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**Technology, society and democracy: The social impact of, and  
democratic control over technology, with special reference to  
information technology and data protection**

van Meurs, Philip Cornelus G. A., Ph.D.

London School of Economics and Political Science (United Kingdom), 1990

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TECHNOLOGY, SOCIETY AND DEMOCRACY:  
the social impact of, and democratic control over technology,  
with special reference to  
information technology and data protection.

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July 1989.

Philip van Meurs.

## ABSTRACT

Certain developments and applications of science and technology are often seen as a problem for society. The first chapters of this work concentrate on what technology actually is, its relation with science and the problems it creates for society.

Two questions are asked:

1. Is democratic control of technological research and development necessary and possible?
2. Is democratic control of the applications of this research and development necessary and possible?

A broad definition of technology brings out the relation of science and technology. The key concept is: control over nature, non-human as well as human.

The theories of Marx and Engels show that technology and science are an integral part of society and cannot be seen as separated from it. This obvious point is taken by the Frankfurt school which discusses the ideological aspects of technology and science. This culminates in the notion of technology as ideology itself (Habermas). These ideas can be used in relation to

information technology and its dangers and uses for the protection of privacy.

The issue of information technology in relation to privacy and personal freedom is used (i) to demonstrate the possibilities of democratic control and (ii) because the problem of privacy and dataprotection is generally recognised in many countries.

Because of the defects found in a number of legislative implementations of dataprotection a proposal is made for a more complete and effective control of information technology in relation to dataprotection.

This proposal rests on two related concepts:

1. Democratic control through citizens committees (as a kind of jury duty),
2. The extension of the division of power to a fourth data controlling power, controlled not only by a legislative power but a separate citizen's committee.

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**PREFACE**

The problem which is addressed in this work is the problem of democratic control of technology, or better technological applications. The way in which such a problem is approached usually is different from the approach used here.

The problem of technology is, to my view, best described in terms of rationality and alienation, a combination of the views of Marx and Weber as presented by The Frankfurt School, notably Horkheimer and Adorno. Their analysis of reality confronts us with underlying tendencies in modern industrial society: the ideological impact of the combination of science and technology. The goal of this combination is the control over nature. This attempt of control, seen in the light of school of thought called 'enlightenment philosophy', does not merely stop at the relation man - nature, external nature, but extends itself to the inner realm, man itself.

Therefore the ideological aspects of science and technology are made problematic by The Frankfurt School. Old ideologies have come to an end, mankind has lost its grip on (human) reality and



translates its relation with nature and fellow man in scientific and technological terms.

This bleak picture leaves for thinkers like Horkheimer and Adorno not much room for change. Other exponents of the Frankfurt School, like Marcuse, Fromm and later Habermas, struggle with this picture and sometimes propose rather extreme ways out.

This study, be it in a different way, proposes in certain respects a no less extreme solution. The solution is extreme certainly when looked at from the viewpoints of Horkheimer and Adorno, since every attempt to come to terms with the false reality of our everyday experience is doomed to failure. Therefore the only possible critical praxis is for them critical philosophy.

Proposing solutions has beside the contribution to a 'way out' also the function of establishing the limits of what is humanly possible. And in such a way we may be able to come to terms with ourselves, our institutions and our whole society.

The emphasis on information technology has two reasons:

1. It serves as an example, an exercise in finding solutions in a concrete situation. If elements of this discourse are valuable in the search for applicable solutions much is reached, although un hoped for. My intentions are more modest. The problem of control over the application of technology is only presented in yet another way by going to an extreme and finding that this is as much as we can do. The extreme itself may be subject to heavy criticisms, and may be itself not desirable.

2. The Frankfurt School as a whole distinguishes itself in a negative way. They, so to say, do not make themselves vulnerable in attempting to come up with concrete proposals. They do not search for solutions which may be present in our 'false' society itself. To my mind democracy as theory and praxis is still not exhausted where solutions for real and concrete problems are concerned.

Here, I hope, I have explained the . . . break which exists in this study. One could argue that another more traditional approach would be better. But such an approach lacks the necessary critical content, to which I feel I am committed.

In the next chapter the reader will be confronted with a general discussion of the problem of science and technology in our society.

Then the issue of information technology and more precisely the issue of data protection will be addressed.

The issue of data protection is discussed because it implicitly addresses the problem of the anonymous control of an institution like the state, and other interested agencies, over the individual by means of a technology which may prove itself disastrous. Until a true free society emerges, the danger of authoritarian control will always exist.

## 1. The problem of Technology.

A central technology in our time, perhaps *the* central technology, is information technology. The computer is the central device in this technology. I have chosen this subject because I believe it constitutes a break with earlier developments. It is a break, not so much from a pure scientific or technological point of view, but because of the enormous influence it has on the average citizen.

The influence is two-fold. First, information technology establishes the belief that non-human entities can think in the way human beings do. This cannot in itself be an especially serious mistake. We can all imagine the possibility of extra-terrestrials, non humans, who possess the capacity of thought, emotion, creativity, etc. Even on our own planet the existence of intelligent non-humans in the form of intelligent whales, is not all that unlikely.

A problem arises when intelligence is attributed to our own creations, machines. It all depends, of course, on what we think intelligence actually is. When it is merely some formal problem solving capacity, then the idea of intelligent or even thinking machines is not so far-fetched.

But intelligence is more than that. It includes certain capacities of problem solving which go beyond the capacities of formal problem solving systems. What about the element of intuition, which makes us choose from sometimes an enormous number of seemingly equal directions? Brain research still cannot identify the mechanisms which are responsible for creativity, intuition, etc. Moreover we do not even know what these things exactly are, so we can scarcely copy such activities in machines.

Aside from these considerations many people believe that machines can think, or ultimately are able to do so. This is, I believe a grave error. An error, because it invokes a complementary notion which reduces human beings and other beings with 'real' intelligence to biological machines. And machines have, per definition no rights. They can be manipulated and controlled. This brings us to the second influence that information technology works upon us.

Although this second influence is not necessarily directly related to the first it is seen as a real problem. It is the problem of the enhanced possibilities of a government or of one of its institutions to manipulate the lives of citizens to an extent that they are not free any more. This enhancement means that all kinds of overt tyranny can be replaced by covert manipulation

through threats or harassment on the basis of what is known about one's actions and beliefs.

Private beliefs and behaviour concern the individuals themselves and do not in itself concern or harm others. The selection of individuals for reasons that their private behaviour or beliefs which are held to be *potentially* undesirable for a given regime or seen as *potentially* disturbing for the security of a nation, is an important and serious problem. We all know that the Nazi regime in Germany and the occupied territories in the Second World War tried to control citizens in this way. Another example was the Stalin regime in the Soviet Union.

Aside from these clear examples we also experience the possibility of this danger in the democratic societies of Western Europe and North America. There are numerous examples of abuse of private information by police forces and security organizations. The problem of privacy and interference already existed before computers were invented. Also classical, manually operated bureaucracies in the hands of a totalitarian regime performed such functions, be it less complete. I will argue later in this chapter that technology, and therefore information technology, is a broader notion than merely the methods of construction of devices important to it.

The possibilities of computers and data base technology makes tyranny more efficient and less overt. To give an example, it is much easier to detain potential demonstrators or 'convince' them not to take part in a demonstration before the demonstration takes place than having to arrest them during a demonstration. Moreover, these actions may remain undiscovered, and if discovered hard to prove.

In this work I will try to look for a democratic solution for these problems in the light of more general views on technology, its place in society and its ideological effects. The case of data protection and the control of information technology concerned with data protection is the focus of this study.

### 1.1. General Considerations.

The old values of previous periods of our society slowly disappear and make place for a growing cynicism. However, the identification of the development of science and technology and the progress of mankind is still an existing view. It is used often in advertisements for the products of especially the electronic and aerospace industries. This view is related to early positivist

philosophy of de Saint-Simon and Comte, but as we shall see is also supported in the works of Marx and Engels.

Since the first industrial revolution there has always been resistance against the increasing application of science and technology in the production process as well as in other parts of society. This resistance took place in the form of spontaneous labour movements, such as the English Luddites <sup>1</sup>, and in intellectual romantic trends. More recently (since the 1950s) there has been the development of a more or less left-wing oriented critique of science and technology, which centers around the issue of the suppression of people by means of science and technology. An attempt is made to identify especially those sides of science and technology which prevent further human emancipation.

The development of scientific thought, however, was a necessary contribution to the liberation of mankind from superstition and powerlessness in the face of nature. Yet the victory over nature seems to have gone at the expense of human freedom, in so far as people have become slaves of the technologies which they themselves have developed. However, the development of the forces of production is often seen as a condition for a socialist (Marx) or, as Marcuse later calls it, a pacified society.



Not only human freedom is at stake. The technological application of relatively recent scientific discoveries in the field of nuclear physics has led to the development of all kinds of nuclear weapons which, if used, can wipe out human existence. If not used, they can at best, as defenders of the balance of (nuclear) power want us to believe, avert war. However, their mere existence and the ease with which they can be made creates an international political climate that by itself may be counterproductive to real progress, for instance in the field of underdevelopment.

There is, however, an important consideration. Technology can be liberating as well as repressive, sometimes in one and the same application.

Let us consider as an example the automobile. It does not need much explication that the automobile gives the owner a large freedom to move over greater distances than he could do on foot. An automobile is not limited to preset routes and schedules like trains. It can be used at any time of the day and is only limited in its reach by the capacity of the petrol tank and consequently the owner's purse.

On the other hand there are a number of limiting and even rather repressive effects of the use of automobiles. We are all familiar with traffic jams and queues on highways. The kind of engine that is used causes pollution with great effects not only for human health but also for the well-being of the rest of nature. This small example serves merely to illustrate this paradox. I will treat the matter in more depth in chapter three.

In this work I want to review several theories of technological development *and* its effects. I want to do this in search of an answer to the question: Is democratic control of technology possible? If so, how can it be done?

This question consists of two parts:

1. Is democratic control of technological research and development (R&D) necessary and possible?
2. Is democratic control of the applications of the outcome of this R&D necessary and possible?

It remains to be seen what we want to control and why. Is control of research and development necessary or control of technological applications, or both? In order to find an answer to these questions we have to define what technology actually is and how it comes about. I will deal with definitions later in the chapter.

For the time being I will pose two other related questions. Technology cannot be simply seen as only superficially related to the society that makes use of it. It may be assumed that technology and the society that brings it forth and uses it have many intricate relations. Terms like 'technological society' or 'industrial society' are often used for the societies we live in. Since we are interested in the relation between technology and democracy, two as yet undefined notions, we have to consider to what extent democracy is influenced by technological developments, in which way it is stimulated or hindered.

Secondly to what extent has technological research and development and its applications been limited or stimulated by democratic decision-making?

The purpose of this exercise is to arrive at more or less concrete proposals about democratic control of technology. After a more general discussion I think it is interesting to look at a particular problem of our society, which is pushed to the fore by the applications of information technology and the use of computers: the problem of gathering and using information held about private individuals.

The registration of data about individuals was invented in our industrial society and is relatively new in history. The arguments in favour of it are many, but usually boil down to arguments about the improved possibility of distributing goods and services by governments and other organizations in mass-societies. With the advent of the welfare state this gathering of information has only increased.

But not only beneficial effects can be attributed to this registration. We have already seen regimes in the twentieth century which have made wide abuse of personal data, without the use of computers.

Numerous debates have been held about the problem of 'Big Brother'. In principle absolute control by the state is made possible because of the increased use of computers by governments. And this possibility is no longer fantasy. Where Orwell's book *1984* was some time ago a bad fantasy about perfect control of a government over the individual, it may now be realized with modern technology.

