour	29.2	20.1	24.6
neither-nor	4.0	7.8	5.9
oppose	27.2	21.6	24.4
oppose strongly	31.2	39.2	35.2
Total (n)	202	204	406

χ^2=10.04, df=4, p=.04
Size of effect (favour strongly): -2.9%
Size of effect (oppose strongly): 8.0%

The context effects in table 6.2.1. are not very clear, albeit statistically significant. Tourangeau (1986) found that respondents who disagree with the context items tend to show what he calls backfire effects, that is, respondents engage in counterarguing and give a response opposite to the one predicted, i.e., respondents disagree with the context items and give their response to the abortion question in accordance with their disagreement. The figures in table 6.2.1 suggest that a backfire effect may have been operating in the anti-context group, where 11.3% (n_{12}=23) of respondents said they strongly favoured abortion on demand, as opposed to 8.4% (n_{11}=17) in the pro-context group. It is obvious in table 6.2.1 that there were no great differences in the proportion of respondents favouring or opposing abortion depending on which of the two context groups they belong to. This can be seen more clearly in table 6.2.2 (respondents who gave the middle response are excluded).

Table 6.2.2 Abortion (dichotomous) by context

	Context pro-context	anti-context	Total
favour	39.2%	34.0%	36.6%
oppose	60.8	66.0	63.4
Total (n)	194	188	382

χ^2=1.08, df=1, p=.30
Size of effect: 5.2%

A quick glance at table 6.2.2 would suggest that although the context may well shift responses in such a way that respondents expressed their opinions with more or less intensity according to the context within which the abortion question was asked, it certainly did not have such a strong effect that respondents changed their response from favour to oppose or vice versa. Although the differences between the pro- and anti-context groups were in the predicted direction, a difference of 5.2% is no more than one would expect by chance within such a small sample (n=382). Furthermore, the groups may well have been biased in this direction before they were presented with the different context items. This is in fact what can be seen in table 6.2.3. ***It has to be emphasised that the context items cannot be the cause of the slight differences (3.4%) that are found in table 6.2.3, since the abortion question was asked in the first interview whereas the context items appeared in the third interview, a month later.***

Table 6.2.3 Abortion (base rate question) by context[6]

	Context pro-context	anti-context	Total
favour	36.7%	33.3%	35.0%
oppose	63.3	66.7	65.0
Total (n)	199	192	391

χ^2=0.48, df=1, p=.49

[6] Responses to the abortion question were collected a month before responses to the context items, so the context can have had no effect on reported attitudes towards abortion.

Although the context can only have affected responses to the abortion question in table 6.2.2, a comparison between tables 6.2.2 and 6.2.3 reveals that the tables are almost identical and the differences are no more than one would expect to find in a simple test-retest design with no changes in the questionnaire. This leads to two possible, but rival, interpretations. The first is that the context items had absolutely no effect on which side respondents advocated. The second interpretation is more complicated and calls for more complicated analysis of the data, i.e., the context had an effect on individual responses but has cancelled itself out in the overall sample. Thus, the latter explanation suggests that two different effects, each of which have been identified by Tourangeau (1986), were operating, i.e., priming (assimilation or consistency) and backfire (contrast) effects, that is, some respondents moved in the predicted direction while others moved in the opposite direction. In order to choose between the two interpretations it is necessary to look at the effects of the context on the target question, taking into account such variables as the base rate data, and the background variables, sex, education, and age to see if any of these variables conditioned the effect of the context.

Table 6.2.4 **Abortion by context, controlling for responses to the base rate question**

	Response to base rate question					
	Favour			*Oppose*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
favour strongly	22.9%	25.0%	23.9%	0.8%	5.5%	3.2%
favour	58.6	42.2	50.7	13.6	6.3	9.9
neither-nor	2.9	6.3	4.5	3.2	6.3	4.8
oppose	12.9	17.2	14.9	33.6	23.6	28.6
oppose strongly	2.9	9.4	6.0	48.8	58.3	53.6
Total (n)	70	64	134	125	127	252

χ^2=5.49, df=4, p=.24
cells with E.F.<5= 4 of 10 (40%)
Size of effect (favour strongly): -2.1%
Size of effect (oppose strongly): 6.5%

χ^2=12.31, df=4, p=.02
cells with E.F.<5=2 of 10 (20%)
Size of effect (favour strongly): -4.7%
Size of effect (oppose strongly): 9.5%

Although only one of the subtables in table 6.2.4 has resulted in a significant chi-square, the overall pattern is quite similar. Only 134 respondents gave a favourable response to the abortion question in the first interview and with 40% of the cells with an expected frequency less than 5, the chi-square statistic is not very reliable because of the fact that the sampling distribution of the test statistic approximates the sampling distribution given in the chi-square table only when N is large. Thus, it is worth looking at the same cross-tabulation with the target question coded as a dichotomy to see if a clearer picture can be obtained (see table 6.2.5).

Table 6.2.5 Abortion (dichotomous) by context, controlling for responses to the base rate question

	Response to base rate question					
	Favour			*Oppose*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
favour	83.8%	71.7%	78.1%	14.9%	12.6%	13.8%
oppose	16.2	28.3	21.9	85.1	87.4	86.3
Total (n)	68	60	128	121	119	240
χ^2=2.76, df=1, p=.10 Size of effect: 12.1%				χ^2=0.26, df=1, p=.61 Size of effect: 2.3%		

An interesting difference between tables 6.2.4 and 6.2.5 is that one might be tempted to conclude from table 6.2.4 that respondents who were originally opposed to abortion were more easily influenced by the context, whereas table 6.2.5 might lead one to the opposite conclusion, i.e., that respondents who were in favour of abortion on demand were more easily influenced. Of course, closer inspection of the tables shows that neither conclusion can be justified without some further support. It seems to be the case that those respondents who favoured abortion initially were more likely to change sides, whereas those who opposed abortion in the first interview were more likely to polarize their responses under the anti-abortion condition and give a stronger response, thus giving grounds for the two different conclusions.

Although the changes in response to the abortion question were in the predicted direction for those respondents who expressed a favourable attitude towards abortion in the first interview, there was still quite a high proportion of respondents who changed their response from favour to oppose in the *pro-abortion context*, or 16.2% (11 respondents), and this has to be explained. In the other group (respondents who were opposed to abortion on demand in the first interview), there was only a negligible difference between the proportions of respondents who change their opinions from oppose to favour under the two different conditions, or, 14.9% and 12.6% in the pro- and anti-context conditions respectively. Again, there is no way of choosing between the two possible explanations: either people's attitudes towards abortion on demand are generally unstable or the two effects, priming and backfire (assimilation and contrast) mentioned above are in operation for different respondents. Thus, other variables have to be introduced in order to identify the different groups.

Tourangeau (1988) has suggested a few variables that may affect the size and the direction of context effects. Among these are strength of the attitude and expertise or involvement of respondents. Tourangeau claims that partisan respondents, or respondents with strong views, are not affected by the context because prior items cannot prime beliefs that respondents do not have and, in the same vein, prior items will not affect responses if they prime beliefs that would have been retrieved anyway. This could well explain the consistency effect due to priming, but it can not at the same time explain the backfire effect, which Tourangeau and Rasinski (1986) believe to be due to counterarguing. Expertise or involvement seems to be a more promising factor in this case, but since we do not have any measure of expertise or involvement, it is necessary to make a few assumptions. Tourangeau and Rasinski do not mention the effect (or absence of effect) of such variables as sex, education, and age, but it is not unreasonable to assume that women show more involvement in such issues as abortion, although not necessarily more expertise than do men.

Involvement in an issue refers to how much respondents care about it, but expertise to how much they know about it (Fiske et al, 1981). If this is true, one would expect male respondents to show the predicted consistency effect, but not women. But a question remains: Would one expect women to show backfire effects? Table 6.2.6 shows the effect of context for male and female respondents separately.

Table 6.2.6 Abortion (dichotomous) by context, controlling for sex

	Sex					
	Male			*Female*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
favour	52.0%	37.5%	44.9%	25.5%	30.4%	28.0%
oppose	48.0	62.5	55.1	74.5	69.6	72.0
Total (n)	100	96	196	94	92	186
χ^2=4.16, df=1, p=.04 Size of effect: 14.5%				χ^2=0.55, df=1, p=.46 Size of effect: -4.9%		

Table 6.2.6 shows that the context does produce the expected consistency effect among male respondents, but not among the female respondents. The subtable for women shows a trend in the backfire direction, but this trend was small (4.9%) and statistically nonsignificant. Thus, we have taken the first step towards identifying who was affected by the context and who was not.

Schuman and Presser (1981) suggest that the conservative position is held with more passion by its supporters than is the liberal position by its supporters. Thus, if the abortion opponents hold their attitude with greater fervour than do the abortion supporters, one would, according to Tourangeau and Rasinski (1986, 1988), expect those who expressed a favourable attitude towards abortion on demand in the initial interview to be more susceptible to the different contexts in the subsequent

interview. Schuman and Presser (1981), on the other hand claim that this is not necessarily so. They hypothesize that crystallization (as operationalized by over-time reliability and is highly correlated with intensity of attitude) of an attitude may be a major factor in explaining random measurement errors, that is, random measurement errors are, at least in part, a function of low attitude strength or poor crystallization. They also claim that 'random measurement error and systematic form effects may be fundamentally different in origin, and that only the former is due to poorly crystallized attitudes' (pp. 268-269). However, Schuman and Presser do not hold this view very strongly, because of the limited evidence they have to support it, but present it as an hypothesis to be tested.

Before turning to the issue of strength of the attitude towards abortion on demand, it is worth looking at table 6.2.7a that shows the effect of context on responses to the abortion question for men, controlling for responses to the base rate question, and table 6.2.7b that shows the association of the same variables for women.

Table 6.2.7a **Abortion (dichotomous) by context, controlling for base-rate attitude towards abortion. Male respondents only.**

	Response to base rate question					
	Favour			*Oppose*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
favour	91.5%	73.3%	84.4%	15.7%	15.3%	15.5%
oppose	8.5	26.7	15.6	84.3	84.7	84.5
Total (n)	47	30	77	51	59	110
χ^2=4.59, df=1, p=.03 Size of effect: 18.2%				χ^2=0.00, df=1, p=.95 Size of effect: 0.4%		

Table 6.2.7b **Abortion (dichotomous) by context, controlling for base-rate attitude towards abortion. Female respondents only**

	Response to base rate question					
	Favour			*Oppose*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
favour	66.7%	70.0%	68.6%	14.3%	10.0%	12.3%
oppose	33.3	30.0	31.4	85.7	90.0	87.7
Total (n)	21	30	51	70	60	130
χ^2=0.06, df=1, p=.80 Size of effect: 3.3%				χ^2=0.55, df=1, p=.46 Size of effect: 4.3%		

As can be seen in tables 6.2.7a and 6.2.7b, only one of the four groups seems to have been affected by the context, i.e., male respondents who initially said they favoured abortion on demand (χ^2=4.59, p=.0322). Although the response pattern for women who gave a favourable response to abortion in the first interview was in the direction of a backfire effect, i.e., 33.3% (7 respondents) of respondents in the pro-context group opposed abortion in the second interview, as opposed to 30% (9 respondents) under the anti-context condition, this difference was very small and far from being significant. The differences that are found for respondents who opposed abortion in the initial interview were in the predicted direction, but they were negligible, non-significant, and did not show any evidence of a context effect. This result gives support to two hypotheses: 1) the conservative attitude (opposition to abortion on demand) was held with greater fervour than the liberal position, (further support for this is given in table 6.2.8.), 2) women were probably more involved in this issue, and thus less likely to be influenced by the different contexts, than were men.

Table 6.2.8 Attitude towards abortion by strength

	Strength of attitude					
	Strong vs. vague			*Very strong vs. not very strong*		
	Strong	Vague	Total	Very strong	Not very strong	Total
favour	34.0%	51.9%	36.5%	27.8%	43.5%	36.5%
oppose	66.0	48.1	63.5	72.2	56.5	63.5
Total (n)	324	54	378	169	209	378
χ^2=6.40, df=1, p=.01				χ^2=9.97, df=1, p=.00		

Table 6.2.8. has two subtables in order to emphasize that the majority of respondents who reported feeling very strongly about the matter of abortion were opposed to abortion on demand, whereas the majority of those who reported holding a vague attitude favoured abortion on demand. Thus, as mentioned above, this lends support to the hypothesis that the conservative attitude was held with greater fervour than the more liberal attitude favouring abortion on demand.

Another variable that might condition the effects of the context is age of respondents. Many studies have found that younger adults may have weaker and more changeable attitudes than older adults (cf. Glenn, 1980; Sears, 1981, 1986). Although many studies suggest that susceptibility to persuasive messages does to some extent depend on age, there is not full agreement among researchers whether, or what kind of relationship there is between attitude change and age. Sears (1981) has grouped hypotheses dealing with this issue into four major categories:

1) *The lifelong-openness notion*, suggesting that people at all ages have the same potential for attitude change, i.e., that there is no relation between attitude change and age.

2) *The life-cycle hypothesis* suggests that people's attitudinal position may to some extent depend on their age or life stage (for example that young people may be more liberal but become conservative as they grow older), thus predicting an interaction between age and attitudinal position.

3) *The impressionable-years hypothesis* suggests that adolescents and young adults may be more likely to change any of their attitudes, than older adults, given strong enough pressure. Hence, this view asserts an interaction between persuasibility and age, irrespective of attitudinal position.

4) The final hypothesis is *persistence.* This view suggests that there is a simple relationship between attitude change, or rather attitude formation and age, with attitude change most likely to occur in the preadult years while they are being formulated, and the resulting attitudes becoming relatively immune from change in later years.

Table 6.2.9 shows how the context effect was conditioned by the age of the respondents.

Table 6.2.9 Abortion (dichotomous) by context, controlling for age

	Context pro-context	anti-context	Total
18-30 years			
favour	49.2%	24.6%	36.3%
oppose	50.8	75.4	63.7
Total (n)	59	65	124
χ^2=8.05 df=1, p=.00			
Size of effect: 24.6%			
31-50 years			
favour	37.9	40.7	39.2
oppose	62.1	59.3	60.8
Total (n)	95	81	176
χ^2=0.15 df=1, p=.70			
Size of effect: -2.8%			
51-70 years			
favour	27.5	35.7	31.7
oppose	72.5	64.3	68.3
Total (n)	40	42	82
χ^2=0.64 df=1, p=.42			
Size of effect: -8.2%			

The results in table 6.2.9 do not confirm the lifelong-openness hypothesis, that there is no relation between attitude change and age, nor do they seem to confirm the life-cycle hypothesis stating that there is an association between attitudinal position and age, although this can not be contended with confidence without taking into account the base-rate data for the attitude question. This is because the possibility remains that the youngest age group was the most liberal in the initial interview, but because this age group is the only one that seems to have been affected by the context, the results in table 6.2.9 may be misleading with respect to the life-cycle hypothesis. If this is so, it suggests a combination of the life-cycle hypothesis and the impressionable-years hypothesis which states that younger adults have more changeable attitudes than older adults. Whether or not the persistence hypothesis is

refuted or confirmed by these data, is debatable and depending on where we put the limits between adulthood and preadulthood.

Table 6.2.10 Abortion (dichotomous, base-rate question) by age

	Age			
	18-30	31-50	51-70	Total
favour	42.1%	38.8%	26.5%	37.2%
oppose	57.9	61.2	73.5	62.8
Total (n)	318	436	211	965

χ^2=14.04, df=1, p=.000

Table 6.2.10 depicts a monotonic relation between attitudinal position and age, with the youngest respondents being the most likely to support abortion on demand (although the majority of respondents in all age groups were opposed to abortion on demand). Hence, this result provides evidence for the life-cycle hypothesis, claiming that age affects attitudinal position. Taken together, tables 6.2.9 and 6.2.10 show that the youngest age group was the most likely to respond in favour of abortion, in the absence of any pressure to do otherwise, but these respondents were also the most likely to change their response to make it consistent with responses to related questions. The most probable explanation for this is the above mentioned idea, that the life-cycle hypothesis and the impressionable-years hypothesis are both true to a certain extent.

The relation between the final variable, education, and attitude change has caused considerable confusion among researchers. It is often assumed that education will be positively related to response consistency over time, a thesis proposed by Converse in his early writings (cf. 1964), but largely withdrawn by him at a later point (1975).

As Bishop et al. (1980) point out, it seems reasonable to believe that education should affect attitude stability because higher education is commonly seen as encouraging people to relate issues to each other and to be consistent in their thinking. Indeed, if higher education does encourage people to relate issues and to be consistent, one might also expect more educated respondents to be more susceptible to different contexts. Obviously, with respect to attitude stability, these two hypotheses may often be in contradiction with one another (i.e., if changes are made in the questionnaire); the former stating that highly educated respondents should exhibit greater reliability in responses; the latter suggesting that the responses given by highly educated respondents should be more influenced by the context within which the questions are asked. This, and the relationship between sex, age and education may well contribute to the conflicting results that have been found with respect to the association between education and attitude change.

In addition, in the case of abortion, less educated respondents have been found to feel more strongly about the issue than more educated respondents (Schuman and Presser, 1981).

The relationship between attitude towards abortion, context and education is presented in table 6.2.11.

Table 6.2.11 Abortion (dichotomous) by context, controlling for education

	Education					
	Compulsory			*More than compulsory*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
favour	27.3%	30.4%	28.8%	47.0%	36.1%	41.5%
oppose	72.7	69.6	71.2	53.0	63.9	58.5
Total (n)	77	69	146	117	119	236
χ^2=0.18, df=1, p=.67 Size of effect: -3.1%				χ^2=2.87, df=1, p=.09 Size of effect: 10.9%		

As can be seen in table 6.2.11, the context had no effect on responses to the attitude question among respondents with compulsory education only, but, although not very significant, had an effect in the predicted direction among respondents with more than compulsory education.

It is apparent from the above analysis that all the variables mentioned (sex, age, education, and strength of attitude) had a bearing on the relationship between context and attitude towards abortion on demand. Thus, it is important to see how these variables were interrelated. In order to do that a selection of logit models were fitted.