In the face of the promises of great wealth, brought to us by modern technology and science, we can also see despair and fear. This fear, not only for technology but also inspired by the general

development of our societies, is to be taken seriously. It is a sign that technological developments are not under control and that undesired side-effects are being felt.

Because of this possibility of destruction and complete control by an evil-minded government or even only an evil-minded part of a government or other organizations, the optimism about technology is diminished today. The importance of information technology is not confined to the use as an instrument of repression, and nuclear power is not the only danger for human life. Both have their 'right' applications or at the very least that potential. Decrease in the quality of life, in spite of possibly benevolent intentions, can be and sometimes is brought about by other quite diverse technologies. I will deal in later chapters with information technology especially because I perceive it as an issue. However, aside from a proposal for the establishment of an institution which can exercise control over large databases in relation to privacy and can assess the possibilities of information technology in that respect, the discussion about democratic control of technology and its applications may be taken as more general.

Before I do this I would like to make some remarks about some views that are expressed by several writers about technology and

science and their effects for human life, society. etc. Then I will try to find definitions for the central notions I deal with. Technology is obviously in need of a definition, and so is the notion of 'ideology'. Not only is technology connected to our society in an productive or material sense, it is also connected in a non-material or 'ideological' sense. This means that our thought is somehow influenced by technological activities. But these statements are too vague to have a real meaning. Hence the need of definition.

Although I cannot here fully deal with the question of to what extent science and technology can be seen as part of one and the same thing, it is a very important matter. An easy and unambiguous answer cannot be given, but a tendency can be seen. At least two levels need to be considered and explained, (i) the level of the individual scientist (or technologist) and (ii) the level of society where the results of scientific or technological practice are experienced, whether in industrial production or for the life of the citizen.

The structure of the discussion will be as follows.

First, I will discuss possible notions of technology in the rest of this chapter. Then, in chapter two, I will discuss in the light of

the notions that I adopt the theories of the Frankfurt School (i.e. Horkheimer, Adorno and Habermas) concerning technology and ideology. In chapter three I want to use Habermas' discussion of technological reason and practical reason to find what elements in a technology are liberating and what elements are repressive.

In order to give more than only general answers to these questions it will be necessary, in chapter four, to deal with democracy and how we can control technology in a democratic way. In chapter five I will discuss some current notions about privacy and personal freedom in connection with surveillance and dataprotection, and the remedies which are proposed by various writers.

Given parliamentary democracy as it is experienced in the west I will devote chapter six to how in several countries technology is actually controlled. Then a technology which in my mind is exemplary in its possibilities of liberation and at the same time suppression, information technology will be discussed at greater length.

Following this discussion I will, in chapter seven, make some proposals concerning the control of this particular technology and how it can be used in a way as to stimulate the democratic

process, enhance freedom of communication, free access of information for the citizen and to limit the possibilities of abuse.

In chapter ten I will conclude and evaluate the discussion.

## 1.2. A principal position.

First of all I do not share the pessimism of many writers about our modern technological (or industrial) society. Writers like Marcuse, Ellul, Adorno and Horkheimer predict a dark future for humankind if nothing radical is done. Sometimes the prospect of a radical act is closed and we are left with the expectation of hell.

I believe that when we are dealing with apparently undirected and unintended phenomena as a result of human activities, this does not mean that mankind will never be able to control these phenomena or at least check their undesirable effects. As in any development, human development is not without difficulties. Every heightening of powers goes along with loss and destruction of older accomplishments. This process can lead to crises as can clearly be seen for instance in human development when a child reaches the stage of adolescence. It strikes me that the expression



of bewilderment and a sometimes quite violent reaction to this state of mind has parallels in our society.

The development of the collective powers of humanity through the development of science and technology coincides with a society where the human being finds him/herself an individual, basically alone and equipped with moral convictions which seem out of date and without value. This phenomenon of individuality in a negative sense (i.e. the individual without the experience of the group) and the despair that results from it is in my view also responsible for the deterministic theories which we have seen in philosophical and sociological literature. This determinism can be traced back to the theories of Marx and Engels (and of others in the nineteenth century, like Nietzsche) who observe that economic and social developments unfold behind the backs of people, capitalists and workers alike. For them, as we shall see later, this was not a reason to assume that humankind could *not* take its destiny in its own hands; on the contrary capitalist developments enhanced the forces of production in such a way that just this 'self-control' is possible.

### 1.3. Views on society and technology.

It is interesting to observe that many critical studies about technology and industrial society claim a deterministic approach and yet have a tendency to talk about industrial society and technology as though they are the results of conscious choices (sorcerers apprentice).\*

The point of the discussion here is that there are autonomous social processes, and that the development of technology is among them. For many reasons, political and economic, the development of technology is and has been only partially subject to conscious control and so is scientific development. Saying that a process is autonomous is not a value judgement, it may be maintained that some mechanisms in human society have to be autonomous and that the attempt to control them will lead to disaster. The attempt to give direction to human destiny includes the judgement of what is to be controlled and to what extent.

\* Althusser, who claims a Marxist viewpoint, asks the question 'Who or what makes history?' This, of course, will not do. It is the same question as 'Who or what makes life?' or 'Who or what makes the universe?'. They belong to that range of questions which in the positivist philosophy are categorized as meaningless, because no answer can be given, unless a religious position is taken. (In H.Arentz, cs. *Was ist revolutionärer Marxismus? Kontroverse über die Grundfragen Marxistischer Theorie zwischen Louis Althusser und John Lewis* (What is Revolutionary Marxism? Controversy about the basic notions of Marxist Theory between Louis Althusser and John Lewis), in an article *Antwort an John Lewis* (Answer to John Lewis), p.47.)

Ellul says in his foreword to *The Technological Society* that he uses his deterministic view in a sociological way, because he believes that there is a 'collective sociological reality, which is independent of the individual'.<sup>2</sup> Therefore the individual plays no role in Ellul's story. The individual is a 'bearer' not an 'agent' of society, as Althusser puts it. As far as I know the works of both Ellul and Althusser I can only say that these statements are axiomatic and do not rest on actual demonstration.

Moreover, these theories take as a consequence a mechanistic form. Ellul thinks about social processes in terms of mechanisms, on a very large scale:

Keeping in mind that sociological mechanisms are always significant determinants - of more or less significance - for the individual, I would maintain that we have moved from one set of determinants to another. The pressure of these mechanisms is today very great; they operate in increasingly wide areas and penetrate more and more deeply into human existence. Therein lies the specifically modern problem.<sup>3</sup>

The above citation gives the impression that in earlier times mankind was less bound, more free. Though Ellul says that he does not want to give this impression, he nevertheless gives no analysis of the origin and growth of his sociological mechanisms.\*

\* It would be hard to deny determinism on logical grounds, because in the complexity of history it is difficult to isolate independent actions of the individual will. Elster gives a formal definition of determinism: "Determinism is the postulate that any event has a cause: a determinate set of causal antecedents that are jointly sufficient and individually necessary for its occurrence."(Jon Elster, *Explaining Technical Change, A Case Study in the Philosophy of Science*, Cambridge 1983, p.27.) One of the main denials of  
(continued...)

It seems that part of the problem also lies with the notion of nature the structuralists, especially Ellul, have. Ellul nowhere defines the notion of nature, but distinguishes nature from the human being and its products. There is the somewhat romantic pessimism of the human being who, as the erring sorcerer's apprentice, is intruding on the areas which were reserved for nature, and cannot stop what he has started after the desired tasks were magically completed.

\* (...continued)

determinism is the theories of statistically random events and of objective indeterminacy. The first says that there is a "probability distribution over the range of possible outcomes". The second says that in some cases there are no probabilities to be ascertained.

Dealing with causal explanation in the social sciences Elster continues by saying that the role of the individual in society is a pseudo-issue.(ibid., p.32-33.) For him it is only possible to explain society and history in terms of individual action, because it is individual action that 'determines' history and society. This issue may be important from another point of view. It may be that there is evidence that history cannot be influenced by the action of a single individual. Society may temporarily change its course but eventually return on its former course. "If society is stable in this sense, and if any action by an individual counts as a 'small' contribution, then the individual has no proper role in history."

The theories put forward by the French structuralists (if we can use this term for a quite diverse group ranging from Althusser to Ellul) are then challenged to give a detailed explanation for each case they discuss of the 'dynamic stability' of social groups. Since the groups they are usually discussing are large and quite abstract entities like 'capitalist society' or 'technological society' it is difficult to show this kind of stability without postulating it as an axiom in the theory.

If such demonstration can be given then we can predict future states of whole societies by using only macro-variables. According to Elster explaining macro-variables using macro-variables, in most cases dealt with in the social sciences, is impossible.

#### 1.4. Definitions.

There are two ways to describe a concept. One is to give a new name to it in the hope that this new definition will point to a more precise characterization of the phenomenon or notion. The other is the use of the old term, perhaps extended in its original meaning. As an example of the first way of defining, Ellul describes the 'old' term 'technology' as 'technique' which seems to be the organized aggregate of single techniques. I choose the other option. For technology this means that we rethink the notions behind it.

Webster's Dictionary gives the following explanation of the word *Technology*:

1. the science or study of the practical or industrial arts.
2. the terms used in an science or an art, etc.; technical terminology.
3. applied science.<sup>4</sup>

The first two explanations are for us not very important but the third is. This explanation leads to what may be called the limited or classical definition of technology: "Technology is the systematic arrangement and application on the basis of the natural sciences of manipulations and executions (techniques) in order to process

and control the raw materials delivered by nature and the phenomena which occur in nature, directed towards industrial production."

Technology in this limited meaning occurs, except in some cases, only after the industrial revolution. A true combination of science and technology begins only at the end of the 19th century in the electrical and chemical industries. The early mechanization of industrial techniques (in contrast with the pre-industrial 'crafts') is autonomous in respect to the sciences (as separated from technology) and proceeds as a practical trial and error process. This situation took place in the first half of the 19th century. After this period the development of modern (natural) science and technology results in an intensification of the development of science.

The notion of 'rationality' when applied to the understanding of technology indicates that the term 'technology' can be used in a non-physical sense. The earlier limited definition was about the physical or more direct aspect of technology.

The more direct or physical aspect of technology points at the control of materials and equipment in order to reach certain goals in the form of products. This is the ability to control nature

in a strict material sense. It involves specialized knowledge of tools, properties of materials and methods of construction. This knowledge has become more complex more specialized and finds its application in mass production of goods, large projects like space-travel and helps greatly complex and subtle natural scientific research.

This notion of technology is often taken for granted. And not without reason. Such a limited definition allows for the explanation of the role of techniques (or technology) play within a greater area, for example the economy. The economist Giovanni Dosi therefore defines technology as:

...a set of pieces of knowledge, both directly 'practical' and 'theoretical', know-how, methods, procedures, experience of successes and failures and also, of course, physical devices and equipment...Technology in this view, includes the 'perception' of a limited set of possible technological alternatives and of notional future developments.<sup>5</sup>

This definition limits our attention to the process of strict technological development and research, because also these pieces of knowledge are straightforwardly directed to the manipulation of physical devices and equipment. Technology is, according to definitions like this, not immediately seen as integrated in society as such. It can be argued that defining technology on a broader basis gives rise to confusions and moreover would lead to definitions which lose the possibility of

fruitful explanation of technological developments and its effects on society. One of the objections against the broadening of the notion of technology is that it becomes vague and that explanans and explanandum cannot be separated clearly anymore.

The narrow definition allows us to state the problem of technology in relation to society by separating, at least in principle, technology from society and treats them as two different things. It describes the work of technologists and how they achieve their goals. It leaves untouched the organizational and social basis of the practice of technology.