6.3 Logit analysis of attitudes towards abortion, context and strength of attitude.

Unfortunately the sample was too small to be broken down by all the variables, i.e., the target question attitude towards abortion, the base-rate question about attitudes towards abortion, context, sex, education, age of respondents (coded into three groups), and strength of attitude towards abortion.

Many theorists have suggested that attitude stability and resistance to change depend to a large extent on the strength of the attitude (Tourangeau and Rasinski, 1986; 1988; Schuman and Presser, 1981; Schuman, Presser and Ludwig, 1981; Sears, 1981; Converse, 1976), that is, the stronger people feel about a particular issue, the less likely they are to be affected by contextual variations. Although it has already been shown that respondents with very strong attitudes were much more likely to oppose abortion on demand (χ^2=9.97, p=.002, n=378) and that those who opposed abortion in the first wave were less likely to be influenced by the context (see table 6.2.5), it is not clear from the above analysis whether there was a significant interaction between these variables. To test whether these interactions were significant logit models were fitted to the variables attitude towards abortion (target question), the base-rate attitude towards abortion, context, and strength of attitude. The strength variable was coded onto two categories, i.e., 'very strong' vs. 'not very strong'. Ther were 5 response alternatives in the original variable, ranging from 'very strong' to 'very vague', but because only 54 of the 378 respondents said they did not have a strong attitude towards abortion it seemed to be more fruitful to code the variable into the two categories 'very strong' and 'not very strong'. Goodness-of-fit statistics for three basic models are shown in table 6.3.1. The models are: 1) a model of independence; 2) a model including all main effects; and 3) a model with all two-way interactions.

Table 6.3.1 **Goodness-of-fit statistics for attitude towards abortion - with abortion (base-rate measure), context, and strength of attitude as explanatory variables**

Model	chi-square	DF	Significance	conditional chi-square	DF	Significance
Independence	167.06	7	.000			
Main effects	7.15	4	.128	159.91	3	.000
Two-way interactions	3.12	1	.077	4.03	3	<.20

Table 6.3.2 shows the significant tests for the main effects. The only variable that had a significant main effect on attitude towards abortion in the second study, is the answer to the same question in Wave 1.

Table 6.3.2 **Significance test for main effects of abortion (base-rate measure), context, and strength of attitude on attitude towards abortion**

Effect deleted from main effects model in table 6.3.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Strength	8.20	5	.146	1.05	1	<.500
Context	9.34	5	.096	2.20	1	<.200
Abortion (base-rate)	155.93	5	.000	148.79	1	.000

None of the two-way interactions (table 6.3.3) reached significance, although both the interaction between the base-rate attitude and strength of attitude, and the interaction between context and strength approached significance ($p<.20$).

Table 6.3.3 **Significance test for two-way interactions between abortion (base-rate measure), context, and strength of attitude**

Effect added to main effects model in table 6.3.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Base-rate x context	6.53	3	.088	0.61	1	<.50
Base rate x strength	5.47	3	.140	1.67	1	<.20
Context x strength	5.12	3	.163	2.02	1	<.20

Although none of the two-way interactions were statistically significant, the changes in attitude towards abortion in relation to strength of attitude and context were in the predicted direction (see table 6.3.4.). The fit for the model with all two-way

interactions shows that the three-way interaction between attitude towards abortion (base-rate), context, and, strength of attitude was significant (χ^2=3.12, df=1, p=.077).

Table 6.3.4 Changes in attitude towards abortion between studies, broken down by context and strength of attitude

Context	Strength of attitude	Direction of change	Number and % of respondents who change their response
Predicted direction			
pro-context	very strong	oppose - favour	6 (11.11%)
pro-context	not very strong	oppose - favour	12 (18.18%)
anti-context	very strong	favour - oppose	4 (16.67%)
anti-context	not very strong	favour - oppose	13 (36.11%)
Opposite direction			
pro-context	very strong	favour - oppose	5 (26.32%)
pro-context	not very strong	favour - oppose	6 (12.24%)
anti-context	very strong	oppose - favour	6 (8.57%)
anti-context	not very strong	oppose - favour	8 (16.67%)

A total of 12.57% of respondents with 'very strong' attitudes, changed their response between waves in the predicted or the opposite direction. The equivalent figure was 19.6% for respondents with 'not very strong' attitudes. Thus, respondents with 'very strong' attitudes towards abortion were, first of all, more likely to oppose abortion on demand than respondents with 'not very strong' attitudes. Secondly, respondents who oppose abortion on demand were less likely to change their response as a result of different contexts. Thirdly, respondents with 'not very strong' attitudes were more likely to change their response to make it consistent with responses to the context items, and finally respondents with 'not very strong' attitudes were more likely to change their response, irrespective of whether the change was in the predicted, or the opposite direction. The only cell in table 6.3.4. that deviated from the predictions made was the cell for respondents with 'very strong' attitudes, who changed their response from favour to oppose under the pro-context condition. This might suggest that respondents with 'very strong' attitudes were more likely to show a backfire effect under the pro-context condition, than were respondents with 'not very strong'

attitudes. On the other hand, this might well have been due to random fluctuations, since only 19 respondents with very strong attitudes in the pro-context condition said they favoured abortion on demand in the first study.

Table 6.3.5 shows the parameters for the saturated model.

Table 6.3.5 **λ-parameters, log-odds, odds, predicted, and actual proportion of respondents saying they favour abortion on demand, based on the saturated model for the variables: attitude towards abortion (target), base-rate attitude, context, and strength of attitude**

EFFECT LEVEL	λ-para-meters	Log-odds	Odds	Predicted proportion	Observed proportion
Attitude towards abortion					
1. Favour abortion	-.149	-0.298	0.743	0.426	0.361
Attitude by base-rate attitude					
1. Favour	.796	1.592	3.650	0.785	0.781
2. Oppose	-.796	-1.592	0.151	0.131	0.134
Attitude by context					
1. Pro-context	.076	0.152	0.864	0.464	0.399
2. Anti-context	-.076	-0.152	0.638	0.390	0.320
Attitude by strength of attitude					
1. Very strong	-.077	-0.154	0.636	0.389	0.275
2. Not very strong	.077	0.154	0.866	0.464	0.432
Attitude by base-rate attitude by context					
1.1. Favour - pro-context	.027	0.053	4.480	0.818	0.838
1.2. Favour - anti-context	-.027	-0.053	2.974	0.748	0.717
2.1. Oppose - pro-context	-.027	-0.053	0.167	0.143	0.150
2.2. Oppose - anti-context	.027	0.053	0.137	0.120	0.119
Attitude by base-rate attitude by strength					
1.1. Favour - very strong	.090	0.179	3.741	0.789	0.791
1.2. Favour - not very strong	-.090	-0.179	3.561	0.781	0.776
2.1. Oppose - very strong	-.090	-0.179	0.108	0.098	0.097
2.2. Oppose - not very strong	.090	0.179	0.211	0.174	0.175
Attitude by context by strength					
1.1. Pro-context - very strong	-.112	-0.225	0.592	0.372	0.274
1.2. Pro-context - not very strong	.112	0.225	1.262	0.558	0.478
2.1. Anti-context - very strong	.112	0.225	0.685	0.406	0.277
2.2. Anti-context - not very strong	-.112	-0.225	0.595	0.373	0.369
Attitude by base-rate attitude by context by strength					
1.1.1. Favour - pro - very strong	-.135	-0.27012	2.800	0.737	0.737
1.1.2. Favour - pro - n. v. strong	.135	0.27012	7.167	0.878	0.878
1.2.1. Favour - anti - very strong	.135	0.27012	5.000	0.833	0.833
1.2.2. Favour - anti - n. v. strong	-.135	-0.27012	1.769	0.639	0.639
2.1.1. Oppose - pro - very strong	.135	0.27012	0.125	0.111	0.111
2.1.2. Oppose - pro - n. v. strong	-.135	-0.27012	0.222	0.182	0.182
2.2.1. Oppose - anti - very strong	-.135	-0.27012	0.094	0.086	0.086
2.2.2. Oppose - anti - n. v. strong	.135	0.27012	0.200	0.167	0.167

Size of effect: Base rate attitude favourable:	Very strong: -9.6%	Not very strong: 23.9%
Size of effect: Base rate attitude unfavourable:	Very strong: 2.5%	Not very strong: 1.5%

The results in table 6.3.5 show that only those respondents who had a favourable and not very strong attitude towards abortion showed the expected consistency effect, the size of which was very substantial or 23.9%. Respondents who had a strong

favourable attitude towards abortion showed a contrast effect, but opponents of abortion on demand showed no effect at all, whether they had very strong or not very strong attitudes.

6.4 Logit analysis of the effects of context, and background variables, on attitudes towards abortion

In order to find the model that best describes the data, four basic models were fitted to the variables attitude towards abortion (target question), base-rate attitude, context, sex, and education:

1) Model of independence, i.e., attitude towards abortion is independent of all the other variables in the model.
2) Model including all main effects, i.e., all explanatory variables have an effect on attitude towards abortion, while this effect does not depend on the level of other independent variables.
3) All two-way interactions included, i.e., the effect of independent variables depends on the level of other independent variables.
4) All three-way interactions included, i.e., the effect of independent variables depends on the combined levels of pairs of other independent variables.

Table 6.4.1 shows the goodness-of-fit statistics for the four basic models

Table 6.4.1 **Goodness-of-fit statistics for attitude towards abortion - with abortion (base-rate measure), context, sex and education as explanatory variables**

Model	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Independence	179.88	15	.000			
Main effects	17.94	11	.083	161.94	4	.000
Two-way interactions	12.24	5	.032	5.69	6	<.500
Three-way interactions	1.58	1	.201	10.66	4	<.050

As table 6.4.1 shows, the fit of the main effects and the two-way interaction models is not very good. This, and the substantial improvement that is found when the three-way interactions are added, suggests that there is at least one significant three-way interaction. Significance tests for individual main effects are presented in table 6.4.2, for two-way interactions in table 6.4.3, and for three-way interactions in table 6.4.4.

Table 6.4.2 **Significance test for main effects of abortion (base-rate measure), context, sex, and education on attitude towards abortion**

Effect deleted from main effects model in table 6.4.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Abortion	161.25	12	.000	143.31	1	.000
Context	20.11	12	.065	2.17	1	<.200
Sex	20.76	12	.054	2.82	1	<.100
Education	19.42	12	.079	1.49	1	<.300

Table 6.4.3 **Significance test for two-way interactions between abortion (base-rate measure), context, sex, and education**

Effect added to main effects model in table 6.4.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Base-rate x context	17.39	10	.066	0.55	1	<.500
Base-rate x sex	16.94	10	.076	1.00	1	<.500
Base-rate x education	17.75	10	.059	0.19	1	<.700
Context x sex	17.54	10	.063	0.40	1	<.700
Context x education	14.44	10	.154	3.50	1	<.100
Sex x education	17.62	10	.062	0.31	1	<.700

Table 6.4.4 **Significance test for three-way interactions between abortion (base-rate measure), context, sex, and education**

Effect added to two-way inter-actions model in table 6.4.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Base-rate x context x sex	9.78	4	.044	2.46	1	<.200
Base-rate x context x education	10.04	4	.040	2.20	1	<.200
Base-rate x sex x education	11.79	4	.019	0.45	1	<.700
Context x sex x education	6.39	4	.172	5.86	1	<.020

As table 6.4.4 shows, there was a highly significant interaction between context, sex, and education. The effect of the base-rate attitude towards abortion, on the other hand, was not conditioned by any of the background variables (see tables 6.4.3, and 6.4.4). Hence the best model is the model with the main effects of the base-rate attitude, context, sex, and education, the two-way interaction between context and education, two-way interaction between context and sex, two way interaction between sex and education and finally the three-way interaction between context, sex, and education (Goodness-of-fit: χ^2=7.34, df=7, p=.395). The parameters for this model are presented in table 6.4.5.

Table 6.4.5 **λ-parameters, log-odds, odds, predicted, and actual proportion of respondents saying they favour abortion on demand, based on a model with a main effect of base rate attitude, and a three-way interaction between context, sex, and education**

EFFECT LEVEL	λ-para-meters	Log-odds	Odds	Predicted proportion	Observed proportion
Attitude towards abortion (target)					
1. Favour	-.189	-0.378	0.685	0.407	0.361
Attitude by base-rate attitude					
1. Favour	.806	1.612	3.435	0.775	0.781
2. Oppose	-.806	-1.612	0.137	0.120	0.138
Attitude by context					
1. Pro-context	.073	0.147	0.794	0.442	0.397
2. Anti-context	-.073	-0.147	0.592	0.372	0.324
Attitude by sex					
1. Male	.140	0.280	0.906	0.475	0.439
2. Female	-.140	-0.280	0.518	0.341	0.282
Attitude by education					
1. Compulsory	-.106	-0.212	0.554	0.357	0.266
2. More than compulsory	.106	0.212	0.847	0.459	0.419
Attitude by context by sex					
1.1. Pro-context - male	.095	0.190	1.270	0.559	0.520
1.2. Pro-context - female	-.095	-0.190	0.496	0.332	0.264
2.1. Anti-context - male	-.095	-0.190	0.647	0.393	0.348
2.2. Anti-context - female	.095	0.190	0.541	0.351	0.300
Attitude by context by education					
1.1. Pro-context - compulsory	-.149	-0.299	0.476	0.323	0.270
1.2. Pro-context - m. than comp.	.149	0.299	1.323	0.570	0.478
2.1. Anti-context - compulsory	.149	0.299	0.645	0.392	0.262
2.2. Anti-context - m. than comp.	-.149	-0.299	0.543	0.352	0.360
Attitude by sex by education					
1.1. Male - compulsory	.045	0.090	0.802	0.445	0.375
1.2. Male - m. than compulsory	-.045	-0.090	1.025	0.506	0.466
2.1. Female - compulsory	-.045	-0.090	0.383	0.277	0.193
2.2. Female - m. than comp.	.045	0.090	0.701	0.412	0.357
Attitude by context by sex by education					
1.1.1. Pro - male - compulsory	.202	0.405	1.249	0.555	0.469
1.1.2. Pro - male - m. than comp.	-.205	-0.405	1.291	0.563	0.545
1.2.1. Pro - female - compulsory	-.205	-0.405	0.182	0.154	0.119
1.2.2. Pro - female - m. than comp.	.205	0.405	1.356	0.576	0.388
2.1.1. Anti - male - compulsory	-.205	-0.405	0.515	0.340	0.250
2.1.2. Anti - male - m. than comp.	.205	0.405	0.814	0.449	0.385
2.2.1. Anti - female - compulsory	.205	0.405	0.809	0.447	0.268
2.2.2. Anti - female - m. than comp.	-.205	-0.405	0.362	0.266	0.327

Size of effect for male respondents:	Comp. education: 21.9%	More than comp. ed.: 16.0%
Size of effect for female respondents:	Comp. education: -14.9%	More than comp. ed.: 6.1%

The odds and the proportions (table 6.4.5) for the interaction between attitude towards abortion, context, sex and education show that male respondents were affected by the context as predicted. The only difference between men with compulsory education only and more educated men was that more educated men were more likely to favour abortion on demand and the size of the effect was somewhat larger for men with less education, or 21.6% as opposed to 16% for those with further education. Female respondents with compulsory education only were likely to show a backfire effect, i.e., they were more likely to favour abortion on demand under the anti-context condition than under the pro-context condition, a difference of 14.9%. Women with more than compulsory education, on the other hand, resembled the male respondents in that they showed the predicted susceptibility to the context, although the size of the effect was smaller, or only 6.1%. None of the standardized residuals (depicted in table 6.4.6) is larger than ± 1.96. Hence, there are no important deviations from the model.

Table 6.4.6 **Observed, (expected) frequencies and standardized residuals for the model with main effects of the base-rate attitude, context, sex, and education, and two- and three-way interactions between context, sex, and education**

				Attitude towards abortion			
Base-rate	Context	Sex	Education	Favour	Standardized Residuals	Oppose	Standardized Residuals
favour	pro-context	male	compulsory	12(11.21)	.236	1(1.79)	-.591
favour	pro-context	male	more than comp.	31(29.45)	.286	3(4.55)	-.727
favour	pro-context	female	compulsory	2(3.81)	-.928	6(4.19)	.885
favour	pro-context	female	more than comp.	12(11.33)	.198	1(1.67)	-.517
favour	anti-context	male	compulsory	4(4.32)	-.156	2(1.68)	.250
favour	anti-context	male	more than comp.	18(19.27)	-.290	6(4.73)	.586
favour	anti-context	female	compulsory	7(6.42)	.230	1(1.58)	-.464
favour	anti-context	female	more than comp.	14(14.18)	-.048	8(7.82)	.065
oppose	pro-context	male	compulsory	3(3.79)	-.406	16(15.21)	.203
oppose	pro-context	male	more than comp.	5(6.55)	-.606	27(25.45)	.308
oppose	pro-context	female	compulsory	3(1.19)	1.662	31(32.81)	-.316
oppose	pro-context	female	more than comp.	7(7.67)	-.241	29(28.33)	.125
oppose	anti-context	male	compulsory	2(1.68)	.250	16(16.32)	-.080
oppose	anti-context	male	more than comp.	7(5.73)	.533	34(35.27)	-.215
oppose	anti-context	female	compulsory	4(4.58)	-.272	29(28.42)	.109
oppose	anti-context	female	more than comp.	2(1.82)	.135	25(25.18)	-.036

Since it has been shown above that the effect of the context depends to a certain extent on the age of respondents (see table 6.2.9), age was added to the model as a covariate to see whether any of the effects in the model above were conditioned by the age of respondents. The results are presented in table 6.4.7.

Table 6.4.7 Significance tests for the conditioning effects of age on base-rate attitude, context, sex, and education

Effect tested	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Context x sex x education x age	5.95	6	.429	1.39	1	<.300
Context x education x age	7.15	6	.307	0.19	1	<.700
Context x sex x age	4.36	6	.627	2.97	1	<.100
Sex x education x age	6.91	6	.329	0.43	1	<.700
Education x age	7.34	6	.291	0.00	1	<.990
Sex x age	7.21	6	.302	0.13	1	<.800
Context x age	7.20	6	.302	0.13	1	<.800
Base-rate attitude x age	6.84	6	.335	0.49	1	<.500

The interaction between context, sex, and age approached significance (χ^2=2.97, df=1, p<.10), but more importantly, when only main effects of all variables were included in the model, there was found to be a highly significant interaction between context and age (χ^2=6.21, df=1, p<.02). This interaction loses its significance when the three-way interaction between context, sex, and education is added (as can be seen in table 6.4.7 the significance level for this effect is <.80), which might suggest that much of the conditioning effect of the age of respondents was due to the peculiar combination of sex and education for the different age groups.

Tourangeau (1986) has suggested that the contrast or backfire effect is due to respondents disagreeing with the context items and thus taking a much stronger position than they otherwise might have. The only group of respondents that showed a contrast effect was female respondents with compulsory education. However, they did not disagree with the women's rights items any more than other respondents, but were slightly more likely to agree with the traditional items stating that women

should stay at home and leave running the country to men and that it is wrong for a married person to have sexual relations with other than the marriage partner. Table 6.4.8 shows the average agreement in each group.[7]

Table 6.4.8 Average agreement to context items on women's rights (pro) and traditional values (anti)

Context	Sex	Education	Mean	Standard dev.	n
pro	male	compulsory	9.17	1.13	36
pro	male	more than compulsory	9.61	0.73	70
pro	female	compulsory	9.38	1.33	47
pro	female	more than compulsory	9.45	1.19	53
anti	male	compulsory	8.22	1.48	27
anti	male	more than compulsory	7.92	1.70	78
anti	female	compulsory	8.47	1.50	47
anti	female	more than compulsory	7.89	1.67	53

There was not a significant difference between male and female respondents, but there was a significant interaction between context and education $F_{1,403}=5.97$, $p=.015$.

Agreement was coded into two categories (above or below average agreement [8.7]) to try to obtain a simpler picture of how agreement might mediate the effects of the context. It turns out that the results lend substantial support to Tourangeau's (1987) claim that disagreement with the context items leads to a backfire or contrast effect (see table 6.4.9).

[7] Agreement was measured on a scale from 1 to 5, where 5 stands for 'strongly agree'. To get a joint measure of agreement for the two items, the two values were added, resulting in a scale ranging from 2 to 10.

Table 6.4.9 Effect of context and agreement to context items on attitude towards abortion

	Agreement to context items					
	Above average			*Below average*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
favour	42.2%	29.6%	37.5%	22.2%	40.2%	36.0%
oppose	57.8	70.4	62.5	77.8	59.8	64.0
Total (n)	166	98	264	27	87	114
χ^2=4.16, df=1, p=.041				χ^2=2.90, df=1, p=.089		

Interaction between context and agreement: LRχ^2=6.44, df=1, p=.011

General log-linear analysis, including the base-rate attitude, context, agreement, sex and education shows, that there was a significant interaction between context, agreement and sex, but the interaction between context, sex and education discussed above lost its significant when agreement was taken into account. As shown in table 6.4.10, although there was a very small backfire effect for women who do not agree with the context items, there was a much more robust effect found among male respondents.

Table 6.4.10 Effect of context, agreement to context items and sex on attitude towards abortion

Context	Agreement	Sex	Favour %	Oppose %	n	size of effect
pro	agree	male	58.8	41.2	85	
anti	agree	male	31.1	68.9	45	27.7%
pro	disagree	male	14.3	85.7	14	
anti	disagree	male	44.9	55.1	49	-30.6%
pro	agree	female	24.7	75.3	81	
anti	agree	female	28.3	71.7	53	-3.6%
pro	disagree	female	30.8	69.2	13	
anti	disagree	female	34.2	65.8	38	-3.4%
Total in pro-context condition			39.2	60.8	194	
Total in anti-context condition			34.0	66.0	188	5.2%

Interaction between context, agreement and sex: LRχ^2=7.01, df=1, p=.008

In the overall sample there was only a small and statistically nonsignificant effect (5.2%) of different context items. When sex and agreement with the context items are taken into account, a much clearer and different pattern emerges. Male respondents who agreed with the context items showed a strong assimilation effect (27.7%), while men who did not agree with the items showed an even stronger contrast effect (-30.6), hence when taken together the effects were cancelled out. The context did not seem to have a significant effect on female respondents whether or not they agreed or disagreed with the items, although as shown above, women who had finished compulsory education or less showed a contrast effect. Very few respondents disagreed, or did not strongly agree with the women's rights items, making more detailed analysis very difficult.

6.5 Think-aloud and attitudes towards abortion

The attitudinal assertions concerning traditional values and women's rights and the attitude questions were included in the experiments where respondents were asked to think-aloud while answering the questions.

The effects of the different contexts can be seen very clearly in table 6.5.1. In the anti-abortion group there were two favourable responses, four respondents favoured abortion given that certain conditions were fulfilled, and three said they oppose abortion on demand. The pattern of responses in the group that got the pro-abortion context was very different, i.e., none of the eight respondents opposed abortion on demand, five said they favour abortion on demand, and two said they favoured abortion when certain conditions are met, and one respondent answered 'don't know'.

Table 6.5.1 Agreement with context items and attitudes towards abortion in think-aloud interviews

Anti-abortion context			*Pro-abortion context*		
Trouble with modern society that it is easy not to take responsibility	Having sex with other than your marriage partner is wrong	Abortion	Women should stay at home and leave the running the country to men	Evaluation on basis of qualifications rather than sex	Abortion
Disagree	Agree	Favour (C)	Disagree	Agree	Favour
Agree	Agree	Favour (C)	Disagree	Agree	Favour (C)
Disagree	Agree	Favour (C)	Disagree	Agree	Favour
Disagree	Agree	Oppose	Disagree	Agree	Favour
Disagree	Agree	Oppose	Disagree	Agree	Don't know
Agree	Agree	Favour (C)	Disagree	Agree	Favour
Agree	Agree	Favour	Disagree	Agree	Favour (C)
Agree	Agree	Oppose	Disagree	Agree	Favour
Agree	Agree	Favour			

(C) means that the respondent said s(he) was in favour of abortion under certain circumstances

Respondents did not refer to the attitude assertions when they were asked what they had been thinking when they answered the question about abortion, so even though the assertions (the context) seemed to direct their thoughts, respondents did not seem to be aware of these effects. The thoughts listed by the two groups were different. In the anti-abortion context, most respondents emphasized the necessity of making sure that abortion can't be used instead of contraception. Only one respondent in the pro-abortion condition referred to the danger of women relying on abortion instead of using contraception. Respondents in this group were more likely to say that they were thinking of women's rights and that women should be able to take responsibility for themselves and should have a choice. A young woman said that when she was answering the questions she was 'mainly thinking of women's liberation and that women should have the same opportunities as men and their qualities and qualifications should be appreciated.'

6.6 Summary of effects of context on attitudes towards abortion

At first glance, context did not seem to have any effect on attitudes towards abortion on demand. However, the results suggest that this was due to the effects cancelling out in the overall sample. It has been shown above that male respondents who agreed with the attitudinal assertions showed a strong assimilation effect, as predicted, but men who disagreed with the context items and female respondents with compulsory education showed a contrast or backfire effect, making their responses dissimilar to the context items but at the same time more consistent with their own answers to the context items. Not many respondents disagreed with the context items, and none in the think-aloud experiments disagreed with the women's rights items, making it impossible to judge whether the contrast effect was due to respondents' counterarguing, as has been suggested by Tourangeau and Rasinski (1986). The fact that women seemed to be less likely to be influenced by the context might be a result of greater involvement, which is believed to condition context effects.

Strength of attitude was found to be related to attitudinal position in such a way that respondents who opposed abortion on demand were likely to have a much stronger and less ambivalent opinion than those who were in favour of abortion. Respondents opposed to abortion on demand were more resistant to change and less likely to be influenced by the context. In other words, the conservative attitude (opposition) was held with greater fervour than the liberal position and showed much greater temporal stability.

6.7 Context effect on attitude towards declaring the Nordic countries free of nuclear weapons

Most respondents, or over 80%, had a favourable attitude towards declaring the Nordic countries free of nuclear weapons. The relationship between attitudes towards 'nuclear-free north' and the pro-/anti-context items is depicted in table 6.7.1.

Table 6.7.1 'Nuclear-free North' by context

	Context		
	pro-context	anti-context	Total
favour strongly	72.4%	58.0%	65.1%
favour	13.6	28.8	21.3
neither-nor	4.0	2.4	3.2
oppose	4.5	4.9	4.7
oppose strongly	5.5	5.9	5.7
Total (n)	199	205	404

χ^2=14.99, df=4, p=.00
Size of effect (favour strongly): 14.4%
Size of effect (oppose strongly): 0.4%

The major differences between the pro-context and the anti-context groups in table 6.7.1 are in the top two categories, i.e., favour strongly, and favour. This suggests that although there were significant differences between the groups that can be attributed to the different contexts, the effect was not so strong as to affect the favour-oppose proportions. This becomes apparent in table 6.7.2, which shows no differences between the two groups.

Table 6.7.2 'Nuclear-free North' by context

	Context pro-context	anti-context	Total
favour	89.5%	89.0%	89.3%
oppose	10.5	11.0	10.7
Total (n)	191	200	391

χ^2=0.03, df=1, p=.87
Size of effect: 0.5%

With 90% (see table 6.7.2) of respondents in favour of declaring the Nordic countries free of nuclear weapons, it is obvious that it is almost impossible to compare the respondents who favoured and the respondents who opposed declaring the Nordic countries free of nuclear weapons with respect to their susceptibility to the context. Table 6.7.3 shows the changes in responses to the attitude question and how they were affected by the context.

Table 6.7.3 'Nuclear-free North' by context, controlling for responses to the base rate question

	Response to base rate question					
	Favour			*Oppose*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
favour strongly	85.0%	66.5%	75.5%	0.0%	0.0%	0.0%
favour	14.4	29.0	21.9	7.7	18.8	13.8
neither-nor	0.0	1.1	0.6	15.4	6.3	10.3
oppose	0.0	2.3	1.2	30.8	18.8	24.1
oppose strongly	0.6	1.1	0.9	46.2	56.3	51.7
Total(n)	167	176	343	13	16	29

χ^2=18.24, df=4, p=.001
Cells with E.F.<5= 6 of 10 (60%)
Size of effect (favour strongly): 18.1%

χ^2=1.78, df=3, p=.618
Cells with E.F.<5=6 of 8 (75%)
Size of effect (oppose strongly): 10.1%

As table 6.7.3 shows, there were only a few people who changed their response from one side to the other (this can be seen more clearly in table 6.7.4). Although both table 6.7.3 and table 6.7.4 seem to imply that only the respondents who initially said they were in favour of declaring the Nordic countries free of nuclear weapons were pushed in the predicted direction by the context, it is problematic to make such a claim when the majority of the cells had expected frequencies of less than 5. Nevertheless, the pattern in the subtable for respondents who were in favour of declaring the Nordic countries free of nuclear weapons in the first interview totally complied with the predictions, i.e., only one respondent in the pro-context condition changed his response from favour to oppose (or neutral), as compared with eight respondents in the anti-context condition. The other subtable deviates more from the predictions (although it must not be forgotten that this table is based on only 29 respondents), i.e., *more* people changed their response from oppose to either neutral or favour under the anti-context condition than under the pro-context condition, 4 and 3 respondents, respectively. However, there was a higher proportion of respondents that strongly oppose declaring the Nordic countries free of nuclear weapons under the anti-attitudinal condition than under the pro-attitudinal one.

Table 6.7.4 **'Nuclear-free North' (dichotomous) by context, controlling for responses to the base rate question**

Response to base rate question

	Favour			*Oppose*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
favour	99.4%	96.6%	97.9%	9.1%	20.0%	15.4%
oppose	0.6	3.4	2.1	90.9	80.0	84.6
Total (n)	167	174	341	11	15	26
χ^2=3.44, df=1, p=.064				χ^2=0.58, df=1, p=.446		
Cells with E.F.<5= 2 of 4 (50%)				Cells with E.F.<5=2 of 4 (50%)		
Size of effect: 2.8%				Size of effect: -10.9%		

Because most of the respondents were in favour of declaring the Nordic countries free of nuclear weapons, it was not possible to carry out the analysis in the same way as for the attitude towards abortion. Instead, a new variable with three categories was created. The categories are: 1) change towards oppose, 2) no change, and 3) change towards favour. Table 6.7.5 shows the relationship between this new variable and the context.

Table 6.7.5 Change in attitude towards 'nuclear-free North' by context

	Context		
	pro-context	anti-context	Total
change towards oppose	9.4%	18.9%	14.3%
no change	73.8	66.7	70.2
change towards favour	16.8	14.4	15.6
Total (n)	191	201	392

χ^2=7.22, df=2, p=.027 Effect: 16.8-9.4=7.4% Effect: 18.9-14.4=4.5%

The changes in responses that are presented in table 6.7.5 were in the predicted direction, with a significance level of .027. The most noticeable aspect of the table is how many respondents changed their response towards favour under the anti-context condition, i.e., 14.4% of respondents in the anti-context group changed their response in the direction opposite to the one predicted. The comparable figure for the pro-context group was 9.4%. The significance of the χ^2 was mainly due to different proportions changing their response towards oppose in the two experimental conditions. Of the 56 respondents who changed their response towards oppose, 67.9% were in the anti-context group and 32.1% in the pro-context group. Unfortunately, the proportions for respondents who changed in the direction of favour did not support the hypothesis as neatly; only 52.5% of the 61 respondents who changed their response towards favour belonged to the pro-context group and thus 47.5% belonged to the anti-context group. However, this may to some extent be

explained by a ceiling effect since 63% had already said they were strongly in favour of declaring the Nordic countries free of nuclear weapons.

Looking at this 'change' variable and the reported strength of the attitude towards declaring the Nordic countries free of nuclear weapons provides an opportunity to test the hypothesis put forward by Schuman and Presser (1981) that attitude strength is associated with reliability but not with resistance to shifting. Table 6.7.6 depicts the relationship between attitude change and strength of the attitude.

Table 6.7.6 Change in attitude towards 'nuclear-free North' by strength of attitude

	Strength of attitude		
	very strong	not very strong	Total
change towards oppose	12.2%	17.3%	14.3%
no change	79.1	57.4	70.2
change towards favour	8.7	25.3	15.6
Total (n)	230	162	392

χ^2=24.99, df=2, p=.000

Table 6.7.6 shows that there was a strong association between reliability and the strength of attitude, in such a way that respondents who reported having very strong attitudes towards declaring the Nordic countries free of nuclear weapons, whether for or against, were much less likely to change their response, than respondents who did not have very strong attitudes. Whether the former were also less likely to be affected by the context can be seen in table 6.7.7.

Table 6.7.7 **Change in attitude towards 'nuclear-free North' by context, controlling for strength of attitude**

	Strength of attitude					
	Very strong			*Not very strong*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
change towards oppose	8.2%	16.7%	12.2%	11.6%	21.5%	17.3%
no change	79.5	78.7	79.1	63.8	52.7	57.4
change towards favour	12.3	4.6	8.7	24.6	25.8	25.3
Total (n)	122	108	230	69	93	163
χ^2=7.25, df=2, p=.027				χ^2=3.12, df=2, p=.210		
Effects (predicted over opposite)	4.1%	12.1%		13%	-4.3%	

The results presented in table 6.7.7 do indeed support the hypothesis that reliability is related to attitude strength – the stronger the attitude, the greater its reliability. Furthermore, the table suggests that resistance to change is <u>not</u> associated with attitude strength, but that respondents who did not have very strong attitudes were more likely to change their response in a random manner. Although only 20% of respondents with 'very strong' attitudes changed their response, these changes are coherent with predictions in that a larger proportion of respondents who changed, changed in the predicted direction. In the pro-context condition 4.1% more respondents changed towards favour than towards oppose, but 12.1% more changed towards oppose than towards favour in the anti-context condition. The changes, that occurred among respondents who did not hold very strong attitudes towards declaring the Nordic countries free of nuclear weapons were less clear cut: 43% of these respondents changed their response in one way or the other, but these changes were not dependent on the context (χ^2=3.12, p=.210, n=163). For these respondents, the anti-context seemed to 'backfire', i.e., 25.8% of respondents in the anti-context group changed their response towards favour as opposed to 24.6% in the pro-context group. Hence, it is necessary to look at the effect of demographic variables to see if there was a group of people that was affected by the context in such a way that it resulted in a contrast effect.

Table 6.7.8 shows the effects of the context for male and female respondents separately.

Table 6.7.8 Change in attitude towards 'nuclear-free North' by context, controlling for sex

	Sex					
	Male			*Female*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
change towards oppose	12.5%	21.7%	17.3%	6.3%	15.8%	11.1%
no change	68.8	62.3	65.3	78.9	71.6	75.3
change towards favour	18.8	16.0	17.3	14.7	12.6	13.7
Total (n)	96	106	202	95	95	190
χ^2=3.00, df=2, p=.223				χ^2=4.35, df=2, p=.113		
Effects (pred. over opposite)	6.3%	5.7%		8.4%	3.2%	

The most obvious difference between men and women (table 6.7.8) is that female respondents showed greater reliability than did the men. This might suggest that the women held stronger attitudes towards declaring the Nordic countries free of nuclear weapons than the men. On the other hand, there was no apparent reason to suspect an interaction between context and gender. In fact, although 3% more of the women expressed a very strong attitude, there was no significant association between strength of attitude and sex (χ^2=6.69, df=4, p=.153) Overall, the effect of the context was so weak that when the table is broken down by sex, or in fact any of the background variables, the context loses its significance. Table 6.7.9 shows the effect of the context for the three age groups, 18-30, 31-50, and 51-70, and table 6.7.10 the effect for respondents with compulsory education, on the one hand, and respondents with more than compulsory education on the other.