Technology, however, is not only a set of pieces of knowledge in the service of material production. There are a number of aspects which do not immediately result in physical products but which are a condition to it.

Thus the increasing manipulation of nature in an industrial production process demands more than knowledge about material things which is directly to be operationalized. It demands also the organization of the labour process. But not only that, such organization has large consequences for society. This means we have to attempt to widen our notion of technology, without making it all encompassing and hence useless.



This broad notion should not contain only the scientific- technical transformation of nature, but also the 'scientific' techniques of organization such as 'scientific management' and bureaucracy. Now it is possible to make a division between 'production technology' and 'organization technology'. The first is related to the 'real' labour process (the manipulation of nature) and the second to the relations of labour.

In this sense it is possible to understand not only industrial organization but also bureaucratic or administrative organization as a form of technology. It is, so to say, a non-physical aspect of technological development.

A possible objection against it is that such a notion would stretch the definition of technology too far. This definition is stretched especially because other elements than a straightforward purposive or means-end rationality come into play. Human organizations do not only exist in order to reach a formal goal but tend to live a life of themselves. Often there is a tendency of the leaders of these organizations to define new goals and other justifications for the existence of their 'bureaus' when the old goals have disappeared. Elements like 'power' and self-interest

play a great role in the formation and maintenance of institutions and organizations.

But even when organizations are not fettered by the self-interest and desire for power of their leaders (and most likely other members), there is still the element of rigidity which is brought about by the formalism of their activities.<sup>6</sup> This is most clear in administrations especially state or government organizations. But a certain amount of formalism is present in industrial or productive organisation. On the workfloor the work is not merely directed by the organization of work (Taylorism is always a popular example) but also by administrative considerations, perhaps to a lesser extent. The original goal, in some cases, may easily be displaced by the goal of formal conduct.\* Then the organization becomes from a substantive point of view empty and hence inefficient.

Against this it can be argued that in principle (ideal type) bureaucracy and administrative organizations are directed towards the control and organization of people, certain processes in

\* In case of production we do not see this very often in the capitalist West. But it is common knowledge that it occurs very often in the Soviet Union and its satellites. There production is 'bureaucratized', in the bad meaning of the word, that the original goal of production units is replaced by formal goals. See for a detailed discussion, Voslensky, Michael S., *Nomenklatura, Die herrschende Klasse der Sowjetunion*, Vienna, 1980, especially ch. V, pp.229-261.

society and production. If they fail to respond to their substantive goals it can be said that we are dealing with an imperfect or sometimes altogether failing 'organization technology'.

This means that the notion of 'nature' also has to be extended, to the human sphere. *Technology can now be understood as a principle of control, though still as a principle of control of 'nature', including that part of nature which is human, society and the individual.*

To return to Ellul's pessimism about the interaction of man and nature, lies in an absolute division of nature and humankind which is, I believe, a mistake. It can only be made in terms of relationships, which is for instance, rightly made by Karl Marx and John Dewey. Mankind has to interact with a non-human environment, nature. This is not principally different from other life-forms. The only difference lies in the way mankind interacts with the non-human environment. The human being uses tools. Hence technology, also in the limited definition, is its mode of interaction. This interaction, granted, may be destructive for that environment but also beneficial. Symbiosis belongs still to the possibilities.

If we still want to keep a limited definition of technology, a destructive interaction with nature is not necessarily the result of a too much technology but may be the result of a too little technology. The whole issue of environment pollution, deforestation, etc., can be seen in the light of bad side effects of rather incomplete technologies. These technologies are the result of a limited view of the desired effects that they are supposed to have.

In a further advanced technological society the view may develop that direct effects desired cannot be seen isolated and out of context of further effects on society and nature. Therefore the development of more advanced technologies without all kinds of side-effects together with social institutions deciding about their application would lead to more complete mastery of technology. This surely does not mean that when a certain technique is given up as unsatisfactory in a wider sense is actually admitting that technology itself has gone too far and that mankind has developed too much technology.

Using the extended definition, the same can be said about the technology that we call social organization, the interaction with the environment which is human (internal nature), like division

of labour, existence of social classes, management and the influence of governments on society.

Dictatorships, totalitarian regimes may be the result of a too much 'social technology' or a too little 'social technology' or an altogether failing technology which rests on wrong insights about human nature.\*

The control of organic and inorganic matter is important for production of commodities on the one hand and citizens in the state on the other. We arrive now at an important point concerning the question of how far we can extend our definition of technology.

#### 1.5. Rationality and the rationalization process.

Max Weber developed a broader notion behind technological (or instrumental) thought as an aspect of western civilization. This broader notion is purposive or goal-rational thought and action. Purposive rational thought is a broader notion because:

\* The above gives perhaps the impression that I think that all this can be objectively established. This is not the case. I merely want to signal a problem which is overlooked by Ellul and also by the writers of the Frankfurt school like Horkheimer and Adorno (1947) and others like Eugene Schwartz (1971) who wrote an influential book on the influence of science and technology on society appropriately called 'Overskill.'

- a. it is the basis of technological-scientific thought in general and rooted in
- b. the philosophy of enlightenment which deals with scientific problems as well as with society.

The notion of purposive rational action takes us towards an important historical discontinuity, industrialization, which at the same time embodies the rise of capitalism. Not only the organization and technique of the production process go through radical changes, but a totally new social, political and ideological superstructure comes into existence. This process of change, which embraces the whole of western society, begins already far before the industrial revolution. It was analyzed by Marx as the transition from the feudal to the capitalist mode of production. Weber used for this process the term "rationalization process".

Production and labour previously took place under direct political rule which had to be legitimized ideologically. In modern capitalism it now becomes the domain of the self-regulating market. The new production system is no longer static but becomes dynamic. The dynamics of the ongoing growth of production, innovation and concentration, bring forth more and more problems on the social level and in relation to the conditions of accumulation, which can no longer be solved by the

market mechanism. This is why the period of late capitalism is accompanied by a growing intervention of the state.

In early capitalism, at the beginning of the industrialization process (between 1820 and 1850), it is still possible to make a distinction between technology and the natural sciences on the one hand as examples of rationality and the free market and social institutions (the state in so far as it contains elements from a bygone age together with religious institutions) on the other.

This distinction (made among others by Marx) does no longer apply for late capitalism. The process of rationalization has pervaded society beyond its strictly economic and scientific level, by entering the political and ideological levels. In the words of Lukács: ...a society rationalized through and through (durchrationalisierte Gesellschaft).<sup>7</sup>

#### 1.6. Legitimation and Ideology.

In order to be able to assess more specifically the impact of technology and science on society we have to consider some aspects of ideology and legitimation connected with the process of application of science and technology. We have already explored the ideological possibilities of technology earlier in this

chapter. Now a more in depth social and cultural analysis of its results is appropriate. In the next chapters I will then consider some theories about technological and scientific development, and its effects. Especially the thinkers of the Frankfurt School have devoted much thought to it.

The traditional society knew a political domination which had to legitimate itself in terms of the interpretation of the 'good life', which beyond a Christian notion of duty is also used by the utilitarians in their notion of "the greatest good for the greatest number." Modern society with its self-regulating commodity production has a tendency of not needing goals and authorities to legitimate its political and economic organization. Productivity itself becomes the main legitimation, especially if this productivity also brings improvement of material welfare for the direct producers. The original basis of capitalism, the exploitation of the productive labour force, is affected by the process of technological development, as Marx predicted.

Where technology becomes the crucial factor of production, a change in the relations of production (the relation labour and capital, or workers and machines) seems impossible without a change in the organization of science and technology. Those who pursue the socialization of the means of production cannot avoid



the problem of technology. It is obvious that this problem was still invisible to Marx in his analysis of pre-technological capitalism. In hindsight there remain a few gaps in the work of Marx in this respect. The class theory of Marx and his economic and political theories about the transition from capitalism to socialism are insufficient for an analysis of late capitalism.

An important notion in the theories about the relation 'man and nature', 'labour and capital', 'classes and the development of production power', is alienation. Alienation as a result of the capability of the knowing subject to objectify is prevalent in the works of Hegel. Marx continues to use the notion of alienation by introducing the concept of alienated labour. Moreover he turns the Hegelian scheme upside down and states that alienated labour is the cause of alienation in general. This means that alienation in the production process pervades all layers and institutions of the bourgeois industrial society.

Dewey does not go that far. Alienation is a notion remarkably absent in Dewey's work, although it is possible to formulate the ideal of pure science in terms of alienation, but then it is an alienation of the scientist from the society where his knowledge is used for class interests (see above). The effects of technology

for the lower classes Dewey does not discuss, certainly not in terms of alienated labour.

Marx saw this alienated labour as a result of technological progress which in its turn is brought about by the division of labour. Alienation is not only destructive but also a precondition for future development of mankind. That is why the question whether or not industrial production is liberating, must be answered affirmatively according to the theories of Marx and Engels. Alienation as a result of the continuous rationalization is connected with the development of private property and political institutions in the form of the state or using a different term, the bureaucracy.

## 2. Technology in the Critical Theory.

In my view the 'Frankfurt School'<sup>\*</sup> stands as a model of a whole stream of technology critique which can be found on the European continent.<sup>\*\*</sup> It is a critique which tries to uncover the ideological aspects of science and technology, and which signals, because of this 'technological ideology' an impoverishment of thought and culture.

This stress on ideology is important when we want to discuss the possibilities of democratic control of technology. If there is an unassailable ideology present which favours indiscriminate development and application of technology then the notion of control becomes meaningless.

Before I depart on a discussion of the for this work important elements of thought in the Frankfurt school, I would like to make a few remarks about Marx and Engels. They are important because the Frankfurt School has the works of Marx and Engels

<sup>\*</sup> The Frankfurt School (Frankfurter Schule) was founded in 1928 as the Institute for Social Research (Institut für Sozialforschung). The most important thinkers of the Frankfurt School have been Max Horkheimer, Theodor Wiesengrund Adorno, Erich Fromm, Herbert Marcuse and their heir Jürgen Habermas.

<sup>\*\*</sup> This stream includes among others influential writers like Jacques Ellul and Michel Foucault.

as departing point. Further Marx and Engels stress the dynamics of what they call the capitalist mode of production in terms of technological development, aided by science, and the exploitation of labour, expressed in class-struggle. Marx even predicts in the *Grundrisse* that it is possible that labour gets replaced in a fully mechanized production. <sup>8</sup>

The development of capitalism has a number of effects. The first is that modern methods of production, i.e. division of labour and production planning, alienate the worker from his product, and also from his fellow worker. This alienation is, so to say the solidified effect in the working circumstances of modern industry, of the increasing individualism of capitalist society, with its liberal ideology.

Nevertheless if a new society is going to come about, after capitalism, then it has to make use of the developments of capitalism. Marx uses the german word 'aufheben' which means at the same time, to abolish as 'to lift up to a higher level'. The at the same time abolished and uplifted capitalist society, makes use of fully developed methods of production which have to be industrial. It also gives the possibility for the human being to emancipate himself, and to become fully developed. This ideal of the fully developed human being is of extreme importance for the

thinkers of the Frankfurt School, who want to analyze, further than Marx, the inhibiting ideological consequences of modern industrial capitalist society, where science and technology seem to replace labour as the direct force of production.

The interests of the Frankfurt School were, inspired by Horkheimer, directed towards a neo-hegelian interpretation of historical materialism. This resulted in the publication of studies in social philosophy. A social philosophy which, according to Horkheimer, should be undogmatic and not part of the search of one indubitable truth, should be a materialistic theory 'enriched' with empirical research.