Table 6.7.9 **Change in attitude towards 'nuclear-free North' by context, controlling for age**

	Context pro-context	anti-context	Total
18-30 years			
change towards oppose	7.7%	16.7%	12.0%
no change	72.3	66.7	69.6
change towards favour	20.0	16.7	18.4
Total (n)	65	60	125
χ^2=2.43 df=2, p=.297			
31-50 years			
change towards oppose	11.4	17.8	15.0
no change	74.7	69.3	71.7
change towards favour	13.9	12.9	13.3
Total (n)	79	101	180
χ^2=1.44 df=2, p=.487			
51-70 years			
change towards oppose	8.5	25.0	16.1
no change	74.5	60.0	67.8
change towards favour	17.0	15.0	16.1
Total (n)	47	40	87
χ^2=4.37 df=2, p=.112			
Significance test for interactions:	LR $\chi^2_{change*age*context}$=1.05, df=4, p=.902		
	LR $\chi^2_{change*age}$ =2.04, df=4, p=.728		
	LR $\chi^2_{change*context}$ =7.37, df=2, p=.025		

Although the chi-square for the oldest respondents is closest to being significant (and would indeed have been significant if there had been as many respondents as in the 31-50 group, given that the proportions were unchanged), the pattern of change was very similar for all age groups, making it unlikely that the effect of context depended on age, as the general log-linear analysis in fact shows. The only variable that had a significant effect on changes was the context.

Table 6.7.10 Change in attitude towards 'nuclear-free North' by context, controlling for education

	Education					
	Compulsory			*More than compulsory*		
	pro-context	anti-context	Total	pro-context	anti-context	Total
change towards oppose	7.1%	19.8%	14.3%	10.7%	18.2%	14.3%
no change	75.7	67.0	70.8	72.7	66.4	69.7
change towards favour	17.1	13.2	14.9	16.5	15.5	16.0
Total	43.5	56.5	100.0	52.4	47.6	100.0
χ^2=5.26, df=2, p=.072				χ^2=2.61, df=2, p=.272		
Effects (pred. over opposite)	10%	6.6%		5.8%	2.7%	

Table 6.7.10 shows that the context effect was closer to being significant for respondents with compulsory education only than for respondents with more than compulsory education. Nevertheless, the patterns in the two subtables are quite similar, making it unlikely that there was a significant interaction between context and education (LR $\chi^2_{change*education*context}$=0.808, df=2, p=.668).

6.8 Logit analysis of the effects of context and strength of attitude on changes in attitudes towards declaring the Nordic countries free of nuclear weapons.

In order to test whether the strength of the attitude only affected its reliability or whether it also affected susceptibility to different contexts, logit models were fitted to test the effects of context and strength on changes in attitude towards declaring the Nordic countries free of nuclear weapons. In other words, did the respondents with 'very strong' attitudes change their response as a result of the context, if they changed their response at all, and did respondents with 'not very strong' attitudes to a greater extent change their response in a random manner?

Table 6.8.1 **Goodness-of-fit statistics for change in attitudes towards declaring the Nordic countries free of nuclear weapons with context, and strength of attitude as explanatory variables**

Model	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Independence	35.56	6	.000			
Main effects	3.61	2	.164	31.95	4	.000

Table 6.8.1 demonstrates that the changes in reported attitude were affected by one or both context and strength of attitude, i.e., the fit of the independence model is inadequate. In addition, the table shows that the interaction between context and strength of attitude was significant at .164. Table 6.8.2 shows the significance tests for the main effects of context and strength of attitude.

Table 6.8.2 **Significance test for main effects of context, and strength of attitude on changes in attitude towards declaring the Nordic countries free of nuclear weapons**

Effect added to the independence model in table 6.8.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Context	28.18	4	.000	7.37	2	.025
Strength	10.70	4	.030	24.85	2	.000

As can be seen in table 6.8.2, both context and strength of attitude made a significant contribution to the changes that took place in reported attitudes towards 'nuclear-free North' from one interview to the other. What these effects were is depicted in table 6.8.3.

Table 6.8.3 **λ-parameters, log-odds, odds, predicted, and actual proportion of respondents 1) changing their response, and 2) who changed their response, change towards oppose, and the effects of context and strength of attitude**

EFFECT LEVEL	λ-para-meters	Log-odds	Odds	Predicted proportion	Observed proportion
Attitude towards nukes					
1. Change/(no change)	-.520 *	-1.041	0.353	0.261	0.298
2. Oppose/(favour)	-.044 n.s.	-0.088	0.910	0.478	0.479
Attitude towards nukes by context					
1.1. Change - pro	-.046 n.s.	-0.091	0.322	0.244	0.262
1.2. Change - anti	.046 n.s.	0.091	0.387	0.279	0.333
2.1. Oppose - pro	-.232 *	-0.464	0.576	0.365	0.360
2.2. Oppose - anti	.232 *	0.464	1.457	0.593	0.567
Attitude towards nukes by strength					
1.1. Change - very strong	-.167 *	-0.334	0.253	0.202	0.209
1.2. Change - not very strong	.167 *	0.334	0.493	0.330	0.426
2.1. Oppose - very strong	.203 *	0.406	1.375	0.579	0.583
2.2. Oppose - not very strong	-.203 *	-0.406	0.610	0.379	0.406

* - 95% confidence interval for the parameter does not include 0.
n.s. - 95% confidence interval includes 0.

The non-significant parameter for the odds of changing one's attitude towards oppose, if a respondent changed her/his attitude at all, implies that about the same proportion of respondents changed their response towards oppose and towards favour, irrespective of context. The parameters for the context and for the strength of the attitude show that 1) about the same number of respondents changed their response under the pro- and anti-conditions; 2) respondents in the pro-context group were more likely to change their response towards favour, and respondents in the anti-context group were more likely to change towards oppose; 3) strength of attitude affected reliability in such a way that respondents with a very strong attitude were much less likely to change their response than were respondents who did not have very strong attitudes; and finally 4) if respondents with very strong attitudes changed their attitude, they were more likely to change their response towards

oppose (irrespective of context), whereas respondents who do not have very strong attitudes were more likely to change towards favour.

Finally, table 6.8.4 presents the observed, and expected frequencies and the standardized residuals, which show that there were no important deviations from the model with the main effects of context and strength of attitude.

Table 6.8.4 **Observed, (expected) frequencies and standardized residuals for the model with main effects of context and strength of attitude on changes in attitude towards declaring the Nordic countries free of nuclear weapons**

		*Change in attitude towards nuclear weapons in the North**					
Context	Strength	-1	Standard. residuals	0	Standard. residuals	1	Standard. residuals
pro-context	very strong	10(10.29)	-.090	97(99.81)	-.282	15(11.90)	.899
pro-context	not very strong	8(7.71)	.104	44(41.19)	.438	17(20.10)	-.691
anti-context	very strong	18(17.71)	.068	85(82.19)	.310	5(8.10)	-1.089
anti-context	not very strong	20(20.29)	-.064	49(51.81)	-.391	24(20.90)	.678

* -1=change towards oppose; 0=no change; 1=change towards favour

6.9 Logit analysis of change in attitudes towards declaring the Nordic countries free of nuclear weapons and the effects of context, strength of attitude, and agreement with the context items

As discussed above in relation to attitudes towards abortion it has been suggested that 'backfire' effects may be due to respondents disagreeing with the context items, and thus giving a response opposite to the one predicted. Thus a variable measuring agreement with the context items was added. The response scale for the context items ranged from 1 to 5 (strongly agree - strongly disagree). Responses to these items were more divergent than responses to the context items for the question about attitude towards abortion, making it possible to add the two context items and code

as high agreement if their sum was 4 or less, and low agreement if the sum was between 5 and 10.

Table 6.9.1 shows the goodness-of-fit statistics for the three basic models, i.e., independence model, main effects model, and the model including the two-way interactions.

Table 6.9.1 **Goodness-of-fit statistics for change in attitudes towards declaring the Nordic countries free of nuclear weapons with context, strength of attitude, and agreement with the context items, as explanatory variables**

Model	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Independence	34.93	14	.002			
Main effects	10.77	8	.215	24.16	6	.000
Two-way interactions	1.24	2	.537	9.53	6	.146

The significance tests for the main effects are presented in table 6.9.2, and for the two-way interactions in table 6.9.3.

Table 6.9.2 **Significance test for main effects of context, strength of attitude, and agreement on changes in attitude towards declaring the Nordic countries free of nuclear weapons**

Effect deleted from main effects model in table 6.9.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Context	15.83	10	.105	5.05	2	.080
Strength	24.93	10	.005	14.15	2	.001
Agreement	13.75	10	.185	2.98	2	.225

Table 6.9.3 **Significance tests for two-way interactions between context, strength of attitude, and agreement**

Effect added to main effects model in table 6.9.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Context x Strength	9.82	6	.133	0.96	2	.619
Context x Agree	6.57	6	.362	4.20	2	.122
Strength x Agree	6.47	6	.373	4.30	2	.116

Both the two-way interactions between context and agreement, and strength and agreement approached significance, but if we include only effects that were significant at the .10 level, the best model is the one with the main effects of context and strength of attitude (χ^2=13.75, df=10, p=.185). Table 6.9.4 for the parameters, and table 6.9.5 for the observed and expected frequencies are based on this model.

Table 6.9.4 **λ-parameters, log-odds, odds, predicted, and actual proportion of respondents 1) changing their response, and 2) who change their response, change towards oppose, and the effects of context and strength of attitude**

EFFECT LEVEL	λ-para-meters		Log-odds	Odds	Predicted proportion	Observed proportion
Attitudes to nukes						
1. Change/(no change)	-.541	*	-1.081	0.339	0.253	0.280
2. Oppose/(favour)	.002	n.s.	0.004	1.004	0.501	0.495
Attitudes to nukes by context						
1.1. Change - pro	-.021	n.s.	-0.041	0.326	0.246	0.263
1.2. Change - anti	.021	n.s.	0.041	0.353	0.261	0.298
2.1. Oppose - pro	-.270	*	-0.541	0.584	0.369	0.367
2.2. Oppose - anti	.270	*	0.541	1.724	0.633	0.625
Attitudes to nukes by strength						
1.1. Change - very strong	-.146	*	-0.292	0.253	0.202	0.209
1.2. Change - not very strong	.146	*	0.292	0.454	0.312	0.390
2.1. Oppose - very strong	.109	n.s.	0.219	1.249	0.555	0.545
2.2. Oppose - not very strong	-.109	n.s.	-0.219	0.807	0.446	0.453

* - 95% confidence interval for the parameter does not include 0
n.s. - 95% confidence interval includes 0

Table 6.9.5 **Observed, (expected) frequencies and standardized residuals for the model with main effects of context and strength of attitude on changes in attitude towards declaring the Nordic countries free of nuclear weapons**

			*Change in attitude towards nuclear weapons in the North**					
Context	Strength	Agreement	-1	Standard. residuals	0	Standard. residuals	1	Standard. residuals
pro	very strong	high agr.	8(7.98)	.009	77(78.06)	-.120	12(10.96)	.313
pro	very strong	low agr.	2(1.73)	.208	16(16.90)	-.219	3(2.37)	.407
pro	not very str.	high agr.	5(6.10)	-.446	33(30.91)	.376	12(12.99)	-.274
pro	not very str.	low agr.	3(2.20)	.542	11(11.13)	-.038	4(4.68)	-.313
anti	very strong	high agr.	8(4.61)	1.578	20(23.24)	-.672	2(2.15)	-.102
anti	very strong	low agr.	6(9.69)	-1.184	54(48.80)	.744	3(4.51)	-.713
anti	not very str.	high agr.	5(7.16)	-.807	16(18.67)	-.619	10(5.17)	2.126
anti	not very str.	low agr.	11(8.54)	.840	23(22.29)	.151	3(6.17)	-1.276

* -1=change towards oppose 0=no change 1=change towards favour

The standardized residuals in table 6.9.5 suggest that there are substantial deviations from the model with main effects of the context and strength variables only. The cell for respondents in the anti-context group, with not very strong attitudes, high agreement, and who changed their response towards favour, has a standardized residual of 2.13. This is due to the interaction between agreement and strength of attitude that was close to beeing significant.

6.10 Logit analysis of change in attitudes towards declaring the Nordic countries free of nuclear weapons and the effects of context and background variables

Although cross-tabulation of change in attitude towards declaring the Nordic countries free of nuclear weapons, context and background variables did not give much reason to suspect any interactions, logit models were fitted to the attitude variable, context, sex, education, and age. As can be seen in table 6.10.1 the fit of the independence model is remarkably good (χ^2=29.87, df=46, p=.969).

Table 6.10.1 **Goodness-of-fit statistics for change in attitudes towards declaring the Nordic countries free of nuclear weapons with context, sex, education and age as explanatory variables**

Model	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Independence	29.87	46	.969			
Main effects	19.97	36	.986	9.90	10	.449
Two-way interactions	10.56	18	.912	9.41	18	.949

Table 6.10.2 **Significance test for main effects of context, sex education, and age on changes in attitude towards declaring the Nordic countries free of nuclear weapons**

Effect deleted from main effects model in table 6.10.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Context	23.76	38	.966	3.79	2	.150
Sex	24.07	38	.962	4.10	2	.129
Education	19.99	38	.993	0.02	2	.990
Age	21.73	40	.992	1.77	4	.778

Table 6.10.2 shows that the only variables that approached significance were context, and gender. None of the two-way interactions in table 6.10.3 are statistically significant.

Table 6.10.3 **Significance tests for two-way interactions between context, sex, education, and age**

Effect added to main effects model in table 6.10.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Context x Sex	19.88	34	.974	0.09	2	.956
Context x Education	19.86	34	.974	0.11	2	.946
Context x Age	19.57	32	.958	0.40	4	.982
Sex x Education	17.48	34	.991	2.48	2	.289
Sex x Age	17.56	32	.982	2.41	4	.661
Education x Age	16.31	32	.990	3.66	4	.454

Table 6.10.4 **Observed, (expected) frequencies and standardized residuals for the independence model for changes in attitude towards declaring the Nordic countries free of nuclear weapons**

				*Change in attitude towards nuclear weapons in the North**					
Context	Sex	Educ.	Age	-1	Standard. residuals	0	Standard. residuals	1	Standard. residuals
pro	male	comp.	18-30	0(1.20)	-1.097	6(5.69)	.128	1(1.31)	-.267
pro	male	comp.	31-50	1(1.76)	-.573	9(8.33)	.232	2(1.91)	.065
pro	male	comp.	51-70	1(1.32)	-.279	7(6.25)	.301	1(1.43)	-.361
pro	male	m.th.c.	18-30	4(3.81)	.096	14(18.05)	-.953	8(4.14)	1.899
pro	male	m.th.c.	31-50	4(4.25)	-.123	22(20.13)	.417	3(4.62)	-.752
pro	male	m.th.c.	51-70	2(1.91)	.067	8(9.02)	-.341	3(2.07)	.647
pro	female	comp.	18-30	0(2.23)	-1.495	11(10.58)	.425	2(2.42)	-.273
pro	female	comp.	31-50	2(2.20)	-.135	10(10.41)	-.128	3(2.39)	.397
pro	female	comp.	51-70	1(2.05)	-.735	10(9.72)	.090	3(2.23)	.517
pro	female	m.th.c.	18-30	1(2.79)	-1.070	16(13.19)	.774	2(3.02)	-.589
pro	female	m.th.c.	31-50	2(3.37)	-.748	18(15.97)	.509	3(3.66)	-.345
pro	female	m.th.c.	51-70	0(1.89)	-1.375	10(8.95)	.352	1(2.05)	-.734
anti	male	comp.	18-30	4(1.47)	2.092	5(6.94)	-.737	1(1.59)	-.469
anti	male	comp.	31-50	2(1.91)	.068	8(9.02)	-.341	3(2.07)	.647
anti	male	comp.	51-70	3(2.44)	.357	11(11.56)	-.164	0(2.65)	-1.628
anti	male	m.th.c.	18-30	3(3.23)	-.126	14(15.27)	-.326	5(3.50)	.800
anti	male	m.th.c.	31-50	8(5.13)	1.265	23(24.30)	-.263	4(5.57)	-.665
anti	male	m.th.c.	51-70	3(1.76)	.935	5(8.33)	-1.154	4(1.91)	1.512
anti	female	comp.	18-30	2(1.91)	.068	8(9.02)	-.341	3(2.07)	.647
anti	female	comp.	31-50	4(4.40)	-.191	22(20.83)	.257	4(4.77)	-.355
anti	female	comp.	51-70	3(1.61)	1.092	7(7.64)	-.230	1(1.75)	-.567
anti	female	m.th.c.	18-30	1(2.20)	-.809	13(10.41)	.802	1(2.39)	-.898
anti	female	m.th.c.	31-50	4(3.37)	.341	17(15.97)	.259	2(3.66)	-.868
anti	female	m.th.c.	51-70	1(0.44)	.844	1(2.08)	-.750	1(0.48)	.756

* -1=change towards oppose 0=no change 1=change towards favour

Despite the good fit of the model of independence, a few of the standardized residuals in table 6.10.4 are quite large, although only one of them exceeds 1.96. As can be seen in table 6.10.4 there are very few observations in each cell of the table, which leads to the non-significant relation between attitude change and context. Hence, in the next section, only relations between variables that were closest to significance are explored.

6.11 Logit analysis of changes in attitudes towards declaring the Nordic countries free of nuclear weapons, and the effects of context, strength of attitude, and sex

The only background variable that seems to come close to affecting the changes in responses is sex of respondents, and since the only other variables that were found to contribute significantly to these changes were context and strength of attitude, these variables were analysed together.

Table 6.11.1 presents the goodness-of-fit statistics for the three basic models.

Table 6.11.1 **Goodness-of-fit statistics for change in attitudes towards declaring the Nordic countries free of nuclear weapons with context, strength of attitude, and sex as explanatory variables**

Model	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Independence	51.12	14	.000			
Main effects	14.06	8	.080	37.05	6	.000
Two-way interactions	4.49	2	.106	9.57	6	.144

Table 6.11.2 shows that both context and strength of attitude had a significant effect on the changes in attitudes towards declaring the Nordic countries free of nuclear weapons.

Table 6.11.2 **Significance test for main effects of context, strength of attitude, and sex on changes in attitude towards declaring the Nordic countries free of nuclear weapons**

Effect added to the independence model in table 6.11.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Context	43.74	12	.000	7.37	2	.025
Sex	46.17	12	.000	4.94	2	.085
Strength	26.26	12	.010	24.85	2	.000

Table 6.11.3 **Significance tests for two-way interactions between context, sex, and strength of attitude**

Effect added to main effects model in table 6.11.1.	Chi-square	DF	Significance	Conditional chi-square	DF	Significance
Context x Sex	13.75	6	.033	0.31	2	.856
Context x Strength	10.37	6	.110	3.69	2	.158
Sex x Strength	8.60	6	.197	5.46	2	.065

Table 6.11.3 shows that the interaction between sex and strength was significant at the .10 level, but since the three-way interaction between context, sex, and strength of attitude was significant at the .106 level, it is worthwhile looking at the parameters for the saturated model (see table 6.11.4)

Table 6.11.4 **λ-parameters, log-odds, odds, predicted, and actual proportion of respondents 1) changing their response, and 2) who changed their response, change towards oppose, and the effects of context, sex, and strength of attitude**

EFFECT LEVEL	λ-parameters	Log-odds	Odds	Predicted proportion	Observed proportion
Attitude to nukes					
1. Change/(no change)	-.553 *	-1.106	0.331	0.249	0.298
2. Oppose/(favour)	-.010 n.s.	-0.020	0.980	0.495	0.479
Attitude to nukes by context					
1.1. Change - pro	-.048 n.s.	-0.096	0.301	0.231	0.262
1.2. Change - anti	.048 n.s.	0.096	0.364	0.267	0.333
2.1. Oppose - pro	-.280 *	-0.560	0.560	0.359	0.360
2.2. Oppose - anti	.280 *	0.560	1.716	0.632	0.567
Attitude to nukes by sex					
1.1. Change - male	.095 *	0.191	0.401	0.286	0.347
1.2. Change - female	-.095 *	-0.191	0.274	0.215	0.247
2.1. Oppose - male	.063 n.s.	0.125	1.111	0.526	0.500
2.2. Oppose - female	-.063 n.s.	-0.125	0.865	0.464	0.447
Attitude to nukes by strength					
1.1. Change - very strong	-.183 *	-0.366	0.230	0.187	0.209
1.2. Change - not very strong	.183 *	0.366	0.477	0.323	0.426
2.1. Oppose - very strong	.191 n.s.	0.383	1.437	0.590	0.583
2.2. Oppose - not very strong	-.191 n.s.	-0.383	0.669	0.401	0.406
Attitude to nukes by context by sex					
1.1.1. Change - pro - male	.015 n.s.	0.030	0.375	0.273	0.313
1.1.2. Change - pro - female	-.015 n.s.	-0.030	0.241	0.194	0.211
1.2.1. Change - anti - male	-.015 n.s.	-0.030	0.428	0.300	0.377
1.2.2. Change - anti - female	.015 n.s.	0.030	0.310	0.237	0.284
2.1.1. Oppose - pro - male	.050 n.s.	0.100	0.702	0.412	0.400
2.1.2. Oppose - pro - female	-.050 n.s.	-0.100	0.447	0.309	0.300
2.2.1. Oppose - anti - male	-.050 n.s.	-0.100	1.759	0.638	0.575
2.2.2. Oppose - anti - female	.050 n.s.	0.100	1.673	0.626	0.556
Attitude to nukes by context by strength					
1.1.1. Change - pro - v. strong	.047 n.s.	0.094	0.229	0.186	0.205
1.1.2. Change - pro - n.v. str.	-.047 n.s.	-0.094	0.395	0.283	0.362
1.2.1. Change - anti - v. strong	-.047 n.s.	-0.094	0.230	0.187	0.213
1.2.2. Change - anti - n.v. str.	.047 n.s.	0.094	0.577	0.366	0.473
2.1.1. Oppose - pro - v. strong	-.186 n.s.	-0.373	0.566	0.361	0.400
2.1.2. Oppose - pro - n.v. str.	.186 n.s.	0.373	0.555	0.357	0.320
2.2.1. Oppose - anti - v. strong	.186 n.s.	0.373	3.652	0.785	0.783
2.2.2. Oppose - anti - n.v. str.	-.186 n.s.	-0.373	0.806	0.446	0.455

table continued on next page

Table 6.11.4 Continued

EFFECT LEVEL	λ-parameters		Log-odds	Odds	Predicted proportion	Observed proportion
Attitude to nukes by sex by strength						
1.1.1. Change - male - v. str.	-.048	n.s.	-0.097	0.252	0.201	0.219
1.1.2. Change - male - n.v.str.	.048	n.s.	0.097	0.636	0.389	0.530
1.2.1. Change - female - v.str.	.048	n.s.	0.097	0.209	0.173	0.198
1.2.2. Change - female - n.v.s.	-.048	n.s.	-0.097	0.358	0.264	0.316
2.1.1. Opp. - male - v. str.	.175	n.s.	0.349	2.309	0.698	0.692
2.1.2. Opp. - male - n.v.str.	-.175	n.s.	-0.349	0.535	0.348	0.386
2.2.1. Opp. - female - v.str.	-.175	n.s.	-0.349	0.894	0.472	0.455
2.2.2. Opp. - female - n.v.str.	.175	n.s.	0.349	0.837	0.456	0.440
Attitude to nukes by context by sex by strength						
1.1.1.1. Ch.-pro-male-v.str.	-.001	n.s.	-0.002	0.259	0.206	0.213
1.1.1.2. Ch.-pro-male-n.v.st.	.001	n.s.	0.002	0.547	0.353	0.486
1.1.2.1. Ch.-pro-female-v.st.r	.001	n.s.	0.002	0.203	0.169	0.197
1.1.2.2. Ch.-pro-female-n.v.st.	-.001	n.s.	-0.002	0.287	0.223	0.235
1.2.1.1. Ch.-anti-male-v.str.	.001	n.s.	0.002	0.246	0.197	0.224
1.2.1.2. Ch.-anti-male-n.v.str.	-.001	n.s.	-0.002	0.745	0.427	0.563
1.2.2.1. Ch.-anti-female-v.str.	-.001	n.s.	-0.002	0.215	0.177	0.200
1.2.2.2. Ch.-anti-female-n.v.st.	.001	n.s.	0.002	0.447	0.309	0.378
2.1.1.1. Opp-pro-male-v.str.	.233	*	0.465	1.600	0.615	0.615
2.1.1.2. Opp-pro-male-n.v.st.	-.233	*	-0.465	0.308	0.235	0.235
2.1.2.1. Opp-pro-female-v.st.	-.233	*	-0.465	0.200	0.167	0.167
2.1.2.2. Opp-pro-female-n.v.st.	.233	*	0.465	1.000	0.500	0.500
2.2.1.1. Opp-anti-male-v.str.	-.233	*	-0.465	3.333	0.769	0.769
2.2.1.2. Opp-anti-male-n.v.st.	.233	*	0.465	0.929	0.481	0.481
2.2.2.1. Opp-anti-female-v.st.	.233	*	0.465	4.000	0.800	0.800
2.2.2.2. Opp-anti-female-n.v.st	-.233	*	-0.465	0.700	0.412	0.412

* - 95% confidence interval for the parameter does not include 0.
n.s. - 95% confidence interval includes 0.

As the parameters in table 6.11.4 convey, there were two variables that affected how many respondents changed their response to the attitude question. These variables were sex of respondent and strength of the attitude. Male respondents were significantly more likely to change their response, than were women (the observed proportions were 34.7% and 24.7% for men and women, respectively). Respondents with 'very strong' attitudes also showed much greater reliability than respondents with 'not very strong' attitudes. Only 20.9% of respondents with 'very strong' attitudes changed their response, as opposed to 42.6% of respondents who reported having 'not very strong' attitudes. The context did not affect reliability, i.e., although

more respondents changed their response under the anti-context condition, this result was not significant.

The interaction between context, sex and strength of the attitude did not affect the reliability, but did affect what the change in the reported attitude was, given that there was a change. The predictions clearly held for women with 'very strong' attitudes; only 16.7% changed their response towards oppose in the pro-context group, and 80% in the anti-context group. The women respondents who did not have a very strong attitude towards declaring the Nordic countries free of nuclear weapons seemed to show a backfire effect, that is 50% of those who changed in the pro-context group, changed towards oppose. The comparable figure for the anti-context group was only 41%. The majority of male respondents with 'very strong' attitudes changed their attitude towards oppose, whether they were in the pro-context or the anti-context group. That is, 61.5% changed their response towards oppose in the pro-context condition, and 76.9% in the anti-context condition. The majority of the male respondents with 'not very strong' attitudes, on the other hand changed their response towards favour. Only 23.5% changed towards oppose in the pro-context, and 48.1% in the anti-context group.

How these differences can be explained is not very clear, although a few explanations may be straightforward. Looking at the proportions for those who changed their response for the combined levels of context, sex, and strength of attitude reveals that in all cases respondents with 'not very strong' attitudes were much more likely to change their response, and since these changes deviated quite a lot from the predictions, it seems likely that there were random variations among respondents with 'not very strong' attitudes. A plausible explanation for the 'backfire' effect among women with 'not very strong' attitudes in the pro-condition is that they were already very much in favour of declaring the Nordic countries free of nuclear weapons, and thus did not have much scope to change in the direction of

favour (i.e., a ceiling effect). Only 23.5% of these respondents changed their response, which is a much lower proportion than for other respondents with not very strong attitudes, ranging from 37.8% to 56.3% for the other groups. The one finding that has no obvious explanation is why the male respondents with 'very strong' attitudes who changed their response in the pro-context condition were more likely to change their response towards oppose than favour (since the number of respondents is very small further analysis is not promising).

6.11 Summary of effects of context on attitudes towards declaring the Nordic countries free of nuclear weapons

Over 80% of all respondents expressed a favourable attitude towards declaring the Nordic countries free of nuclear weapons. This narrow distribution of responses made it impossible to analyse the data in the same way as the data from the experiment on attitudes towards abortion, i.e., favour vs. oppose. The approach selected was to analyse changes in reported attitude between waves. Base-rate data on attitudes were selected in Wave 2 and the experiment on the effects of context upon the attitude was in Wave 3.

The analysis showed that:

- Overall there was found to be a consistency or assimilation effect of the context items, i.e., respondents in the pro-attitudinal condition were more likely to give a more favourable response than they did when the base rate data were collected, and respondents in the anti-attitudinal condition were found to give a more unfavourable response. Approximately two thirds of the changed responses were in the predicted direction.
- Agreement or disagreement with the attitudinal assertions was not found to condition the effects of the context (although approaching significance).

- Strength of attitude was found to affect reliability in such a way that respondents with very strong attitudes showed greater stability than respondents with not very strong attitudes (20.9% of respondents with very strong attitudes and 42.6% of respondents with not very strong attitudes changed their response).
- Strength of attitude was not found to condition the effect of the context, despite the fact that the very strong attitudes were more stable.
- Women who did not have a very strong attitude showed a backfire effect.

6.12 Conclusion

The most apparent conclusion from the above analysis is that it is not an easy task to identify the 'floaters'. The context does not have such a strong effect as to make respondents change their attitudes from one side to the other in any great numbers, neither for attitudes towards abortion nor for attitudes towards declaring the Nordic countries free of nuclear weapons.

Both in the case of attitudes towards abortion and attitudes towards declaring the Nordic countries free of nuclear weapons did strength of the attitude affect reliability in such a way that respondents with very strong attitudes were less likely to change their response. This does not necessarily mean that respondents with 'not very strong' attitudes were more susceptible to the context, and, indeed the pattern of the changes among these respondents suggests that these changes may to a large extent be explained by random variations.

7

Conclusion and discussion

7.1 Overview

The research described in this thesis was sparked off by my interest in methodology and questions concerning the reliability of survey responses. A great deal of research published in the early 1980s showed that order of questions and different question formats produced substantially different response patterns that were not easily explained (cf. Schuman and Presser, 1981). Although answers had been known to be somewhat sensitive to question wording and to the order of questions since the early 20th century (Cantril, 1944; Payne, 1951) emphasis was generally laid on rigorous standardization and attempts were made to circumvent or eliminate these effects in order to establish acceptable reliability. However, in the 1980s explanations were called for and researchers from different disciplines joined hands in searching for plausible clarification. Most notable was the collaboration between survey researchers and cognitive psychologists attempting to map the cognitive steps involved in the question answering process (cf. Jabine, Straf, Tanur and Torangeau, 1984; Hippler, Schwarz and Sudman, 1987). This co-operation has produced various models attempting to explain how preceding questions or response alternatives sometimes do and sometimes do not influence responses. One is the 'model of inclusion/exclusion and the emergence of assimilation and contrast effects' proposed by Schwarz and Bless (1992), a model somewhat reminiscent of Sherif and Hovland's (1961) assimilation-contrast theory of attitude change. Although there are some similarities in these two models there are also some very important distinctions. The most distinct difference may be Schwarz and Bless's (1992) emphasis on the cognitive steps involved in the information processing and their

limited recognition of the importance of ego-involvement. Furthermore, the emotional aspect of attitudes has been somewhat neglected in the cognitive approach.

What has social psychology to say about context effects? Researchers studying unanticipated effects in experimental research found that various 'artifacts' such as demand characteristics and experimenter effects were operating in the laboratory (cf. Orne, 1962, 1969; Rosenthal, 1966). Farr (1978) argued that such effects could only be considered as artifactual 'if what are inherently social relations, such as those that exist between experimenters and the subjects who participate in their research, are construed by psychologists as being in fact relations of a *non-social* kind (because in that situation experimenters *think* of themselves as guided by a natural scientific model of experimentation), [and] then it is scarcely surprising if unforseen side-effects, artifacts, of a social nature emerge; only experimenters, conceptualizing the situation as non-social when it is in fact social, will be surprised' (p. 300). This debate has drawn attention to the social nature of the interview situation and the characteristics of language. These aspects of the interview situation have been neglected, largely because of the emphasis on standardization and the application of the purely natural science model, without acknowledgement of the reactivity of human behaviour (cf. Duval and Wicklund, 1972).

A number of researchers have suggested that by the simple act of asking questions we change people's self-perception (cf. Bishop, 1987), their attitude or even their behaviour (cf. Feldman and Lynch, 1988, Feldman, 1992). If so, how permanent is that change? Accessibility has often been called upon as an explanation for these changes (Fazio, 1989). However, these changes in attitudes due to increased accessibility of particular beliefs or aspects of an attitude are generally assumed to be temporary and to wear off over time. Although the claim is frequently made that

attitudes and behaviours are being changed in the process of asking questions, it is rare to find studies that interview the same respondents on more than one occasion.

The experimental design applied in the present research was devised with these questions in mind, i.e., do we change people's attitudes and self-perceptions by asking them questions? If so, how temporary or long-lasting are these changes? Is it possible to interpret context effects as artifactual or can they be explained with reference to the social nature of the interview situation? Can theories about the nature of attitudes explain some of the instability frequently observed in attitudinal responses?

Conducting a large scale sample survey is an expensive endeavour. However, a friend of mine, Gudmundur Runar Arnason, who was working on a PhD in political science at the London School of Economics was also interested in using survey data in his research. Hence we decided to pool our funds (that is, if we would be able to get funding), and work together. Gudmundur was interested in studying the effects of media communications in the campaign leading up to the general elections in Iceland that were held in April 1987. Being more interested in the effects of different question orders and formats than in the actual contents of the questions, I selected questions that had similar content for the remaining questions in the questionnaire (see appendices) and decided to make an attempt to replicate Bishop's (1986) findings, that presenting respondents with knowledge questions before asking them about their interest in politics, or more accurately how frequently they followed what was going on in government and public affairs resulted in a decline in reported interest. Furthermore, I chose to conduct an experiment somewhat reminiscent of Schuman and Presser's (1981) experiment with open and closed formats of the question about the most important problems facing the nation, but different from their experiment in that instead of introducing closed response alternatives, I gave examples of possible issues in the preamble to the question. The effects of these

variations in the questionnaire were tried in a small pilot survey on a simple random sample of 200 people in Reykjavik in December 1986. The results from the pilot study were promising in the sense that predictions about context effects were confirmed. However, these questions, not being attitude questions in the traditional sense, i.e., not questions about 'a subjective experience involving an evaluation of something or somebody' (Eiser, 1986, p. 13), but rather concerning behaviour or self-perception and beliefs, these experiments did not provide me with the data necessary to say something about context effects on attitude questions and the nature of attitudes. Hence, two additional experiments were designed for the main study. These experiments were inspired by experiments carried out by Tourangeau and Rasinski (1986). The two target questions asked about people's attitudes towards abortion on demand and about people's attitudes towards declaring the Nordic countries free of nuclear weapons. Immediately before the target questions, people were presented with attitudinal assertions and asked about their agreement or disagreement with these items. The attitudinal assertions were intended to make particular issues salient, either reflecting a positive or negative view of the issues asked about in the target questions.

In this thesis three different types of context effects have been explored: 1) conditional context effects, i.e., effects presumed to be dependent on the way in which previous questions are answered (knowledge questions and interest in politics); 2) context effects unrelated to the substance of previous questions, but related to the content of the target question (the most important problems facing the nation); 3) unconditional context effects, presumed to be related to the content of the prior questions but not to the way in which these questions are answered (attitudinal assertions and attitudes towards abortion and nuclear weapons). The effects were tested in split-ballot experiments that were conducted within a three-wave panel survey. A simple random sample of 1500 people in Iceland was interviewed by telephone. Finally, as an attempt to gain insight into people's thought processes

while answering survey questions and in general as an aid to interpret the results, two of the experiments were also included in so called think-aloud interviews (cf. Ericsson and Simon, 1980; 1984). Seventeen social science students at the University of Iceland were asked to think aloud while answering the questions.

It is argued that the changes in responses due to context or question order do not occur through a change in people's attitudes or self-perceptions, but rather by shifting the meaning of the questions (either by narrowing or widening the frame of reference or by providing respondents with additional information about the intended meaning of the questions). This, it is argued, is due to respondents relying on tacit rules that govern the conduct of conversation (cf. Grice, 1975), leading them to using various cues in the questionnaire to interpret the intended or the pragmatic meaning of the questions (see Sudman, Bradburn and Schwarz, 1995). Furthermore it is argued that people's attitudes and beliefs about issues they have not given much thought are generally subject to fluctuations and should not be expected to remain stable from one time to another. Although attitude or opinion measurement in surveys has generally relied on single items implying, that the attitude can be measured on a single dimension, inspection of attitude theories suggests that this is an oversimplification and generally speaking one would not, according to these theories, expect people to possess attitudes of such accuracy.