As with other marxist-inspired theories in the twentieth century,<sup>9</sup> the study of the 'superstructure' was stressed in the works of the thinkers of the Frankfurt school. They want to deal with the 'superstructure' from within as a form of self-critique.<sup>10</sup> The traditional politico-economic Marxist approach was considered insufficient as a basis for the explanation of the success of Fascism and Nazism and the conformism of the workers after the Second World War, especially in the United States.

A re-orientation was based (i) on an integration of psychoanalysis and the relation man-nature and, (ii) the study of the role of the

development of the forces of production (in a Marxist sense) in western civilization as the main aspect of the development of the relation man-nature\*.

Horkheimer and Adorno observe that in the period after the First World War a polarization took place which urged intellectuals to take a position at the side of capitalism (Schumpeter and, notably after the Second World War, Popper) or at the side of communism (Lukács). According to Horkheimer, neither direction gives sufficient opportunity for the development of a humane society. Taking a position implies that intellectual labour is made subject to politics. Horkheimer and Adorno separate themselves explicitly from taking an explicit position. Their political practice, as they themselves saw it, was the continuous critique of the modern industrial society. It is against

\* The first can be found in the collective project 'Studies about Authority and Family' (Studien über Autorität und Familie), which later resulted in 'Eros and Civilization' from Marcuse and the works of Fromm, and in their quite violent disagreement. Fromm denied the validity of the concept of 'death-wish' (Thanatos) from Freud, although he agreed that Freud rightly placed the emotional drives outside social control. Horkheimer, Adorno and Marcuse found in the concept of the death-drive an expression of the destructive traits of modern man. Marcuse accused Fromm of entertaining the illusion that *happiness is possible* in present society.

The second element can be found in 'The Dialectic of Enlightenment' (Dialektik der Aufklärung) from Horkheimer and Adorno and 'Minima Moralia' from Adorno. Both elements, however, penetrate the whole of the work of the Institute under the leadership of Horkheimer.

this background that they place the notion of 'theory as the only possible praxis'. In this chapter I will try to deal first with ideology in general then give an account of their contents in a sympathetic way. After that I will express my criticisms about them.

### 2.1. Elements of Ideology.

Very often the control over human beings is seen as a process that proceeds externally by force and internally via the internalised norms and behaviour patterns. The control over human beings as an external process does not require in this context more explanation. But the control over human beings through internalised norms and behaviour patterns does.

It is the problem of ideology. Especially in Marxist and Marxist oriented studies the problem of ideology is seen in terms of control. It is the control of the ruling class over the proletariat. Elster in his *Making Sense of Marx* says about ideology in the Marxist sense the following:

One ... definition is to consider the ideological as a function, more specifically the function of providing legitimacy for the existing state of affairs or of the rule of a given class... The ideological... would be the non-coercive equivalent of the political, if the latter is similarly functionally defined in terms of repression. This would enable one to speak, for instance, of the

"ideological functions" of the representative political system, which by creating an "appearance of independence" or a "safety-valve" to let out steam, disguises the fact that it is basically a tool for the ruling class. Or again one might point to the ideological functions of the formal freedom of the worker under capitalism.<sup>11</sup>

Ideology can mean much more than that. It can be explained in terms of the absence of beliefs, or as *unconscious* beliefs. As far as the absence of beliefs is concerned, we enter an area of endless speculation which can never be empirically checked.

Taken to an extreme, an unconscious belief is a belief a person has but does not know about it. This is, according to Elster, clearly absurd. A belief is always known. But not so the reasons for the belief. It could be observed that, if a belief is always known one could list all his beliefs. This seems equally absurd. A belief is often nothing more than an assumption which becomes more clear when a person is confronted with a situation in which this assumption seems to apply. A technological orientation in society may be such an assumption, or give rise to assumptions or beliefs which explain the world in a technological or mechanistic way.

I do not want to enter in a psychological discussion about it, since I lack the knowledge and expertise to do so. But it is possible to avoid this by calling the underlying reasons for a



belief, a meta-belief. With a meta-belief I mean a personal, psychological or social disposition which make that a person is likely to accept certain beliefs and to reject others.

One of the first who attempted research in this area was Theodor Wisengrund Adorno, with his famous 'Berkeley-study'.<sup>12</sup> Ideology in this sense is not so much straightforward propaganda but an appeal to these meta-beliefs. An example of this is the Nazi-propaganda of the thirties and forties. They appealed to what can be called in a Freudian sense 'anal' personality traits. 'Gründlichkeit', discipline, order and a higher calling for the German people were used in this propaganda.\* The idea of a higher calling for the German people is clearly a belief which already existed before the Nazi-period. It was however not always present as a conscious belief but emerged, so to say, in people's consciousness from time to time.

Elster remarks about ideology as unconscious beliefs or attitudes that

this proposal is unappealing both on conceptual and methodological grounds. Conceptually, it does not seem to me that we have any clear notion of what it means to have an unconscious belief. Methodologically, the difficulties of finding out what beliefs people hold explicitly are so large that it would

\* These aspects are of course not typical German. Aside from the 'higher calling' they are cherished attitudes in our society for many reasons, certainly not all evil.

be ill-advised to take on the further task of identifying their unconscious beliefs, assuming that we knew what we meant."<sup>13</sup>

Technology as a basis for the formation of beliefs seems to be fruitful to explain what can be meant with the notion 'unconscious beliefs' or better the unconscious formation of beliefs or assumptions about the world. Let us look, in this respect, at an example about information technology, namely computer games. Joseph Weizenbaum, a well known computer scientist writes in the preface to the Penguin edition of his book *Computer Power and Human Reason* the following about computer games:

To understand the content of most computer games, one has only to sample the main stream of...television to know that it consists mainly of what would in German be called Unsinn, Bloedsinn, Wahnsinn, that is, nonsense, stupidity, and insanity. Inane so called situation comedies relieve the otherwise almost constant stream of violence... The mass of computer and arcade games present precisely the same fare translated, of course, to take advantage of the new medium. However, whereas the television viewer passively receives, the computer game player actively participates. In concrete terms, this means that, while the television viewer watches, say, U-boat commanders launch torpedos against "enemy" ships and shout with joy as their targets disappear beneath the waves, the computer game player launches torpedoes and himself experiences the thrill of the torpedo run. I almost wrote "the thrill of *killing*," and an important point hangs on this near slip of the pen: I dare say very few actual submarine captains experience *killing* in connection with pushing a button that initiates a torpedo's rush towards its target, nor do bombardiers in airplanes have that experience when they launch their bombs. Most human beings would be incapable of such actions if they were not able to maintain what physicians call a "clinical distance" from the ultimate consequence of their actions. A less euphemistic way of saying the same thing is that much intensive training in psychic numbing is required before an ordinary person can

launch torpedoes that sink ships or release bombs that vaporize people several miles below.<sup>14</sup>

I believe that the observations have some significance for the notion of *unconscious beliefs*. By 'psychic numbing', a phenomenon which may be quite unintended certainly as far as the average citizen is concerned, the 'belief' that ones actions have no direct harmful consequences for other human beings or that the ones harmed belong to an abstract 'enemy', is confirmed or fostered through these processes. I do not think that this 'belief' is an explicit conscious belief. I agree with Elster that the 'unconscious' is hard to determine. But without actually saying what 'unconscious' exactly is, we may approach the problem from another viewpoint and say, at least, that the basis for beliefs is not necessarily wholly conscious.

Again, I think that for the greatest part there is not necessarily even a conscious agent who tries on purpose to 'numb' people.\* The companies selling for instance computer games may have no particular interest in establishing beliefs among the citizens. They

\* It must be said that there are many computer games which are quite ingenious. Granted there are many of these games concerned with some form of warfare. They have lately (1988) become so advanced that they actually give some insight about the techniques of modern warfare. Without any accompanying understanding they may have the effects which Weizenbaum fears, but they may also enhance the average citizens understanding of certain aspects of what modern warfare is about, *given the existence of accompanying information*.

merely enter areas where they perceive a market.\* One of these markets, be it a small market, are rehabilitation centers for handicapped children. Some computer games help them to develop their movement capabilities.

I do not want to enter here in a full-fledged discussion of ideology in general.\*\* What is important, in my view, is that beliefs and attitudes of people can be influenced by the 'tools' or instruments they are using. In this sense technology influences human thought and beliefs, but does not do that in a way necessarily conscious for the subject.

Especially important where the ideological role of technology is concerned is the concept of reification (*verdinglichung*), first used

\* There exists a computer game called 'GUNSHIP' which is distributed by Microprose Corp. This game simulates, very cleverly, the behaviour of the McDonnell Douglas AH-64A Apache gunship helicopter. This helicopter is, so to say, an airborne tank, and can be used to destroy enemy tanks, bunkers, troops, etc. The battlefields that the player can use are Southeast Asia (Vietnam), Central America (Grenada, Nicaragua and Cuba), The Middle East (Lebanon) and finally Western Europe (To stop the red steamroller from the East). It leaves no doubt that someone who likes to play computer games also has to swallow quite a bit of what right-wing circles in the US believe about the world.

An interest in high-tech and exciting colourful and flashing computer games provide a basis to plant a belief. The real rationale for it is not present and is nowhere to be found. There is the meta-belief or attitude about war-games. Usually it comes with the belief that, since it is a game, no-one will be hurt. The excitement may well be a reason for young people to be interested in a career in the armed forces.

\*\* See Elster's *Making Sense of Marx* Ch. 8 for a quite complete discussion of Marxist ideology theory and possible objections against it.

by Lukács. Lukács uses the term 'reification' in *History and Class-Consciousness* in order to denote the false consciousness of the bourgeoisie and consequently the proletariat. The bourgeoisie has no interest in understanding the nature of capitalism (crisis) and its own limitations in time. In the words of Kolakowski, reification occurs: "In a society which subordinates production entirely to the increase of exchange value, and in which relations between human beings are crystallized in object-values and themselves take on the character of objects."<sup>15</sup> The concept of reification, as presented by Lukács, is problematic because it is tied to class-existence.\*

Weizenbaum signals a general mechanism which creates the illusion that technology is encompassing and cannot fail.

[T]he belief that an otherwise faultless and probably enormously powerful technique is cramped by some single limitation tends to lead the devotee to put effort into removing that limitation. When this limitation seems to him to be entirely computational, and when a computer is offered to help remove it, he may well launch a program of intensive, time-consuming "research" aimed simply at "computerizing" his technique. Such programs usually generate subproblems of a strictly computational nature that tend by virtue of their very magnitude, to increasingly dominate the task and, unless great care is taken to avoid it, to eventually become the center of attention. As ever more investment is made in cracking them, an illusion tends to grow that real work is done on the main problem. The poverty of the technique, if it is indeed impotent to deal with its presumed subject matter, is thus hidden behind a mountain of effort, much of which may well be successful in its own terms. But these are terms in a constructed context

\* Kolakowski's discussion in his *Main Currents of Marxism* Part III, is quite complete in dealing with Lukács notion of reification.

that has no substantive overlap with, or even relationship to, the context determined by the problem to which the original technique is to be applied. The collection of subproblems together with the lore, jargon, and subtechniques which crystallized around them, becomes reified. The larger this collection is, and the more human energy has been invested in its creation, the more real it seems. And the harder the subproblems were to solve and the more technical success was gained in solving them, the more is the original technique fortified.<sup>16</sup>

In this way technology may influence decision-making about technological applications for at least two reasons:

1. technologies are maintained because of the large investments that have already gone into them. Giving them up is then costly and leads to the loss of prestige of their promoters.
2. They create their own world of thought (lore, jargon, etc.) where they can be successful *in their own terms*.

The ideology of technology is not merely the result of the activities of a 'superstructure' but comes also very much from technological practice itself. If we look at Weizenbaum's analysis then we can make the distinction between 'cold' and 'hot' theories of cognitive causation. Elster uses this distinction in his *Making Sense of Marx* in order to find micro-foundations for the theory of ideology, something which he doesn't find in Marx.

The 'hot' theory of attitude foundation and attitude change explains attitudes by some motivational or affective drive. The

'cold' theory explains distortions of attitudes by a number of failures in the cognitive development process. The 'hot' and the 'cold' theories of attitude formation are respectively proposed by Leon Festinger and Amos Tversky.<sup>17</sup>

In our case the use of the 'cold' theory is obvious. As far as the formation of attitudes and beliefs is concerned the use of, for instance, computers can in Weizenbaum's sense be explained with the 'cold' theory. The use of computers leads to a failure in the cognitive development process of human beings because it does not only strengthen their belief in techniques which, as all human creations, are fallible, but also strengthens their belief in the quantifiability of the world and everything in it, which is an aspect of reification.\* This cognitive belief presents itself in

...the tendency to believe that causal relations that are valid locally, or *ceteris paribus*, retain their validity when generalized to a wider context. More specifically, there is a natural cognitive tendency to believe that statements which are true from the point of view of *any* individual agent remain true when applied to the totality of *all* agents.<sup>18</sup>

It remains to be seen if the influence of technology on human thought always works this way. I will deal with this in the following chapters.

\* An example of a 'hot' element in the formation of attitudes can be found in the belief that the interests of the bourgeoisie contains the interests of all classes in capitalist society. It is for the bourgeoisie, according to Elster, an example of wishful thinking which constitutes a motivational drive. *Ibid.*, p. 486.

I think that to connect these effects of technology on individual thought with the 'evil' intentions of the state in the service of a ruling class takes us perhaps too far. It would mean that there is a conscious design to influence the thoughts of citizens (belonging to one class or another). I do not believe that such designs are there. It may be so that the way science and technology are presented to us actually confirm the status quo. That means that the cognitive factors operate in an conserving way, but that remains to be seen.

Cognitively based ideologies do not always operate to the benefit of the ruling classes. We may expect them to do so if the victim is an exploited class, but not when the exploiters themselves are subject to the same mechanism. Hence it is not true as a general proposition that ideologies - in the sense of beliefs derived from the interest or the position of the believer - always work to the benefit of the economically dominant class and the existing relations of production of society.<sup>19</sup>

Therefore Weizenbaum's belief that on the contrary modern technology (and science) work solely in the interest of ruling elites of classes (he is not very precise on this point) is not necessarily true.

## 2.2. The roots of technological rationality.

Two important books about technological rationality are *Dialectics of Enlightenment* and *Eclipse of Reason*. They are also



the main sources of inspiration the Frankfurt School, as mentioned above. Both works deal with the contradiction of a society where the philosophy of enlightenment is dominant and where the values of liberty and equality are considered as of supreme value. These values are not only considered in their political shape but also in the shape of a direct attack on inherited myths from earlier historical periods and religious ideologies.\* The philosophy of enlightenment is also qualified by a strong ideology of progress. The ambivalence of the idea of progress, i.e. the coincidence of progress in the form of technological development with the increasing dehumanization of society is the subject of these studies.

Horkheimer and Adorno want to de-mystify present society with enlightenment means. They state that they do not have any doubt that the attainment of freedom in society is inseparable from enlightenment thought.<sup>20</sup> On the one hand they choose for a continuation of enlightenment thought and on the other hand they see in enlightenment thought and the institutions that are

\* It is clear that the differences between the various enlightenment philosophers is discussed. Horkheimer and Adorno do not deal with the question if it is possible to use the term 'enlightenment philosophy' for a period (from the 16th till the 19th century) where a large variety of philosophical views were developed. On the whole they concentrate on what they see as the most important aspects of philosophical thought from this period, rationality, materialism, anti-clericalism, liberty and equality.

connected with it the roots of destructive forces in modern society.

### 2.3. The notion of enlightenment.

For Horkheimer and Adorno, enlightenment is the attempt to arrive at the de-mystification of the world. This can be reached by progressive thought in the sense that man realizes himself as 'lord of creation' and in that process loses his fear of the world. It is progressive also in the sense that through the discovery of the secrets of nature practical knowledge can be accumulated which gives power over nature. The results are increasingly greater technical and communicative possibilities.<sup>21</sup> The de-mystification of the world is also the battle against animism which sees in every phenomenon a conscious force, like spirits and demons or the substance of gods.

Contrary to these animistic thoughts, enlightenment is nominalistic. Utility and calculability without any illusions or delusions are essential in this.<sup>22</sup> Enlightenment does not stop with the battle against mythology, but also devours her own children. Early 'enlightened' thinkers like Plato and Aristotle are disqualified because of the metaphysical basis of their thought. The more modern conflict of Universals, which takes place

between positivism and neo-thomism, will be dealt with later when we discuss the notion of rationality.

The old myths are seen as anthropomorphic projections into nature.\* The method of enlightenment is the proposition of general laws in which all particular phenomena are expressed, without connecting them to anthropomorphic qualities. Its instruments are formal logic and a quantitative way of explanation. That which is qualitatively unequal is reduced to abstract values, in such a way that it can be counted. This is what Horkheimer and Adorno call control by means of the equivalent. Equivalence is only an illusion because every reduction declares only a part of a phenomenon as true, only that part that lets itself to be counted. Control through equivalents presents itself in the bourgeois society in the form of the encompassing principle of exchange of goods, to which all human relations are tendentiously reduced. In this way a new mythology is created, the mythology of positivism.

Nature is made objective. It is an objective that can be controlled by human beings, who at the same time are alienated from it. The control over nature is not only paid for with alienation. In

\* These methodologies are in fact the products of the powerless of the unenlightened mind in the face of nature.

order to gain this control the organization of human beings is necessary. The price paid for this is that the human being is alienated from himself.<sup>23</sup>

That which happens has no value in itself, the result is important and that only in repetition. The effect of quantification is equalization. This equalization under the dominance of the abstract turns everything in nature to something repeatable. According to Horkheimer and Adorno this last can be clearly seen in modern industrial production which is taken as a result of the enlightenment movement.

Positivism has, as an aspect of enlightenment, like myths a tabu. It is the same tabu as the myths, because it is the thought that outside the myth there is nothing else to be found. The proposed description of reality is the only true description.

#### 2.4. Rationality as central to enlightenment.

It follows from the above that enlightenment thought resists speculative, emotional and intuitive thought. Reason is the only means by which truth can be found.

Reason, however, is a broad notion. But an important part of reason is rationality. Arrived in this stage of his analysis, Horkheimer makes a distinction between means and ends, in his view respectively subjective and objective rationality. This distinction is comparable with the distinction between formal and material rationality which Weber introduces.<sup>24</sup> The point for Horkheimer and Adorno is that nowadays objective rationality is sacrificed to subjective rationality. Ends are not any longer objective but the result of a conflict of interests.<sup>25</sup>

The original sources of objective rationality, tradition and religion are replaced with a rational methodological philosophy. The Catholic and rationalistic philosophy agree as far as they see rationality as objective. Protestantism and empiricism deny this objectivity respectively through the doctrine of "Deus absconditus" and the implicit (later explicit) notion of empiricism that metaphysics is only concerned with pseudo-problems. According to Horkheimer and Adorno, with the philosophies of Berkeley and Hume the process of enlightenment has reached the stage where the notion of reason itself is disqualified. Notions like reason, spirit and cause are opposed by Berkeley and Hume because they express a kind of mythological meaning.

Traditionally the church was the institution which supplied social norms in every field of conduct, also in politics, and legitimated these norms by appealing to theology and revelation. Through the attack on religion Hume provides a basis for a rational theory of society. Kant extends the notions of Hume in a bourgeois ethical theory based on reason. This theory forms the rational foundation for the struggle between the bourgeois class and the feudal system. Kant, however, denies the skeptical conclusions of Hume, which imply the impossibility of a rationalistic metaphysics.

The political implications from the rational metaphysics are nationalism in place of religion. This goes together with the emergence of private interest, the essence of the liberal ideology. The original principles of justice, happiness, democracy and private property serve as the rational basis of politics. Later the autonomy of reason disappears. Purposive rationality which puts the possibility to operationalize in the place of truth becomes the ruling principle. Language is reduced to a tool serving the intellectual element of production or the manipulation of the masses. Horkheimer and Adorno conclude that the connection between value and reason is severed. The only remaining authority is science, which rests on quantitative facts. Probability-

accounting is the best example of this. Qualities in the sense of experience, meaning and sense are lost.

Horkheimer and Adorno introduce Lukács' notion of *reification*. All human activities and the results coming from it are reduced to commodities. Only things which generate income, like productive labour, are important and enjoy respect. In itself nothing has value.

The philosophy which is the basis of this is pragmatism.\* According to Horkheimer, pragmatism does not distinguish between facts which confirm a judgement and the steps necessary for arriving at a verification. Pragmatism is an a-historical philosophy, which means that the present meaning of a proposition and its future verification are treated as being equal.

In pragmatist philosophy science and technology have value only when they contribute to the production process. This is so because pragmatism gives action an absolute value. The experiment is the only kind of experience which counts. That is why all thought is reduced to the doctrine of control of the natural sciences. The pragmatist philosophy is for Horkheimer and Adorno 'scientism' and that means that it is a combination

\* Horkheimer and Adorno attack here Peirce, James and Dewey.

of industrialism and conformism.\* The satisfaction of the subject becomes a criterion of truth. The contradiction between satisfaction and truth is denied. Dewey is taken as the example of this thought. Horkheimer thinks that Dewey identifies the fulfillment of the desires of the people with the highest aspirations of mankind.<sup>26</sup>

Horkheimer and Adorno admit that Dewey also saw the possibility of distinguishing between subjective desires and objective desirability. It cannot be possible that the successful aim to satisfy subjective desires is the only measure of intelligence.<sup>27</sup> If not then the subjective formalized truth turns into stupidity, as Huxley in his novel *Brave New World* demonstrates clearly. For Horkheimer and Adorno, stereotypical ideas replace real thought.

Thought reduced in this way and directed towards industrialism and conformism has lost its critical position in relation towards class-society. Aside from the socialist overtones this statement has, it follows that democratic control of technological development in industrial capitalism is not possible.

Only specific forms of class-societies which are in contradiction with industrial production and the division of income necessary

\* Horkheimer, *ibid.* p.56-7.



for an industrial society are rejected. Horkheimer and Adorno thought that a production apparatus functioning on the basis of private property together with an owning class is not in contradiction with pragmatism and with positivism and neo-thomism.

### 2.5. Alternatives.

One of the points of departure of the Critical Theory, of which Horkheimer and Adorno were the most important representatives, is that it is neither possible nor desirable to present a picture of an alternative society. In this the Critical Theory is in line with the viewpoints of Marx, who also refused to give a recipe for the attainment of the communist society. The Critical Theory can and wants to point out only that what is wrong in the existing situation. This theme is adopted from the Old Testament: 'Do not make a picture of your God...'