The term attitude is used in a very broad sense in the survey literature and a tentative classification of these terms into four different levels according to expected stability is suggested. According to this model one would expect attitudes at different levels to differ substantially, both in reliability of attitudinal responses and in susceptibility to context effects ***if*** context effects can be argued to be the result of a change in people's attitude. Hence, it is important to focus on finding a way to separate random fluctuations due to low reliability from systematic changes in response to a particular context.

Level 1 – Random changes or consistency – instability

At the first level one would not expect people to have a well-formed attitude. This level includes such terms as Converse's (1970) non-attitudes, i.e., people are constrained to generate their belief, opinion or attitude on the spot when asked a question about a particular issue. Since people do not have a predefined attitude their response is likely to be highly influenced by external cues such as the context in the questionnaires that may make particular thoughts or aspects of the issue more accessible than others. At this level one would expect substantial random and systematic (consistency effects) changes in people's responses to an attitude question.

Level 2 – Consistency – instability

The second level includes attitudes that are distal (such as Abelsons's [1986] distal beliefs) or peripheral, i.e., attitudes towards issues or figures that are not of high personal importance to the respondent. However, (s)he may have certain beliefs or feelings towards the attitude object although not necessarily grounded in personal experience. Attitudes or attitudinal responses at this level may be subject to what Petty and Cacioppo (1986b) call a peripheral change in attitudes, i.e., various external influences are likely to affect the attitude but the effect is not expected to be permanent, leading to an instability in measurements. Increased accessibility, for example due to specific items or context in a questionnaire that direct respondents' thoughts towards specific aspects or attributes of the issue in question, should lead to a consistency effect since people do not invest cognitive effort in thinking about the contents of the message or the previous questions in this case, i.e., people are likely to include the message in their thinking, hence a consistency effect.

Level 3 – Backfire or consistency depending on agreement – permanent change

At the third level a person is expected to have a relatively well formed attitude (a basal or a central attitude) towards the attitude object, usually grounded in personal experience. Attitude changes at this level would be likely to depend on factors such as the contents or the cogency of the message at hand. The change in such an attitude would be expected to be relatively permanent and effects are likely to be either in the direction of consistency or contrast, depending on the contents of the message (Petty and Cacioppo, 1986b; see also Sherif and Hovland, 1961; and Schwarz and Bless, 1992 for discussion of inclusion – exclusion theories).

Level 4 – No change or contrast – stability

At the fourth level, one would find emotional attitudes, categorical attitudes, values, or ideologies. Due to the broadly organised sets of attitudes and beliefs at this level one would expect high stability in attitudinal responses. Arguments for or against an attitude or a belief are generally found to be ineffective, but if they do not accord with the respondents' view they are likely to lead to a contrast effect. Latané and Nowak (1994) have suggested that very strongly held attitudes may have a different distribution from weaker attitudes. That is, they argue that the distribution of very strong attitudes or attitudes to highly involving issues becomes bimodal, which according to their argumentaion makes these attitudes stable and highly resistant to change. Hence, an attitude change becomes catastrophic, i.e., as consistent evidence piles up, a person may abandon her/his attitudinal position altogether and adhere to the completely opposite view of the issue in question.

Since the above model or classification did not inform the design of the study, it cannot be argued that the experiments are a systematic test of the hypotheses presented therein. However, the questions in the experiments dealt with issues that were likely to vary substantially in perceived importance. Hence, this classification may facilitate the interpretation of the research findings.

People are unlikely to have strong convictions about such issues as how often they follow what is going on in government and public affairs or about which issues are of greatest importance to the nation at any one time. However, they are more likely to hold strong convictions about issues such as abortions and nuclear weapons. Hence one would expect greater stability and lesser susceptibility to context items in responses to these questions than the two previously mentioned.

The experiments described in this thesis were intended to evoke different kinds of context effects but they also involved different types of contexts: 1) neutral context (the most important issues); 2) neutral context with the addition of self-presentation (knowledge questions and political interest); 3) normative context (favourable or unfavourable attitude assertions).

7.2 Summary of results in experiment on knowledge questions and political interest

Bishop (1987) suggested that merely by asking people about their political knowledge before asking them how closely or how often they follow what is going on in government and public affairs will lead to a change in their self-perceptions. In the present study a third of the sample was asked two difficult knowledge questions (who is the Speaker of the plenary session of both houses of Parliament and which minister is responsible for the Statistical Bureau) before being asked how often they followed what was going on in government and public affairs, a third was asked the target question before the knowledge question, and the final third of the sample acted as a control group and was only asked the question about how often they followed what was going on. In the second wave all respondents were asked the target question but no questions about political knowledge. Results from the experiment are consistent with Bishop's findings (1986). Preceding the target question with the

two knowledge questions reduced the likelihood of respondents saying 'most of the time' by 10%. The size of the effect, although not specifically predicted, was found to be greater for men than for women (13.7% and 7.6%, respectively): Also, the younger the respondents, the greater this effect was found to be. Finally, an interaction was found between the order of the questions and education, which is consistent with previous evidence that response-order effects are greater among respondents with less education (cf. Cochrane and Rokeach, 1970; Krosnick and Alwin, 1987; McClendon, 1986; Schuman and Presser, 1981). The likelihood of respondents with compulsory education saying they followed what was going on most of the time was reduced by nearly 18% by the presentation of the knowledge questions.

It is argued that because respondents appear to be affected by the knowledge questions regardless of whether they did or did not know the answers, it is not a plausible explanation that their self-perception has been changed. According to Bem's (1972) self-perception theory a person infers from her or his behaviour what her/his attitude or opinion might be. The fact that giving the correct answer to both of the knowledge questions reduced, rather than increased the likelihood of respondents' saying they follow what is going on in government and public affairs most of the time explicitly contradicted Bem's theory. Thus, this explanation was rejected. Furthermore, changes in reported interest between Wave 1 and Wave 2 of the study were found to be different depending on the experimental condition in Wave 1. The most positive changes in reported political interest (following what is going on...) were found among respondents who were presented with the knowledge questions before the target question in Wave 1 and the most negative changes were found in the responses of the subjects who were asked the knowledge questions after the target question in Wave 1. Hence, the context seems to have been carried over from Wave 1 to 2 despite the fact that the interviews were separated by a time period of between two and three weeks, that is the presentations of the knowledge questions

after the interest quesiton in study 1 reduced the likelihood of respondents saying they followed what was going on 'most of the time' in study 2. A negative change was also found in the control group, but despite that, there was a statistically significant difference in reported political interest in the control group on the one hand and the two experimental groups on the other. The size of the effect, however, was substantially smaller in Wave 2 than in Wave 1, being 7.4% in the condition where the knowledge questions were placed after the target question and 5.5% for the other experimental condition. This clearly demonstrates that it is not necessarily the most recent experience related to political knowledge or exposure that determines how people will answer a question about how well they follow what is going on, but rather the perceived relevance of the particular piece of information that comes to mind.

Following Ericsson and Simon's (1980; 1984) research on 'think-aloud' protocols as a method for discovering the cognitive stages involved in solving a problem, seventeen undergraduate students at the University of Iceland were asked to think aloud while answering the question about political interest (and attitudes towards abortion and towards declaring the Nordic countries free of nuclear weapons). Analysis of the think aloud protocols lends support to the hypothesis that the context effect is due to a reinterpretation of what it means to follow what is going on in government and public affairs most of the time. It is argued that due to the social nature of the interview situation and the nature of language, respondents try to infer how the researcher intends the question to be understood. The obvious relation between the knowledge questions and the target question provided a clue to the interpretation of the question, the most apparent one being that somebody who really follows what is going on in politics should know the name of the Speaker of the plenary session of both houses of Parliament and which minister is responsible for the Statistical Bureau. Thus it is argued that the inclusion of the knowledge questions

changed or defined the meaning of the question about how well people follow what is going on in government and public affairs.

7.3 Summary of experiments on the most important problems facing the nation

The second experiment, an experiment on question wording, was conducted to test the effects of including examples for clarification in the preamble to a question asking which issues of national importance respondents were the most concerned about. Although this experiment is in many respects reminiscent of Schuman and Presser's experiment on open and closed question formats, it was inspired by my colleague's interest in the 1987 election campaign in Iceland. His particular interests were in agenda setting theory and the effects that media coverage of particular issues might have on people's perceptions of which issues were of greatest importance to the nation. (Arnason, 1991).

Results from the pilot study, where only specific issues (e.g. privatization of the City Hospital) were used as cues showed that respondents that were not prompted with examples gave very different answers to the question about which issues were the most important. This suggested that introducing the specific examples into the preamble to the question changed people's understanding of what kind of issues might be considered nationally important. Hence, it was decided to include three different versions of the question in the main study, i.e., in the control group the open-ended question was presented without any examples of issues, and in the experimental conditions specific (such as declaring the Nordic countries free of nuclear weapons) or general examples (such as inflation and unemployment) were provided in the preamble to the question.

It was hypothesised that two rival theses might explain the effect of such a change in wording. The first one suggests that the inclusion of examples leads to a different interpretation of the meaning of the question, i.e., that a meaning shift takes place, due to the narrowing or the widening of the frame of reference. The second possible explanation suggested was the operation of an acquiescence effect, i.e., respondents simply assent to the examples as the most important issues.

More than 70% of respondents that were prompted said one of the prompts or the suggested problems was the issue of national importance they were most concerned about. Type of prompting was found to affect responses in such a way that respondents prompted with the specific examples were found to be less likely to say that they had no opinion on which issues were the most important in Wave 1. They were not, however, more likely to 'borrow' the prompts than respondents who got the general examples. In Wave 2, a modest residue of the effect of prompting in Wave 1 could still be detected but the size of the effect was very small, only around 4%. The main difference between the two groups that were prompted was that the respondents prompted with the specific examples were more likely to proclaim issues other than the prompts the most important ones. In the third and final wave, when respondents were asked what they believed to have been the most important issue of national importance in the election campaign, the respondents who had been prompted in the first wave were found to be no more likely than the control group to mention the examples that had been given. However, the pattern of responses in all waves was to a certain extent found to depend on the type of prompting in Wave 1. Respondents not interested in politics were more likely to have an opinion if prompted with the specific rather than the general issues. In Wave 1 this certainly seemed to have been caused by their assenting to the examples as the most important issues. In Waves 2 and 3 on the other hand, these respondents were more likely to state issues other than the prompts as the most important.

Type of prompting was not found to affect the proportion of non-response in any wave among respondents who were interested in politics (although a tendency can be seen in Wave 1 towards a higher non-response among respondents prompted with the general examples). In all three waves, respondents interested in politics presented with the specific examples were more likely to mention issues other than they were prompted with as the issues of national importance they were most concerned about. These results, along with the minimal differences found between the group prompted with the general examples and the group not prompted at all, strongly suggests that the specific examples had an effect on the interpretation of the question, widening the frame of reference. The differences that were found between the control group and the group receiving the general examples were such that a non-response was more frequent in the prompted group. It was argued that this effect might be caused by a narrower frame of reference, i.e., the examples might imply that the question was only asking about hard-core political or economic issues. Thus the open-ended question did not seem to capture what was intended, i.e., issues of a much greater variety and specificity than inflation, exports, unemployment etc.

7.4 Summary of experiments on effects of context on attitudes toward abortion and declaring the Nordic countries free of nuclear weapons

The third experiment was designed to test whether it was possible to direct people's thoughts towards specific aspects of an attitude issue and thereby influence their response to general attitude questions by preceding the questions with items of a normative nature, which implied either a favourable or an unfavourable view of the issue in question. The data for these experiments were collected in all three waves of the survey. In the first wave people were asked about their attitude towards abortion on demand, how strongly they felt about the issue and how ambivalent their thoughts were. In the second wave comparable questions were asked, but this time about

attitudes towards declaring the Nordic countries free of nuclear weapons. The data collected in the first two waves served as base-rate data and a measure of expected resistance to change, since it was hypothesised that people who feel strongly about an issue and do not have ambivalent feelings towards it are less likely to change their attitudinal response as a result of increased accessibility of certain ideas. The main experiments took place in the third wave. Half of the sample was asked about their attitudes towards abortion and the other half about attitudes towards declaring the Nordic countries free of nuclear weapons. The attitude questions were preceded with two attitudinal assertions conveying either a favourable or an unfavourable view of the issue in question.

Basic analysis of the results did not give much reason for concern. The context items seemed to have had very little effect on responses to the target questions, the questions about attitudes towards abortion and towards declaring the Nordic countries free of nuclear weapons. Detailed analysis revealed that this impression was misleading. It was found that due to different kinds of effects in operation, in some cases a consistency or an assimilation effect and in other cases a contrast or a backfire effect, these effects cancelled out in the overall sample.

Both experiments showed that, the stronger the attitude the greater was its stability. However respondents that expressed an unfavourable attitude towards abortion in the first interview were unlikely to change their answer in response to the different context whether they claimed to have a very strong attitude or not (the size of the effect being 2.5% for respondents with a very strong attitude and 1.5% for not very strong). A very considerable effect of 23.9% (i.e., 87.8% of respondents in the pro-attitude condition said they favoured abortion on demand vs. 63.9% in the anti-abortion condition) was found for respondents expressing a favourable and not very strong attitude in the initial interview. A backfire effect (-9.6%) was found for respondents with a very strong favourable base-rate attitude, which lends support to

the hypothesis expressed in the model that a change in a very strong attitude is likely to be in the direction of contrast.

The context effect was much greater for men than women. The size of the effect was nearly 22% for males with compulsory education only, 16% for men who had completed further education and 6.1% for women with further education, in all cases a consistency effect. A backfire effect of 14.9% was found for women with compulsory education only. It was suggested that this might be due to their greater emotional involvement in the issue.

Disagreement with the context items about women's rights and traditional values led to a contrast or a backfire effect, i.e., the view expressed by the respondents was moved further away from the view expressed by the attitudinal assertions, although it may be argued to have been consistent with the way in which respondents reacted to the assertions or the context items. Hence, the findings suggest that the context effect in this experiment can not be said to be fully unconditional although disagreement with the context items leading up to the question about declaring the Nordic countries free of nuclear weapons did not seem to result in a contrast effect.

More than 80% of respondents were in favour of declaring the Nordic countries free of nuclear weapons. Hence analysis was not focussed on whether responses changed from oppose to favour or vice versa, but rather on whether changes between waves were positive or negative (i.e., whether responses to the target question were more favourable or more unfavourable than responses to the base rate question). Strength of attitude was found to have a highly significant effect on reliability. Very strong attitudes showed a much higher degree of stability: 20.9% of respondents with very strong attitudes changed their response as compared with 42.6% of respondents with not very strong attitudes. It is argued that a large proportion of these changes can be attributed to random fluctuations in the attitude rather than to the context. Despite

the greater stability in very strong attitudes there was not a significant interaction between context and attitude strength, implying that the context affects very strong and not very strong attitudes in similar ways. Overall the context effect was one of consistency with almost two-thirds of all changes in responses in the predicted direction.

There was not a strong indication of respondents' reinterpreting or comprehending the attitude questions about abortions and nuclear weapons in different ways depending on the context within which they were asked. However, analysis of think-aloud protocols showed that the context directed people's thoughts towards different aspects of the issue. This may undoubtedly be argued to be an effect of increased accessibility, but it also highlights the vagueness of such general questions and the limited cognitive capacity of the human brain. We can never process all our beliefs about an issue and come to a completely accurate, rational, consistent conclusion or response. Hence there is bound to be substantial instability in responses to such general questions that must draw on the context of the communication. This does not necessarily have to be a drawback, but stresses the need for careful questionnaire construction and interpretations of results, not to mention the importance of respecting the 'rules of the communication game' (Schwarz, 1994).

7.5 Conclusion and discussion

According to the classification of attitudes proposed in this thesis one would postulate that as we move up the attitudinal levels (i.e., from non-attitudes to values) we observe greater stability of attitudinal responses, not only in terms of reliability but also a diminished susceptibility to context effects. However, while the results presented here suggest that attitudes at different levels vary in stability, they suggest that the difference is mainly one of a difference in random variation rather than

varying susceptibility to context (although the evidence may be somewhat mixed). This confirms the finding of Krosnick and Abelson (1992) who claim to have disconfirmed the widely held hypothesis that context effects in survey measurements are greater in the case of weaker attitudes.

These results raise a number of questions about the nature of both attitudes and context effects. They suggest that context effects in survey measurements are not caused by changes in attitudes but lend greater support to Schwarz's et al.'s (1998) contention that context has the observed effect because of the operation of tacit rules that govern conversation, i.e., these findings indicate 'that respondents pay close attention to the question asked, treating the specifics of the wording and the response alternatives offered as relevant contributions to the ongoing conversation. ..... this is, indeed what they are entitled to on the basis of the tacit norms that govern the conduct of conversation. Moreover, respondents draw on these specifics in their efforts to infer the meaning intended by the questioner, much as the tacit rules of conversational conduct would want them to. Hence, the apparent artifacts of question wording are likely to reflect regularities of normal conversational conduct, except that we as researchers often fail to take these regularities into account in writing questions and interpreting answers' (p. 160).

According to Zaller and Feldman (1992) there are basically three different ways to explain context effects and the lack of stability in survey responses. These are 1) non-attitudes, 2) measurement error; and 3) generation idea (people don't hold attitudes or beliefs at the specificity required in surveys). The review of the attitude literature in chapter 1 certainly seems to agree with the generation hypothesis in that one should expect substantial instability in attitude measurement, not because of error in measurement, but also because people do not possess attitudes of such accuracy that they can be restricted to one point on an attitude scale. There always occur some natural fluctuations, especially when talking about general attitudes.

However, I would like to argue that these three explanations are all relevant and each can account for some part of the results reported in this thesis. However, these explanations are not sufficient. As discussed above the fourth and the fifth explanations have to be added 4) vagueness of language; and 5) reactivity or the conversational characteristics of the survey interview situation.

It had been expected that the effects of knowledge questions on answers to how well people follow what is going on in government and public affairs were conditional context effects. However, the effect found reduced the likelihood of respondents saying they followed what was going on most of the time, almost regardless of how they answered (although the size of the effect depended on the way in which the knowledge questions were answered), and hence cannot be argued to be truly a conditional context effect. The same is true for the effect of pro- and anti-attitudinal assertions on attitudes towards abortion and declaring the Nordic countries free of nuclear weapons, assumed to be an unconditional effect, the effect turned out to be at least partially dependent on the way in which respondents answered the context items.

It has been shown that it is more the perceived relevance of a particular piece of information that determines its accessibility than the recency with which it has been processed. What is it that determines what is considered relevant in a survey interview? What is it that becomes accessible in the interview? According to McGuire's syllogistic reasoning and traditional consistency theories (McGuire, 1960; Bem, 1967; Festinger, 1957) it should be the response to the knowledge questions, or in the case of the attitudes, the responses to the agree/disagree items. However, if one assumes that a meaning shift takes place, one has to add another dimension, i.e., the social interaction of the interview and the reactivity of the situation. The respondent not only looks for a logical relation between the questions as they appear, but also thinks about the motives of the researcher. According to

results from the analysis of think aloud protocols, respondents believed that the researcher expected to find consonance between responses to the knowledge questions and the question about how frequently people follow what is going on in government and public affairs. On the other hand, they did not seem to be as conscious of the relation between the attitudinal assertions and the general attitude question towards abortion, although the different kinds of assertions (moralising or concerning women's rights) obviously evoked different thoughts that presumably led to the difference in responses.

Not only do respondents try to understand the semantic or the literal meaning of the words in the question but also the intended or the pragmatic meaning. Although the wording of the questions may seem clear and straightforward, there is ample room for re-interpretation. What does it mean to follow what is going on in government and public affairs most of the time? Which issues are of national importance (what kinds of issues are we talking about)? What do we mean when we say we favour abortion on demand? Does that mean unconditional support for abortions? What does it mean when we say that we are very much in favour of declaring the Nordic countries free of nuclear weapons? Does it mean that we are in favour of such a declaration whatever the consequences? The answer to these questions is negative. The question or the subject of interest is often ill-defined and open to interpretation, making it important for the respondent to try to determine what exactly the researcher or the questioner means by her/his question. It may be both the preceding questions and the target question's wording that provides respondents with a kind of clarification of what it is the researcher means. In many cases, this can be a clarification that has escaped the researcher's attention, as indeed was true of the effects of prompting with general and specific examples in the question about the issues of national importance respondents were most concerned about. Accessibility could possibly explain why people chose to select one of the prompts as an answer to the question about which issues of national importance they were most concerned

about. However, increased accessibility does not provide an explanation for the different effects of prompting with general and specific issues. It seems much more plausible that a meaning shift took place. The nature of the prompts had an effect on how respondents interpreted the question itself. How can we assess which issues can be considered nationally important? Are high crime rates in New York and Atlanta of great importance to the whole of the USA? Is it of national importance to people in Iceland that the Nordic countries are declared free of nuclear weapons (despite the fact that there are no nuclear weapons in Iceland)? The answer to these questions might be a 'yes' and it might be a 'no'. It all depends on people's definition of national importance. The examples or prompts given in the question give the respondent a clue as to the researcher's understanding of what can be considered to be of national importance.

But can it then be argued that all context effects can be attributed to vagueness in question wording or characteristics of communication? Schuman and Presser (1981) argue that the effect found in responses to questions on whether American reporters should be allowed into Russia to report events happening there and whether Russian reporters should be allowed into the USA can not be attributed to vagueness in the question wording, but has to be explained by a norm of even-handedness. To a certain extent, this may be true. But there may also be some vagueness in the wording that is not obvious at first sight. The questions came one after the other. Americans who first answered the question about the American reporters may have thought that of course they should be allowed to go to Russia. But the question did not involve any conditions, nor did it say that there were no conditions attached, and this indeed created the vagueness of the question. Following this question with the question about whether Russian reporters should be allowed into America may well have carried the meaning that the researcher meant that American reporters should be let into Russia on the condition that Russians be let into America. Hence, I do believe that this question is indeed vague. Generally, if an interviewer asks a

respondent a question of this kind, for example if s(he) thinks her/his country should join the EC, respondents often volunteer a number of prerequisites: 'it depends on what you get and what you have to give in return', and presumably the same applies to the questions about the reporters.

7.6 Implications for survey results

The importance of studying context effects in surveys was highlighted in chapter 1. First of all, surveys are ostensibly used to monitor changes in public opinion where changes of about 5-10% have been regarded as 'true' changes in public opinion. The results here and from various other studies described above show that caution is necessary in such interpretations when shifts caused by context can reach 25% or even higher (although the size of such effects is most often in the area of 10%). Secondly, the results emphasize the importance of care when making generalisations about public opinion from any one question. Evidently, it is very important to pay close attention to the context within which the question was asked. Thirdly, some groups are affected while others are not, and adding still further to the confusion, some groups may show a contrast effect while other groups show an assimilation effect. This, of course, constrains the possibilities for making generalisations, but it also signifies the need for careful sampling.

The findings presented here confirm the existence of context effects in surveys and show that respondents do indeed strive to understand the intended meaning, not only in individual questions, but furthermore that they try to understand the logical relation between different questions in the survey questionnaire. Consequently, it is important for survey researchers and other researchers relying on information from survey research to accept that answers to particular questions can shift, not only as a result of different wordings, but also due to different contexts. Therefore, it is

essential to try to understand how this may happen and particularly to pay attention to the tacit assumptions that are believed to govern any conversation. Finally, the findings stress the need for being cautious in drawing conclusions and inferences from survey research. The more ambiguous the question, the more pronounced is the effect of the context. As Schwarz, Groves, and Sudman (1998) claim: 'Question comprehension is not primarily an issue of understanding the literal meaning of an utterance. Rather, question comprehension involves extensive inferences about the speaker's intentions to determine the pragmatic meaning of the question. To make these inferences, respondents draw on the nature of preceding questions as well as the response alternatives. Accordingly, survey methodologists' traditional focus on using the "right words" in questionnaire construction needs to be complemented by a consideration of the conversational processes involved in the question-answering process' (p. 152).

7.7 Limitations of the present study and further research

Not all respondents are affected by the context and some people are more likely than others to reinterpret the questions according to what they believe the researcher has in mind (demand characteristics). What are the variables that mediate the effects? Are they consistent from one experiment to the next? Is the inclusion/exclusion model capable of predicting when the information provided by the context or the wording of the question is used, or is it always a post hoc explanation? All of these questions remain to be answered and all of them deserve attention.

It was never the purpose of this study to generate a theory of attitudes nor a testing of existing theories. However, the results and the process of the experiments have drawn my attention to the need for studying the nature of attitudes, attitude change and the expression of attitudes through language in a much more comprehensive

manner than has been done hitherto. In particular, questions about the role of such variables as strength of attitude, knowledgeability, ego involvement, etc., in stabilizing attitudinal responses are of utmost importance.

The classification of attitudes underlines the necessity of testing the reliability of differrent attitude domains. When can attitudes be argued to be 'non-attitudes', when are they peripheral, central or categorical? What are the discriminatory variables? Are they cognitive variables such as knowledgeability, 'prior thinking about', or are they emotional variables such as ego involvement and affect? In order to test this it is important to select attitudes towards issues that are of real relevance to people.

The present research leaves one with many unanswered questions regarding the effects of previous questions on responses to related questions that follow. For example, the two knowledge questions in the first experiment seemed to have different effects on responses. The question asking about the Speaker of the plenary session of both houses of Parliament seemed to have an effect consistent with what had been hypothesised, i.e., to have a conditional context effect. The second knowledge question, asking which minister was responsible for the Statistical Bureau, appeared to have a different kind of effect, i.e., an unconditional context effect. However the data do not allow testing whether this was due to the questions' position in the questionnaire or whether they, for some other reason such as different levels of difficulty had different effects. This question might be worth pursuing in a further study.

The homogeneity of respondents in the think aloud experiments made it impossible to substantiate the claim made by Tourangeau that a contrast effect is caused by people counter-arguing as they answer the attitude question. All of the respondents in the interviews agreed with the pro-abortion context items and disagreed with the anti-abortion items.

As pointed out above, the design of the present study was not informed by the suggested model or classification of attitudes, and was carried out prior to some significant developments reported here. Hence, although the model helps in interpreting the findings, the data do not allow systematic testing of attitude reliability and susceptibility at different levels.

Disentangling the meaning of the various concepts used to describe the strength of an attitude and the processes by which an attitude becomes strong is of utmost importance to obtain a comprehensive theory of the effects that attitude-strength variables have been shown to have on attitude selectivity, change and resistance to change. Krosnick et al. (1993) and Prislin (1996) have examined various strength-related variables and their effect on attitude stability and resistance to change and found that there are at least three different dimensions that these attributes (extremity, importance, knowledge, intensity, etc.) fall onto and these dimensions have different effects on the temporal stability of attitudes towards different issues. However, in light of the findings presented here that education may be a major factor interacting with attitude strength and context, Krosnick et al. (1993) and Prislin's (1996) reliance on undergraduate students as subjects in their studies suggests that the generalisability of their findings may be suspect. As has been shown by Sears (1986), the majority of studies concerned with attitude change have relied solely on college students as subjects. He argues that college students may constrain findings because of their young age, their high academic skill, their weaker self-definition and various other characteristics. This stresses the importance of further research on different types of attitudes, that is, on what it is that really distinguishes 'non-attitudes', 'distal or peripheral attitudes', 'basal or central attitudes' and 'values'. Since one person's attitude towards an issue can be a non-attitude while another person's attitude towards the same issue is termed a value, it is unlikely that research on homogeneous groups of college students will shed light on this problem. A

simple random sample of the national population is also likely to be deficient in this respect. That is, it is unlikely that we will find a large enough group with attitudes at the 4th level to allow for the necessary analysis. Hence, purposeful sampling of people known to have a very strong conviction about a particular issue might be desirable.

Although it has been demonstrated that slight changes in context or wording can lead to substantial changes in respondents' interpretations and responses, I have not made an attempt to argue that any one wording or order is more valid than another; rather one has to pay attention to the context within which the question was asked. Or as Schwarz, Groves and Sudman (1998) claim: 'To interpret answers as representing in a literal way the inner dispositions of a population is to forget the extent to which survey responses are shaped by situational influences' (p. 158).

Despite the vast amount of research on the nature of attitudes and attitude change that has been accumulated since early in the last century, a comprehensive theory of the transformations that attitudes go through on their journey from being a non-attitude through being a peripheral attitude, then perhaps a central attitude, towards possibly becoming a dichotomous attitude or an ideology (if they ever take on that journey) is lacking.

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Appendix 1

Questionnaire in Wave 1

English translation of questionnaire, 27-30 March 1987[8]

To be filled in by interviewer:

Number of respondent: _____

Year of birth: _____

Sex: 1❑ Male 2❑ Female

Constituency: _____

Name of interviewer: _____

Time at the start of interview: _____

Time at the end of interview: _____

[8] As described in chapter 3, twelve different versions of the following questionnaire were administered. Respondents were randomly assigned a particular verison.

1	Some people seem to follow what is going on in government and public affairs most of the time, whether there is an election going on or not. Others are not that interested. Would you say that you follow what is going on in government and public affairs most of the time, some of the time, only now and then, or hardly at all?	❑ Most of the time ❑ Some of the time ❑ Only now and then ❑ Hardly at all ❑ Refuse to anwer ❑ Don't know	1 2 3 4 8 9
2	Do you know who is the Speaker of the plenary session of both houses of Parliament?	write answer: _____	
3	Do you know which minister is responsible for the administration of the Statistical Bureau?	write answer: _____	
4	Which issues of national importance are you most concerned about these days?[9]	a) _____ b) _____ c) _____	
5a	Are you very concerned about a)_____, somewhat concerned, or hardly concerned at all?	❑ Very concerned ❑ Somewhat concerned ❑ Hardly concerned at all ❑ Refuse to answer ❑ Don't know	1 2 3 8 9
5b	Are you very concerned about b)_____, somewhat concerned, or hardly concerned at all?	❑ Very concerned ❑ Somewhat concerned ❑ Hardly concerned at all ❑ Refuse to answer ❑ Don't know	1 2 3 8 9
5c	Are you very concerned about c)_____, somewhat concerned, or hardly concerned at all?	❑ Very concerned ❑ Somewhat concerned ❑ Hardly concerned at all ❑ Refuse to answer ❑ Don't know	1 2 3 8 9

[9] In two thirds of the questionnaires respondents were prompted with certain issues, the Albert affair and 'Nuclear-free North' in a third, and the upcoming election and pay disputes in another third. The remaining third of the questionnaires did not contain any prompts or examples of issues (see wording in chapter 3).

6a	Would you say that you have about as much information as needed to understand these issues?	❑ Yes (→ q. 7) ❑ No ❑ Refuse to answer ❑ Don't know	1 2 8 9
6b	Where would you be most likely to seek further information about these issues? (Name as many sources as you like and rank them)	❑ Talk to family ❑ Talk to workmates ❑ Talk to friends ❑ In institutions ❑ In the press ❑ On radio ❑ On television ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 7 8 9
7	How often do you discuss these matters with others?	❑ Never ❑ Once in a while ❑ Several times a week ❑ Daily/almost daily ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9
8a	How much do you rely on newspapers for news about issues and candidates?	❑ Not at all (→ q. 9) ❑ Very little ❑ Little ❑ Somewhat ❑ Much ❑ Very much ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 8 9
8b	Which newspapers do you rely on (rank)	❑ The Peoples' Paper ❑ The Daily Newspaper ❑ Today ❑ The Morning Paper ❑ The Time ❑ The National Will ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 8 9
8c	How often do you read newspapers?	❑ Daily/almost daily ❑ Several times a week ❑ Seldom ❑ Refuse to answer ❑ Don't know	1 2 3 8 9

8d Which parts of the newspapers do you usually read first? (rank)	❑ News ❑ Editorials ❑ Gossip ❑ Articles ❑ Comics ❑ The whole paper ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 8 9
8e Which news items do you remember best, if any, from last weeks's newspaper reading?	a) _____ b) _____ c) _____	
9a How much do you rely on television for news about issues and candidates?	❑ Not at all (→ q. 9) ❑ Very little ❑ Little ❑ Somewhat ❑ Much ❑ Very much ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 8 9
9b Which news bulletins do you watch on television?	❑ RUVTV ❑ Channel 2 ❑ Both ❑ Neither ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9
9c How often do you watch news on RUVTV?	❑ Daily/almost daily ❑ Several times a week ❑ Seldom ❑ Never ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9
9d How often do you watch news on Channel 2?	❑ Daily/almost daily ❑ Several times a week ❑ Seldom ❑ Never ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9

9e How often do you watch current affairs programmes on television?	❑ Daily/almost daily ❑ Several times a week ❑ Seldom ❑ Never ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9
9f Which news items, if any, do you remember best from last week's television watching?	a) _____ b) _____ c) _____	
10a How much do you rely on radio for news about issues and candidates?	❑ Not at all (→ q. 9) ❑ Very little ❑ Little ❑ Somewhat ❑ Much ❑ Very much ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 8 9
10b Which news bulletins do you usually listen to on television?	❑ RUV ❑ The Wave ❑ Both ❑ Neither ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9
10c How often do you listen to news on RUV?	❑ Daily/almost daily ❑ Several times a week ❑ Seldom ❑ Never ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9
10d How often do you listen to news on the Wave?	❑ Daily/almost daily ❑ Several times a week ❑ Seldom ❑ Never ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9

10e How often do you listen to current affairs programmes on the radio?	❑ Daily/almost daily ❑ Several times a week ❑ Seldom ❑ Never ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9
10f Which news items, if any, do you remember best from last week's radio listening?	a) _____ b) _____ c) _____	
11a Do you get the same political information out of the various media, or do they provide you with different things?	❑ The same (→ q. 12) ❑ Different ❑ Refuse to answer ❑ Don't know	1 2 8 9
11b What is the difference?	a) _____ b) _____ c) _____	

12 Now I would like to ask you how well you think the various media distinguish between facts and their own opinions in the coverage of the election campaign. As I name each medium, I would like to ask if it distinguishes very well, somewhat well, neither-nor, somewhat badly or very badly between facts and opinions?

MEDIUM	1 Very well	2 Somwhat well	3 Neither nor	4 Somewhat badly	5 Very badly	8 Refuse to answer	9 Don't know
RUVTV	❑	❑	❑	❑	❑	❑	❑
CHANNEL 2	❑	❑	❑	❑	❑	❑	❑
RUV	❑	❑	❑	❑	❑	❑	❑
WAVE	❑	❑	❑	❑	❑	❑	❑
PEOPLE'S P.	❑	❑	❑	❑	❑	❑	❑
DAILY	❑	❑	❑	❑	❑	❑	❑
TODAY	❑	❑	❑	❑	❑	❑	❑
MORNING P.	❑	❑	❑	❑	❑	❑	❑
TIME	❑	❑	❑	❑	❑	❑	❑
NAT. WILL			❑				

13 How thorough do you perceive media coverage given to issues of national importance? Do you perceive it as very thorough, somewhat thorough, neither-nor, not very thorough or not thorough at all?