...we can describe the bad, but not the absolute right. People who live in this state of consciousness are related to the critical theory.<sup>28</sup>

Political action is viewed with great reserve by Horkheimer and Adorno. The use of philosophy for purposes of propaganda is seen as bad, even when it happens with the best intentions. According to Horkheimer one can see philosophy as a commandment against commandments.<sup>29</sup>

The only honest praxis is for Horkheimer and Adorno theory, which by referring to things with their real names has to uncover the negative in the existing world, in the form of ideology critique. Philosophical theory, however, cannot realize the humanistic position, but can function as the memory and consciousness of mankind. In this form philosophy can be a corrective of history,

...and thereby help to keep the course of humanity from resembling the meaningless round of the asylums inmate's recreation hour.<sup>30</sup>

It is in any case essential that enlightenment thought becomes conscious of its own regressive moments. Therefore Horkheimer ends *Eclipse of Reason* with the following words:

If by enlightenment and intellectual progress we mean the freeing of man from superstitious belief in evil forces, in demons and fairies, in blind fate - in short, the emancipation from fear - then denunciation of what is currently called reason is the greatest service reason can render.<sup>31</sup>

Although Horkheimer and Adorno do not recognize any absolute value they appeal to the old humanist and liberal values like liberty and equality. The supreme good for Horkheimer seems to be the independent thinking individual as "the consummation of a fully developed society".<sup>32</sup> The disappearance of moral consciousness is for the critical theory a great evil.

Horkheimer distanciates himself from revolutionary action, in later works, as is demonstrated in the following citations:

...after the downfall of national-socialism the revolution will become again a new terror, and lead to a terrible situation, in the countries of the west. It is more valid to maintain certain moments of culture, that what is to be valued, like for instance the autonomy of the single person, the meaning of the individual, his differentiated psychology, without loosing progress.<sup>33</sup>

The liberal ideology is apparently not valueless. The revolution would do away with liberal values and instead greatly arrest the growth of the individual.<sup>34</sup>

Therefore radicals are not to be trusted. Their revolutionary perspectives make them blind to the possibilities that present day society still has.<sup>35</sup> True revolutionaries are according to Horkheimer very close to conservatives.<sup>36</sup>

The *Dialectics of Enlightenment* and *Eclipse of Reason* are the marks of a discontinuity in the critical theory. The work of the Institute for Social Research was inspired in the thirties by a belief in the eventual unification of critical theory and revolutionary practice. In both of the works, which appeared in the forties, this possibility is much doubted like the possibility of a synthesis of different established social-scientific disciplines.<sup>37</sup> The position taken by Horkheimer in 1970 can be seen as a consequence of this discontinuity.

Except the rehabilitation of humanist values (which are not to be turned into a system) and the prohibition of prohibitions, there are almost no practical indications in the works discussed here. It must be said, however, that the critical theory has had some political influence after the war. Especially Adorno has had an important part in the discussions about education in Germany and the conscious assimilation in it of the fascist past of Germany, through his pleas for 'education towards adulthood', although it is especially the fascist past of Germany that still poses problems to the German education system. Now, it is part of a critique of technology that exists on the European continent, and to an extent in the United States, in the writings of Joseph Weizenbaum, to whom I will return later.

It is clear that, according to the critical theory, reification and the abuse of nature must be eliminated. Mankind has to reconcile nature and rationality.<sup>38</sup> How this is to be realized is far from clear. Except in the case of the philosopher who should tell the truth and name that what is negative in society. Art and especially music, about which Adorno has written much, seems the only isolated realm where the reconciliation of nature and reason can come about.\*

\* Ibid., p. 127.

## 2.6. Problems with the views of Horkheimer and Adorno.

The central notions in the works of Horkheimer and Adorno are *enlightenment* and instrumental reason. Technology and science, the notions which are important for an analysis of the effects of information technology, are important elements of these encompassing notions.

Human history can be seen as the battle of man against nature in order to gain his means of existence (in the broadest sense). Knowledge of the processes of nature and the art of the construction of tools are the means with which this battle can be fought. If mankind starts to control nature, the era of 'enlightenment' begins as the liberation from the forces of nature.

The process of the development of tools and the process of learning how to use them in the service of self-preservation is the process of the development of instrumental reason. The introduction of instrumental rationality is at the same time the introduction of the division of labour, of social differentiation. The first forms of this difference are democratic tribes who know 'enlightenment' in the form of animistic mythologies directed by

'sorcerers' or 'medicine-men' (these could be seen as the organic\* intellectuals of this form of existence).

The next step is the transfer of animistic to religious mythologies, the emergence of the rule of priests. From the animistic pantheism, oligo-theism and mono-theism are developed. Monotheism in the form of christianity plays an essential part in the rationalization of the 'western' world. The process of enlightenment is completed with the rise of modern science.

In the place of spirits, gods and revelation the laws of nature are placed, which do not seem to have anything mysterious anymore. They are the fundamentals of purposive-rational thought. Scientific thought starts in classical history and develops in the middle ages via the clergy, in order to come to full development in the age of capitalism at the end of the nineteenth century. It is promoted to one of the most important forces of production after the completion of the industrial revolution.

Enlightenment thought makes short work of all mythologies, gods and metaphysical 'absoluta'. These pillars of tradition formed severe limitations for the development of capitalism. Capitalism recognizes only the rationality of capital-accumulation and

\* This expression is used by Gramsci.

efficiency, the rationality of the individual oriented towards utility-maximizing, and destroys objective rationality.

Liberalism still knew, as pioneer of capitalism, absolute values like liberty and justice. In the administrated capitalism of today, Horkheimer and Adorno do not see these values anymore, because the economic basis of the autonomous individual is lost.

The increasing scale of the modern firm and the concentration of capital are for a large part responsible for this. It is remarkable that where Schumpeter sees the inevitable emergence of socialism, quite peacefully as a result of industrial bureaucratization, Horkheimer and Adorno see the continuation of a class-society and the downfall of true culture and morality.\* As far as the continuation of capitalism is concerned Horkheimer and Adorno have been right and Schumpeter wrong.

Instead of objective goals as measure of rationality the power-struggle between powerful companies and states has become a determining factor. The result of this struggle is defined in rational terms. In this way the cycle of enlightenment is closed: enlightenment, which destroys myths, has become a myth itself.

\* It must be kept in mind that Schumpeter did not see socialism as particularly liberating. Perhaps on the contrary. But socialism would emerge as an indirect result of entrepreneurial activities and the consequent bureaucratization of the economic sphere.

In the name of reason productivity, wage-labour, efficiency, consumption and planning became the new gods of humanity.

The control of nature and connected with it material welfare has cost the freedom of the individual and the alienation of man towards nature, according to Horkheimer and Adorno. The difficulty with this statement is that it implies the idea that mankind has known times in which there was more freedom and less alienation. This is very doubtful. It is clear that the rigid systems of belief in the middle-ages, which legitimized the feudal system, were not exactly very liberating. Ignorance, strong religious ideologies (stronger than almost any ideology today), held mankind, not only in the west, in its bonds.

This observation does not absolve us from a critical evaluation of enlightenment thought, but the bleak picture painted by Horkheimer and Adorno, although they state in some places that their views are not, is very pessimistic and seems to endorse romantic conservative ideals which are, of course completely in line with Hegelian thought. As an example we can take the observation that the loss of individuality and the conformism of the individual (however this may sound contradictory) is the result of the disintegration of the family. This is set against the



compulsion to adaptation of the group, which starts in school, and becomes the most important mechanism of socialisation.

In civilizations and places where the (extended) family is still most important we see that individualism is not very far developed and that it is just there that all kinds of religious and political ideologies reign unchecked. The only civilization that allows, at least in the 'democratic' countries, critique of itself is just western capitalism. It is exactly in these countries that individualism is not only an ideology but can be seen in reality among all the foolishness of 'shining white teeth' and deodorants. True, there is the ideology of checks and balances and pluralism, but in any case it potentially checks the emergence of totalitarian ideologies which also may be the result of what the thinkers of the Frankfurt school imply\*.

Enlightenment thought produces rational institutions like industry, universities and the modern state and the rational notion of science founded in formal logic. According to Horkheimer and

\* See for instance the essay by Herbert Marcuse *Repressive Tolerance* (in Wolff, Barrington Moore jr. and Marcuse *A Critique of Pure Tolerance* Boston, 1970 [1969], p. 120.) where Marcuse proposes the restraint of the liberties of 'the right' and intolerance towards the principles of bourgeois society in order to bring out true freedom. Whatever critique on bourgeois society there may be, to me this seems the exhortation of the devil with the help of Beelzebub. For it is necessary then to establish a dictatorship, a totalitarian system, which redefines freedom and forces everybody in the true 'humanistic' education (p.122).

Adorno, the rationalization process destroys the traditional institutions and with it the traditional (mostly religious) values. The only orientation that is left for the individual is the value of self-preservation, i.e. adaptation to his environment.

Subjective rationality is based on the positivist notion of science. This means that truth, towards which subjective rationality is oriented, is made equal to the application of a set of formal methodological rules on objects regarded as given.

Horkheimer and Adorno try to make visible the suppression of the individual in productive labour as the product of social relations of power and legitimated as determined by technological necessity (based on scientific truth) of a centralized apparatus of production.

It can be said that this is only partly true. Nowadays (1989) there are strong movements towards the decentralization of production, made possible of exactly this technology based on scientific truth (development of micro-electronics and computers which give possibilities to small specialized firms and also the production of necessary goods on a smaller scale). This does not mean that the worker is through this liberated from the treadmill of capitalist

production, but a large part of the alienation of labour is and will be reversed through this process.

In the sphere of consumption, in as well as material as cultural consumption, the seeming freedom of choice gives a false feeling of individuality, which compensates the objectification, reification and atomization of production. Again there is much to be said in favour of the analysis of Horkheimer and Adorno, but again it is only very partially true. It is true of the soulless television series that for instance show us the life of decadent Texas oil families, or unrealistic police adventures against criminals and communists. But on the other hand a BBC Shakespeare play may open a rich world for those who have never encountered Shakespeare before. Again technology opens possibilities of choice to an extent that conformist ideology is no longer in control of all channels of mass-media (like local radio and TV-networks which often give access to critical groups, like squatters in The Netherlands, Greens in Germany, Communists in Italy, etc.). The attempt to control them in western democracies proves to be an exercise that is too expensive for the establishment. It remains true that there is no direct contact between producers and public, which exists in the theatre, but to me this alienation is a small price to pay, especially when theatres are still accessible.

Adorno tries to analyse culture industry with the aid of the Marxian theory of the fetish-character of commodities. According to Habermas the Marxian tools of the labour-value theory are not valid for the analysis of mass-media. These tools do not replace the commodity of communicative conduct but are a one-way medium.<sup>39</sup>

The general objection against the *Dialectics of Enlightenment* and *Eclipse of Reason* is that neither of these works is based on a true historical analysis of social developments. On the basis of partly theoretical interpretation of the development of enlightenment thought, the authors give a totalitarian view of the development of late-capitalist social relations.

The chapter about the culture industry is very much a product of the period shortly after the war. The rightly signalled problems are made absolute. It is not true that our era is only an era of degeneration in relation to other periods. It is also not very likely that earlier periods had higher cultural standards than ours.

So called 'higher' culture has not disappeared, but has become incomparably more accessible than ever before, and is undoubtedly enjoyed by more people: while it is highly unconvincing to argue that its dramatic formal changes in the twentieth century are all explicable by the domination of exchange-value.<sup>40</sup>

So, what misery the dialectics of enlightenment has brought us, if we have to believe Horkheimer and Adorno! The hopelessness of the situation as they see it is expressed in an aphorism of Adorno: "The whole is that which is false".<sup>41</sup>

Some years after the Second World War he writes:

After thousands of years of enlightenment panic is released over mankind, whose control over nature as the control over man, leaves behind the horror of what people have to fear from nature.<sup>42</sup>

These lines express the horrifying experience of fascism and total war, which has a central place in the works of Horkheimer and Adorno. Fascism is not seen as an exception but as the direct result of enlightenment thought. This traumatic experience does not leave much room for a real analysis of the rise of totalitarianism, hence for the development of possible remedies.

The absolute pessimism of Horkheimer and more so of Adorno is expressed in statements that laughter is, or has become, false. That laughter is a deception, an expression of a false society.<sup>\*</sup> The critical theory, we can find it back again in Marcuse, implicitly forbids enjoyment, happiness and feelings of satisfaction.

<sup>\*</sup> The monk Jorge in *Il Nome della Rosa* from Umberto Eco defends very much the same position. But this position is placed in the light of the true faith, which regards the world as a vale of tears where only religious devotion, for those who know, but not laughter has a place.

These emotions are the products of a false society, they mean that the one who feels them agrees with this society.

The implication is that mass-culture has entered the innermost thoughts of the subject. If that is true, then there is no hope. It is exactly because of this that Lukács invented the name 'Hotel Abgrund'.

In our period industrial man is clearly re-evaluating his own society. The values of commercials, propaganda and ideology are not anymore accepted without criticism, both in industrialized capitalist and the once communist countries. The citizen has discovered that in some respects he is *not* free and becomes disobedient. These possibilities are entirely overlooked by Horkheimer and Adorno, in their very elitist considerations.

Together with De Sade and Nietzsche they did not see that bourgeois society can summon other forces more rational than itself in the sense of the realization of alternatives forces which attempt to lift reason to a higher level. The bourgeois society has room for all kinds of forces not specifically tied with the interests of industry and bureaucracy. Therefore their critique of pragmatism is wrong. The thought that pragmatism identifies truth and satisfaction is plainly not true. Dewey, and also his

predecessors Peirce and James, have never stated such a thing and neither does it follow from their theories.\*

Through the ever increasing stream of information which can be freely generated, and *is* generated by those who take an interest in the fate of mankind, people can be influenced to act in favour of the preservation of life, for the enhancement of development of the individual but also of whole groups or countries. This potential is demonstrated quite often, paradoxically by using sometimes the same advertisement techniques as industry uses. This is not contrary to pragmatist views, on the contrary it can be argued that it is the right use of these *techniques*.

\* What is true is that they, especially John Dewey, have propagated a rational development of technology and also of society as a whole by means of rational and scientific methods. One can criticize this by saying with Horkheimer and Adorno that this leads to reduction of consciousness about society in particular and human life in general. Nevertheless, it can also be argued that science and technology have so far been successful as forces of production. The only thing Dewey wants to do is to use these forces to eliminate poverty and ignorance. If that is an evil goal what is it that Horkheimer and Adorno want?

What Dewey shared with the Marxists was their critique of capitalism, though on different grounds. Certain parallels between the works of Marx and Dewey may be drawn. However, the style of Dewey's works is less polemic. On the one side his work expresses the strong conviction that 'negation for the sake of negation' is in the long run not sensible. Which is not the same as saying that 'negation of negation', a phenomenon in positivism much criticized by the Frankfurt School, takes place.

Dewey does not present a blueprint for a future society, but states that education may help to establish the necessary consciousness needed for the construction of a better society. Science and technology are the instruments through which this can happen, but the attitude which determines the use of them is more than science only. John Dewey *Experience and Nature* (1925), in *The Later Works, 1925-1953*, edited by Jo Ann Boydston, Carbondale, Ill., 1981, p.28.

These forces could be the drive to self-preservation in a higher sense. The arguments used for mobilizing the population for altruistic goals are for a large part moral. Only a small part of the considerations to act or help are inspired by selfishness. Reason which is also the basis of thoughts about alternatives is possibly closer tied to morality than with its elimination.

I have dealt with Horkheimer and Adorno because they are seen by many, not only philosophers and social scientists but also others as we shall see later, as important in relation to the problem of technology and society. And it can be rightly maintained that they point at dangers concerning this problem. The whole discussion shows however a disastrous lack of practical proposals. Horkheimer and Adorno recognize this, but choose to be only abstract and theoretical. In order to do something about the control of technology and its use for the benefit of mankind we have to look at a lower level of abstraction in order to arrive eventually at policy proposals.

Before we do that let us first look at a more pragmatical oriented thinker, Jürgen Habermas. I believe that his thought about technology and society give possibilities for a critical discussion which may give us clues as to what kind or use of



technology is beneficial and increases human possibilities and control and which not.

### 2.7. Habermas and the Ideology of Science and Technology.

The latest representative of the Frankfurt School is Jürgen Habermas. His views have been and are still influential in the field of technology and society. That is why I think that it is necessary to deal with his views, especially because they have consequences for the later discussion of privacy, democracy and the use of information technology.

### 2.8. Rationality as political power.

Habermas takes position against Marcuse<sup>7</sup> who thinks that a new constellation in relation to the forces of production is established: Scientific thought leaves the critical standpoint it had in relation to the legitimation of the relations of production and becomes itself the basis for a new legitimation.

<sup>7</sup> In order to explain Habermas's views on rationality, science and technology, a brief discussion of Marcuse's theories is necessary. Habermas has developed much of his thought in a critical discussion with the works of Marcuse. The theories of Marcuse are important because he developed and in certain cases restated the theories of Horkheimer and Adorno. Habermas is of interest as a contemporary thinker who tries to develop the tradition of Horkheimer and Adorno via the theories of Marcuse.

Science and technology penetrate subconsciously and unintended thought and conduct in society.\*

Habermas objects that Marcuse is not only aiming at a new theory of science but a fundamentally different methodology of science. This new science should then not be placed in the functional cycle of instrumental conduct. Then a new rule should be established which is not repressive but liberating. This alternative science contains a new technology which is *not* instrumental. This can only happen, when science is not a single historical project, in which only one design is possible. For Habermas it is clear that, even if technology can be based on a design, it must be based on a project of the human race *as a whole* and not on which can be superseded historically.<sup>43</sup>

\* Marcuse, developing the thoughts of Horkheimer and Adorno, states that the process of rationalization in Weber's formulation is not rationality in general, but a specific form of political power. The notion of technological reason is itself ideology. Or, in other words: it is not that the application of technology is a sign of power, but technology itself is power. Technology is a socio-historical project. In it takes place the projection of what society, and the dominant groups in it, wants to do with people and things.

The existing relations of production and their development are presented as a technologically necessary form of organization of a rational society. In this we see the double aspect of Weber's notion of rationality. (i) On the one hand rationality is nothing more than the critical measure of the situation of the forces of production. Through this critical measure historically backward relations of production can be eliminated. These relations of production are experienced as an objectively superfluous form of repression like feudal relations, slavery, etc. (ii) At the same time rationality functions as the apologetic measure with which the same relations of production can be legitimized in an institutional framework (The process of rationalization signalled by Weber is not only the process of change of social structures but also rationalization in the sense of Freud: a cover-up of the real motive, i.e. the maintenance of an objectively old-fashioned rule). See Herbert Marcuse *One Dimensional Man*, Boston 1964, p.157/8.

Marcuse wants to de-objectify nature, which means that nature is attributed with subjectivity and is therefore endowed with the possibility of communication. This view presupposes an organic view of society and an implicit integration with nature. The unity that humankind has with nature makes that communication within the human race, is at the same time communication with nature as a whole. The present state of affairs is marked by a restraint of communication and so by the impossibility to communicate fully with nature<sup>44</sup>

What is concerned here, is a totally different structure of conduct, symbolic interaction, differentiations of purposive rational action. Both designs are projections of speech and labour, projects of the whole of mankind not based on the class-interests of a certain period, which is transitory.

A new science and technology are difficult to imagine because, like the old science and technology, they have to have a possible application. In other words they have to be operationalized to a certain extent. The difficulty is that Marcuse does not show what it means that the rational shape of science and technology - i.e. the rationality which expresses itself in systems of purposive rational conduct - extends itself to the historical rationality of a life-world.

## 2.9. The notion of rationality extended.

We find in the works of Habermas a more precise description of the notion of rationality, especially in relation to the works of Weber and of modern theories like game theory and decision theory. Technological and scientific conduct is placed in relation to these ideas.

Habermas uses the notion of rationality from Weber. He distinguishes two levels:

1. Rationality as conduct in economics, civil law and in bureaucracy. In this respect one can see a growth of that domain of society which is controlled by the standards of rational decision-making. The central problem is that as a result of industrialization, instrumental conduct penetrates other parts of life.
2. Social planning which is directed towards the establishment, improvement and extension of the systems of purposive-rational thought itself.

On both levels the organization of means and the choice of alternatives in relation to ends is essential. In general one can say that, when technology and science establish themselves in society,

the old ideologies disappear. Secularization and de-mystification are result of a growing rationality of social conduct.

Habermas discusses in his book *Theorie und Praxis* the relation of theory and practice in the European philosophical tradition.<sup>45</sup> He distinguishes four levels of rationalization<sup>46</sup>:

1. On the most elementary level, technological rationality in the strictest sense, techniques provided by science are used for the attainment of specific goals. Instrumental activity is rational insofar as it deals with the organization of means guided by technical rules based on technological knowledge. The information which is supplied by empirical science in the shape of laws is put in the place of traditional moral criteria and the rules which are developed in an unsystematic way in the arts and crafts.

On this level Habermas approaches what I called the restricted definition of technology. In the same time the connection between technology and the production process is made clear in the sense of the relation man-nature. There are methods to realize the material control over nature based on the natural sciences. The further elaboration of this is consummated at the higher levels.

2. When a choice has to be made between two or more technically equal alternatives, we need a higher level of rationality. Decision-making theory clarifies the relation between alternative techniques, and given goals on the one hand and value-systems and decision-rules on the other hand. It analyses in a normative way the possible choices from the viewpoint of a rationality determined by 'efficiency' of the choice. What is important is that what is concerned here is the form or shape of a decision not its essential cohesion and the factual results.

Values are no longer subject of discussion, because the discussion does not take place on the level of the establishment of a collective system of values by means of reason based on consensus, but through compromises or the combination of wishes and alternatives. Such a practice is related to the process of political decision-making in late-capitalism. For Habermas this demonstrates aspects of organization and rule in late-capitalism as we shall see later.

3. The third level is concerned with strategical situations. In such a situation there are two opponents whose relation is rational (in the sense of the definition of interests and goals and the means to defend these interests and attain these goals) and whose

conduct is supposed to be rational. Both partners act from opposite interests and their relation is one of competition.

This situation requires an even further rationalization. The conduct of the opponent cannot be predicted according to the laws of nature. Furthermore, there is always scarcity of information.

Game-theory explains the strategies which can bring this situation under control. Habermas, however, is not so much interested in the game-theoretical solutions of the problem, but in the technical compulsion that is internally determined by it and influences value-systems. The value-systems that remained out of consideration on the first two levels are now made relative in terms of the supreme level of self-maintenance.

4. The fourth level is concerned with the concept of a self-regulating (cybernetic) organization of society. Habermas sees this as the highest expression of technological consciousness. The task of decision-making is then transferred to a machine. This stage has not yet occurred, and I think that it can occur only in a limited sense, when routine decisions are to be made.

For Habermas this is a negative utopia in which man not only objectifies himself, but integrates himself in his own technical

apparatus. Could we interpret this situation as a negative solution of the problem of thought and being? The decision making processes and possibly 'thought' about the direction in which society is to go, i.e. a parody of moral thought when done by machines, is then left to automatons. The integration of human society and decision making mechanisms is the result.

The traditional picture of a society as a system of interaction between human beings who consciously organize their lives by means of communication, is replaced by the instinctive or automatic self-stabilization of social systems, in which political consciousness has become superfluous.<sup>47</sup> Such rational rule is not identical with the practical problems that history puts before us. It is the unlikely supposition which says that there is a rational continuum of possible technological control over objective processes directed towards a practical control of historical processes.