	1 Very thorough	2 Somwhat thorough	3 Neither nor	4 Not very thorough	5 Not at all thorough	8 Refuse to answer	9 Don't know
MEDIUM	❑	❑	❑	❑	❑	❑	❑
RUVTV	❑	❑	❑	❑	❑	❑	❑
CHANNEL 2	❑	❑	❑	❑	❑	❑	❑
RUV	❑	❑	❑	❑	❑	❑	❑
WAVE	❑	❑	❑	❑	❑	❑	❑
PEOPLE'S P.	❑	❑	❑	❑	❑	❑	❑
DAILY	❑	❑	❑	❑	❑	❑	❑
TODAY	❑	❑	❑	❑	❑	❑	❑
MORNING P.	❑	❑	❑	❑	❑	❑	❑
TIME	❑	❑	❑	❑	❑	❑	❑
NAT. WILL							

14 In general, how often would you say you discuss politics?

- ❑ Daily/almost daily 1
- ❑ Several times a week 2
- ❑ Seldom 3
- ❑ Never (→q.18) 4
- ❑ Refuse to answer 8
- ❑ Don't know 9

15 Who do you most often talk with about politics?

- ❑ Family 1
- ❑ Friends 2
- ❑ People at work 3
- ❑ Others (who?) _____
- ❑ Refuse to answer 8
- ❑ Don't know 9

16 Do you usually agree with the people you discuss politics with?

- ❑ Always/most of the time 1
- ❑ Sometimes 2
- ❑ Seldom/never 3
- ❑ Refuse to answer 8
- ❑ Don't know 9

17 Which media are your main sources of information about the election campaign? (name as many as you like and rank them)	❑ RUVTV	1
	❑ Channel 2	2
	❑ RUV	3
	❑ The Wave	4
	❑ The People's Paper	5
	❑ The Daily Newspaper	6
	❑ Today	7
	❑ The Morning Paper	8
	❑ The Time	9
	❑ The National Will	10
	❑ Refuse to answer	98
	❑ Don't know	99
18a Which would you say gave you more information about the election campaign, the mass media or individuals you know?	❑ The media	1
	❑ Individuals	2
	❑ Equal, but different (→q. 20)	3
	❑ Refuse to answer	8
	❑ Don't know	9
18b Different in what way?	answer: _____ _____ _____	
19 Which party did you vote for in the last general election (1983)?	❑ SDP	1
	❑ Progessive Party	2
	❑ Independence Party	3
	❑ Peoples' Alliance	4
	❑ Democratic Alliance	5
	❑ Women's List	6
	❑ Other. Which? _____	7
	❑ Was not old enough	90
	❑ Did not vote	91
	❑ Blank vote	92
	❑ Refuse to answer	98
	❑ Don't know	99

20a If the general election were held tomorrow, which party do you think you would vote for?	❑ SDP	1
	❑ Progessive Party	2
	❑ Independence Party	3
	❑ Peoples' Alliance	4
	❑ Democratic Alliance	5
	❑ Women's List	6
	❑ Humanist Party	7
	❑ MCE	8
	❑ National Party	9
	❑ Citizen's Party	10
	❑ Other. Which?	11
	_____	
	❑ Would not vote	91
	❑ Blank vote	92
	❑ Refuse to answer	98
	❑ Don't know	99
20b IF DO NOT KNOW to question 20a: But which party do you think it is most likely you would vote for?	❑ SDP	1
	❑ Progessive Party	2
	❑ Independence Party	3
	❑ Peoples' Alliance	4
	❑ Democratic Alliance	5
	❑ Women's List	6
	❑ Humanist Party	7
	❑ MCE	8
	❑ National Party	9
	❑ Citizen's Party	10
	❑ Other. Which?	11
	_____	
	❑ Would not vote	91
	❑ Blank vote	92
	❑ Refuse to answer	98
	❑ Don't know	99
20c IF DO NOT KNOW to question 20b: But which do you think is more likely that you vote for, the Independence Party or some other party?	❑ Independence Party	1
	❑ Some other party	2
	Additional explanations:	
IF ANSWER IS NOT CLEAR WRITE DOWN ANY ADDITIONAL INFORMATION (for example, will vote for either one of the Peoples' parties, never the Progressive)	_____	
	_____	
	_____	
	❑ Refuse to answer	98
	❑ Don't know	99

21 What is your marital status?	❑ Single ❑ Married, living with someone ❑ Divorced ❑ Widow(er) ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9
22 What is your main job? (get title and/or a short description of what the job entails)	Job title: _____ Description: _____ _____ _____ _____	
23 IF MARRIED OR LIVING WITH SOMEONE: What is the occupation of your spouse? (get title and/or a short description of what the job entails)	Job title: _____ Description: _____ _____ _____ _____	
24 Did you have any formal education after the age of 15? IF YES: What education?	❑ No ❑ Yes Education: _____ _____ _____ ❑ Refuse to answer ❑ Don't know	1 2 98 99

25	Finally, I would like to ask you a few questions about your attitudes towards abortion? Some people are very certain about their feelings about when legal abortions should be permitted. Other people see this issue as a difficult one to reach a decision on. Would you say that you are more like those who are very certain, or that you are more like those who see this issue as a difficult one to reach a decision on?[10]	❑ More like those who are very certain 1 ❑ More like those who see this as a difficult issue to reach a decision on 2 8 ❑ Refuse to answer 9 ❑ Don't know
26	How strong are your feelings about the topic of abortion?	❑ Very strong 1 ❑ Rather strong 2 ❑ Neither nor 3 ❑ Rather weak 4 ❑ Very weak 5 ❑ Refuse to answer 8 ❑ Don't know 9
27	Do you favour or oppose abortion on demand?	❑ Favour 1 ❑ Oppose 2 ❑ Refuse to answer 8 ❑ Don't know 9
28	All things considered, do you believe you are very happy, happy, unhappy or very unhappy?	❑ Very happy 1 ❑ Happy 2 ❑ Unhappy 3 ❑ Very unhappy 4 ❑ Refuse to answer 8 ❑ Don't know 9

This was the last question. I would like to thank you very much for your participation. Since this is a part of a larger project, I would like to ask you if you are ready to answer another, much shorter questionnaire in about two weeks time?

❑ Yes

❑ Perhaps

❑ No

[10] See chapter 3 for design of experiment on attitude questions.

Appendix 2

Questionnaire in Wave 2

English translation of questionnaire, 18-21 April 1987[11]

To be filled in by interviewer:

Number of respondent: _____

Year of birth: _____

Sex: 1❑ Male 2❑ Female

Constituency: _____

Name of interviewer: _____

Time at the start of interview: _____

Time at the end of interview: _____

[11] As described in chapter 3, four different versions of the following questionnaire were administered, depending on the assignment of repondents to different groups in Wave 1.

1	Some people seem to follow what is going on in government and public affairs most of the time, whether there is an election going on or not. Others are not that interested. Would you say that you follow what is going on in government and public affairs most of the time, some of the time, only now and then, or hardly at all?	❑ Most of the time ❑ Some of the time ❑ Only now and then ❑ Hardly at all ❑ Refuse to anwer ❑ Don't know	1 2 3 4 8 9
2	Which issues of national importance are you most concerned about these days?	a) _____ b) _____ c) _____	
3a	Are you very concerned about a)_____, somewhat concerned, or hardly concerned at all?	❑ Very concerned ❑ Somewhat concerned ❑ Hardly concerned at all ❑ Refuse to answer ❑ Don't know	1 2 3 8 9
3b	Are you very concerned about b)_____, somewhat concerned, or hardly concerned at all?	❑ Very concerned ❑ Somewhat concerned ❑ Hardly concerned at all ❑ Refuse to answer ❑ Don't know	1 2 3 8 9
3c	Are you very concerned about c)_____, somewhat concerned, or hardly concerned at all?	❑ Very concerned ❑ Somewhat concerned ❑ Hardly concerned at all ❑ Refuse to answer ❑ Don't know	1 2 3 8 9
4a	In general, would you say you were interested or not interested in reading about politics in newspapers? IF INTERESTED: Are you IF NOT INTERESTED: Are you	❑ Very interested ❑ Fairly interested ❑ Not very interested ❑ Not at all interested ❑ Refuse to answer ❑ Don't know	 1 2 3 4 8 9

4b	Turning now to the general election, do you think the amount of space devoted to the election in newspapers is far too much, a bit too much, about right or too little?	❑ Far too much ❑ A bit too much ❑ About right ❑ Too little ❑ Far too little ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
4c	Has the coverage of the election campaign in newspapers helped you in deciding how to vote in the election?	❑ Yes ❑ No ❑ Refuse to answer ❑ Don't know	1 2 8 9
5a	In general, would you say you were interested or not interested in watching programmes on politics and current affairs on television?		
	IF INTERESTED: Are you	❑ Very interested ❑ Fairly interested	1 2
	IF NOT INTERESTED: Are you	❑ Not very interested ❑ Not at all interested	3 4
		❑ Refuse to answer ❑ Don't know	8 9
5b	Overall, would you say that the amount of time devoted to the election on television is far too much, a bit too much, about right or too little?	❑ Far too much ❑ A bit too much ❑ About right ❑ Too little ❑ Far too little ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
5c	Has the television coverage of the election campaign helped you in deciding how to vote in the election?	❑ Yes ❑ No ❑ Refuse to answer ❑ Don't know	1 2 8 9
6a	In general, would you say you were interested or not interested in listening to programmes on politics and current affairs on radio?		
	IF INTERESTED: Are you	❑ Very interested ❑ Fairly interested	1 2
	IF NOT INTERESTED: Are you	❑ Not very interested ❑ Not at all interested	3 4
		❑ Refuse to answer ❑ Don't know	8 9

6b	Overall, would you say that the amount of time devoted to the election on the radio is far too much, a bit too much, about right or too little?	❑ Far too much ❑ A bit too much ❑ About right ❑ Too little ❑ Far too little ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
6c	Has the coverage of the election campaign on the radio helped you in deciding how to vote in the election?	❑ Yes ❑ No ❑ Refuse to answer ❑ Don't know	1 2 8 9
7	In general, how much would you say that you know about the policies offered by the parties in this election?	❑ Nothing ❑ Not very much ❑ A little ❑ A fair amount ❑ A great deal ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
8a	If the general election were held tomorrow, which party do you think you would vote for?	❑ SDP ❑ Progessive Party ❑ Independence Party ❑ Peoples' Alliance ❑ Democratic Alliance ❑ Women's List ❑ Humanist Party ❑ MCE ❑ National Party ❑ Citizen's Party ❑ Other. Which? _____ ❑ Would not vote ❑ Blank vote ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 7 8 9 10 11 91 92 98 99

8b	IF DO NOT KNOW to question 20a: But which party do you think it is most likely you would vote for?	❑ SDP ❑ Progessive Party ❑ Independence Party ❑ Peoples' Alliance ❑ Democratic Alliance ❑ Women's List ❑ Humanist Party ❑ MCE ❑ National Party ❑ Citizen's Party ❑ Other. Which? _____ ❑ Would not vote ❑ Blank vote ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 7 8 9 10 11 91 92 98 99
8c	IF DO NOT KNOW to question 20b: But which do you think is more likely that you vote for, the Independence Party or some other party? IF ANSWER IS NOT CLEAR WRITE DOWN ANY ADDITIONAL INFORMATION (for example, will vote for either one of the Peoples' parties, never the Progressive)	❑ Independence Party ❑ Some other party Additional explanations: _____ _____ _____ ❑ Refuse to answer ❑ Don't know	1 2 98 99
9	Which party did you vote for in the last general election (1983)?	❑ SDP ❑ Progessive Party ❑ Independence Party ❑ Peoples' Alliance ❑ Democratic Alliance ❑ Women's List ❑ Other. Which? _____ ❑ Was not old enough ❑ Did not vote ❑ Blank vote ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 7 90 91 92 98 99

10 Do you favour or oppose declaring the Nordic countries free of nuclear weapons?	❑ Favour ❑ Oppose ❑ Refuse to answer ❑ Don't know	1 2 8 9
11 How strong are your feelings about nuclear weapons?	❑ Very strong ❑ Strong ❑ Neither nor ❑ Vague ❑ Very vague ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
12 All things considered, do you believe you are very happy, happy, unhappy or very unhappy?	❑ Very happy ❑ Happy ❑ Unhappy ❑ Very unhappy ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9

This is the end of the questionnaire. We have now spoken to you twice. Now, I want to ask for your permission to call you once again, shortly after the election. Do you think that will be possible?

❑ Yes

❑ Perhaps

❑ No

Appendix 3

Questionnaire in Wave 3

English translation of questionnaire, 27.-29. April 1987[12]

To be filled in by interviewer:

Number of respondent: _____

Year of birth: _____

Sex: 1❑ Male 2❑ Female

Constituency: _____

Name of interviewer: _____

Time at the start of interview: _____

Time at the end of interview: _____

[12] Four different versions of the questionnaire were administered. See questions 11-13.

1	Which issues of national importance did you find most important during the election campaign?	a) _____ b) _____ c) _____	
2	Did you watch the programmes reporting the election results on TV?	❑ Yes ❑ No (→ q. 5) ❑ Refuse to answer ❑ Don't know	1 2 8 9
3	Which TV channel did you watch?	❑ RUV TV (→ q. 5) ❑ Channel 2 (→ q. 5) ❑ Both ❑ Refuse to answer ❑ Don't know	1 2 3 8 9
4	Which TV channel did you find better on the election results?	❑ RUV TV ❑ Channel 2 ❑ Both were even ❑ Refuse to answer ❑ Don't know	1 2 3 8 9
5	Did you listen to the programmes reporting the election results on the radio?	❑ Yes ❑ No (→ q. 8) ❑ Refuse to answer ❑ Don't know	1 2 8 9
6	Which radio channel did you listen to?	❑ RUV (→ q. 8) ❑ Wave (→ q. 8) ❑ Both ❑ Refuse to answer ❑ Don't know	1 2 3 8 9
7	Which radio channel did you find better on the election results?	❑ RUV ❑ Wave ❑ Both were even ❑ Refuse to answer ❑ Don't know	1 2 3 8 9

8	Which media were your main sources of information during the election campaign? (Name as many as you like and rank them).	❑ RUV TV ❑ Channel 2 ❑ The State's Radio ❑ The Wave ❑ People's Paper ❑ Daily Newspaper ❑ Morning Paper ❑ Time ❑ National Will ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 7 8 9
9a	Did you vote in the parliamentary election last week?	❑ Yes ❑ No ❑ Refuse to answer (→ q. 10) ❑ Don't know	1 2 8 9
9b	Which party did you vote for?	❑ SDP ❑ Progessive Party ❑ Independence Party ❑ Peoples' Alliance ❑ Democratic Alliance ❑ Women's List ❑ Humanist Party ❑ MCE ❑ National Party ❑ Citizen's Party ❑ Did not vote ❑ Blank vote ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 7 8 9 10 91 92 98 99
10	Which party did you vote for in the general election in 1983?	❑ SDP ❑ Progessive Party ❑ Independence Party ❑ Peoples' Alliance ❑ Democratic Alliance ❑ Women's List ❑ Other. Which? _____ ❑ Was not old enough ❑ Did not vote ❑ Blank vote ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 6 7 90 91 92 98 99

Version 1 Now, I would like to read two statements to you and ask you to tell me if you agree or disagree.[13]		
11 Women should stay at home and leave running the country up to men.	❑ Strongly agree ❑ Agree ❑ Neither nor ❑ Disagree ❑ Strongly disagree ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
12 Even for such jobs as police officers, women should be evaluated on the basis of their individual qualifications rather than their sex.	❑ Strongly agree ❑ Agree ❑ Neither nor ❑ Disagree ❑ Strongly disagree ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
13 Do you favour or oppose abortion on demand?	❑ Favour strongly ❑ Favour ❑ Neither nor ❑ Oppose ❑ Oppose strongly ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
14 All things considered, do you believe you are very happy, happy, unhappy or very unhappy?	❑ Very happy ❑ Happy ❑ Unhappy ❑ Very unhappy ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9

[13] A quarter of the sample answered a question about attitudes towards abortion preceded with 'pro-abortion' statements.

Version 2 Now, I would like to read two statements to you and ask you to tell me if you agree or disagree.[14]		
11 The trouble with modern society is that it is too easy not to take responsibility for your actions.	❑ Strongly agree ❑ Agree ❑ Neither nor ❑ Disagree ❑ Strongly disagree ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
12 It is wrong for a married person to have sexual relations with someone other than the marriage partner.	❑ Strongly agree ❑ Agree ❑ Neither nor ❑ Disagree ❑ Strongly disagree ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
13 Do you favour or oppose abortion on demand?	❑ Favour strongly ❑ Favour ❑ Neither nor ❑ Oppose ❑ Oppose strongly ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
14 All things considered, do you believe you are very happy, happy, unhappy or very unhappy?	❑ Very happy ❑ Happy ❑ Unhappy ❑ Very unhappy ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9

[14] A quarter of the sample answered a question about attitudes towards abortions preceded with 'anti-abortion' statements.

Version 3

Now, I would like to read two statements to you and ask you to tell me if you agree or disagree.[15]

11	Unilateral elimination of British nuclear weapons would increase the Soviet Union's military superiority.	❑ Strongly agree ❑ Agree ❑ Neither nor ❑ Disagree ❑ Strongly disagree ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
12	Closing down the NATO control stations in Iceland and Greenland would lead to total domination of the Soviet nuclear fleet in the North Atlantic.	❑ Strongly agree ❑ Agree ❑ Neither nor ❑ Disagree ❑ Strongly disagree ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
13	Do you favour or oppose declaring the Nordic countries free of nuclear weapons?	❑ Favour strongly ❑ Favour ❑ Neither nor ❑ Oppose ❑ Oppose strongly ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
14	All things considered, do you believe you are very happy, happy, unhappy or very unhappy?	❑ Very happy ❑ Happy ❑ Unhappy ❑ Very unhappy ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9

[15] A quarter of the sample answered a question about attitudes towards nuclear weapons preceded with 'pro-nuclear' statements.

Version 4

Now, I would like to read two statements to you and ask you to tell me if you agree or disagree.[16]

11	Increasing the number of nuclear weapons elevates the danger of a nuclear war.	❑ Strongly agree ❑ Agree ❑ Neither nor ❑ Disagree ❑ Strongly disagree ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
12	The only sensible way to prevent a nuclear war is to eliminate all nuclear weapons.	❑ Strongly agree ❑ Agree ❑ Neither nor ❑ Disagree ❑ Strongly disagree ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
13	Do you favour or oppose declaring the Nordic countries free of nuclear weapons?	❑ Favour strongly ❑ Favour ❑ Neither nor ❑ Oppose ❑ Oppose strongly ❑ Refuse to answer ❑ Don't know	1 2 3 4 5 8 9
14	All things considered, do you believe you are very happy, happy, unhappy or very unhappy?	❑ Very happy ❑ Happy ❑ Unhappy ❑ Very unhappy ❑ Refuse to answer ❑ Don't know	1 2 3 4 8 9

This is the end of the questionnaire and we would like to thank you very much for your kindness and assistance in answering all our questions.

[16] A quarter of the sample answered a question about attitudes towards nuclear weapons preceded with 'panti-nuclear' statements.