The irrationality of history is founded on the fact that we 'make' it, without being able until now to make it consciously. A rationalization of history cannot take place through people who manipulate the extended powers of control, but will be promoted by a higher level of reflection, a higher level which can be developed in the emancipation of the consciousness of acting people.<sup>48</sup>

This unconscious development of rationalised institutions in an irrational society is a result of technological rationality which influences the industrial society. Max Weber has tried to clarify



through the notion of rationality the influence of scientific and technological progress on the institutional frameworks of societies who find themselves in a 'process of modernization'.

In capitalism we see institutionalized self-regulating economic growth. It brought about industrialization which is detached from the institutional framework of society and connected with other mechanisms, like the use of capital in a private form. The new aspect is not technology and the connected purposive-rational subsystems, but the destruction of the legitimizing framework of the (traditional) highly developed cultures. A legitimation is offered which is no longer idealistic, but arises from the basis of social labour itself.

Traditional society was marked by immediate political rule. In the capitalist mode of production the institutional framework is not primarily connected with politics, but with economics. The ordering of property is legitimized by the rationality of the market and the ideology of exchange, it is transferred from a political relation to a relation of production.

The superiority of capitalism consists of the existence of an economic mechanism which in the long term takes care of the extension of purposive-rational subsystems and provides

legitimation under which the system of rule can be adapted to the demands of the purposive-rational subsystems. It is this process of adaptation that Weber calls *rationalization*.\*

Modern science expresses a knowledge that is technologically applicable, although the amalgamation with technology is not immediate, but took place at the end of the 19th century. Modern science has not contributed directly to the process of rationalization but indirectly. The new natural sciences have a philosophical meaning which defines nature and society as complementary to the natural sciences. This definition induced the mechanistic world-view of the 17th century. In this way the reconstruction of the classical concept of natural law was established, which destroyed the old forms of legitimation.

Since the end of the 19th century we can see two movements in the developed capitalist countries:

1. an increasing level of state intervention, which has to ensure the stability of the social system.

\* Habermas distinguishes two tendencies:

1. Rationalization from below, that is to say the organization of labour and economic traffic, rationalization of the bureaucracy and the state.
2. Rationalization from above, which is the secularization of the world-view. Metaphysical, mystical and religious world-views lose their power when exposed to the criticisms of scientific thought which takes over the legitimation of society.

2. an increasing mutual dependence of scientific and technological research, by which science becomes the most important force of production.

The result of the increasing state intervention is that the institutional framework of society is politicized. Politics is because of that tied to the economic level by means of this institutional framework and stops being simply a superstructure phenomenon.

All this is contrary to early capitalism with its liberal ideology, which maintains that the state should remain on its own area of competence. The 'basis-superstructure' thesis of Marx can be seen as a criticism, in the form of a critique of political economy, of the situation of early capitalism. The theory of Marx was a criticism of the bourgeois ideology of equal exchange. Today this ideology is not valid any more, and this invalidates the theory which criticizes domination through the relations of production by means of the forces of production. State intervention through its institutional framework has penetrated economic relations, where before the state tried to stay away from the economic level as much as possible. Now domination is exercised by means of a complex interaction of the institutional framework of the state and the forces of production, a domination which is not merely expressed in relations of production.

Another ideology is necessary now the liberal ideology is no longer valid, an ideology which takes into account the interest of a dominion in a system of capitalism regulated by the state. Because of the formally democratic character of this capitalism it is not possible to bring back the pre-bourgeois traditions. That is why the ideology of free exchange is replaced by a substitution-program which as far as social results is concerned is not any more based on the institution of the market, but is oriented towards the state. The state tries to compensate the malfunctioning of the free traffic of exchange.

These substitution programs are directed towards guaranteeing of the private form of the use of capital and to tie the loyalties of the masses to this form. Politics assumes a negative character because the state is directed towards the stabilization of the economic system. It is not the attainment of practical results, but the solutions for technological problems which are the main issues (especially the avoidance of stability problems).

The solution of technical instead of practical problems is not dependent on public discussion. Public discussion can at the most decide about fringe problems. The new politics of state intervention needs the de-politicization of the masses, because in

so far as the expression of practical questions lasts public discussion becomes for the state useless, even dangerous. According to Marcuse, the de-politicization of the masses is made plausible because science and technology take over the role of ideology.

The internal laws of the quasi-autonomous progress of science and technology, produce a framework of (im-)possibilities to which a politics which respond to functional needs has to orient itself. If this illusion has put itself in motion it can clarify the role of science and technology, in a propagandistic way. It can also legitimize the loss of the democratic process's function in relation to practical questions, and has to be replaced by plebiscitary decisions about policy-alternatives.

The system of late-capitalism is characterized by the fact of the hiding of contradictions between classes. This is done by giving the lower classes more to lose than merely their chains. Habermas calls this the policy of avoidance of conflict.\* At any rate the main aspects of capitalism remain untouched.

\* One can, of course, also say that finally a society emerges that actively takes away, at least in one country, severe deprivation and poverty. It can be maintained that capitalism cannot exist when no new markets can be opened and old markets be extended, because of poverty. The state in late capitalism ensures, for a number of reasons among which ethical reasons, that a certain redistribution of wealth takes place so that capitalism can open and extent markets.

Habermas signals a paradoxical situation. Open conflicts about social interests present themselves more easily to the extent that they are less threatening for the system. Contradictions are not presented any more as class antagonisms, but let themselves be explained still as results of the dominant process of private-economical use of capital. It is indeed the case that there is a tendency to invest in modern means of production and military equipment than in the organization of traffic, health-care and education.

The avoidance of dangers for the late-capitalist system by a system of rule excludes 'rule' in the sense of social rule brought about immediately on the political or economic level, in the sense that a 'class-subject' approaches the others as a visible group. This does not contain the abolition of class-contradictions, but the latency of them. This also does not mean that there is no combined conflict-potential in relation to under-privileged groups.

The conflicts emerging in this respect summon reactions which are insoluble by formal democratic means, but the system remains unchanged. Underprivileged groups are not social classes and do not represent the largest part of the population. Their poverty is not any more the result of direct exploitation. On the level of

under-privileging economic interests are replaced by politico-military interests.

The technological-scientific ideology is less susceptible to reflection and criticism, because it is *not only* an ideology. It has become a transparent background ideology (gläserne hintergrund Ideologie), which tries to turn science into a fetish, more irresistible and far-reaching than the old ideologies. That is why it settles better in the consciousness of the masses. It takes care of the emergence of self-objectivation. The reified models of the sciences penetrate the socio-cultural life-world and get the self-evidence of an objective power. Practice and technology are no longer distinguished. As far as interaction is concerned an important matter is threatened, i.e. language or communication through speech. These interests includes the keeping of intersubjectivity and the establishment of communication free of restraints. Technological consciousness abandons these interests in favour of technological power of control.

For Habermas, the process of growth and rationalization of the forces of production can only be a potential of liberation, if it replaces rationalization on another level. *The rationalization on the level of the institutional framework can only be brought about*

*by means of the medium of language, i.e. by the elimination of the restraints of communication.*

Public unlimited communication free of restraints about the extent and desirability of conduct-oriented basic rules and norms related to the progressing subsystems of purposive-rational conduct on all levels of political discourse is the *only* medium that can be truly rationalized. It is a rationalization characterized by a decreasing level of repression, rigidity and the recognition of values accessible to reflection.

#### 2.10. Evaluation.

The works of Habermas contain alternatively clear elements and statements and very obscure parts stated in a difficult language. No doubt part of the discussion of the works of Habermas is complicated because of this. It seems that there is more than one possible interpretation of his work.

A central point seems to be that Habermas signals that the individual is burdened with a pattern of thought which he receives from the ongoing rationalization of society and which deflects his attention from practical and substantive problems. This is not a conscious process. The influence of science and



technology as ideology is very subtle. Habermas therefore speaks about an *transparent background ideology*.

Intentionality is not present, on the contrary Habermas tries to explain why it cannot be present. However, the point for Habermas is that the result of real emancipation is exactly this absent intentionality expressed in free communication. Free communication results in a higher form of reflection (see above) which attempts to change irrational history into a rational process. Free communication has to bring about this higher form of reflection which is intentional. But how is intentionality be brought about when it is just demonstrated that it cannot be present?

The way in which Habermas tackles the problem of technology and science is by means of epistemological critique of the current scientific, and social-philosophical theories. He tries to show that a part of these theories, i.e. the positivist philosophy, is part of the argumentation which is used to legitimize decisions on a social level. Their function is twofold:

1. the presentation of the purposive-rational desires of actors in the late-capitalist system and,
2. the covering up of the irrational elements in it.

For Habermas it is clear, as it is for Horkheimer and Adorno, that the roots of bourgeois thought are to be found in historical periods in which bourgeois society did not yet exist. Habermas is clearly less pessimistic than Horkheimer and Adorno about the future of modern society. There is no permanent negation. He evaluates science and technology positively to the extent that they have increased the powers of mankind. The problem is that they themselves have become an ideology.

In his book *Erkenntnis und Interesse*, Habermas discusses the scientific self-misunderstanding (Selbstmissverständnis) of metapsychology. This purpose of this book is to revive 'the abandoned stages of reflection' in favour of scientism.<sup>49</sup> For this he uses the psychoanalytic theories of Freud. Freud understood his own picture of the human mind as ultimately connected with the apparatus of the brain, although he tried to avoid direct parallels. Habermas signals this understanding of Freud as a scientific misunderstanding.<sup>50</sup>

It seems to me that both Freud and Habermas are making premature claims. As far as can be seen, there is as yet no knowledge of how the structure of the brain and the very complex intellectual and emotional expressions of the human being are connected. This seems at face value an argument in

favour of Habermas, but it is not. Although these relations are not yet known they may still be discovered! Habermas does not clearly distinguish between science as such and scientific philosophy.

In relation to the problem of the *dehumanizing* effect of computer models of mind Margaret Boden makes the following remarks:

In sum, and paradoxical though it may seem, computer models of mind can be positively *rehumanizing*. Thanks to their influence, 'mind' and 'mental' processes are now respectable concepts in psychology (which in the days of behaviorism they were not). This is important not only for psychologists but for society in general. For, as counseling psychologists rightly remind us, how people think about themselves *matters*. Science will be dehumanizing only if it has no room for mental concepts, no vocabulary for subjectivity. The natural sciences, including 'pure' neurophysiology, do not. But psychology, computer science, and neuroscience insofar as it focusses on the brain's computational functions, all do.

...Provided that they are properly understood, computer models of mind need not be socially pernicious.<sup>51</sup>

The dehumanized aspect of the natural sciences is not necessarily itself socially undesirable, neither is the study of the human being as a natural phenomena. Problems seem to come about when such attitudes are applied to society and human behaviour. But as the above citation demonstrates there is a gap between scientific philosophy which does exactly that, i.e. applying natural scientific standards to society and individual, the scientific endeavour itself does not necessarily fall.

Habermas's analysis is based on the distinction between practical and technical action. Practical action is concerned with 'real' communication between individuals and emancipation. It is, per definition, not alienating. To some extent it can perhaps be seen as the ideal of Adorno who stresses that 'mediated' communication is alienating, especially in expressions of art and music (see chapter 4, above). Probably Habermas means also by practical, the possibility to change society, or to subject institutions to the scrutiny of active subjects who communicate without restraint.

If Practical discourse means that social problems are seen in the light of class-antagonisms (see above) then clearly science and technology have very little to offer. Perhaps with the notions of technical and practical reason Habermas wants to show us the limitations of science and technology.

I still do not believe that the political and social discourse is 'rationalised' in a negative sense. It is difficult to see that because of this 'rationalisation' politics and social discourse invariably hide, not only class-antagonisms but also moral issues (which certainly are 'practical' in Habermas' sense) so that all problems are reduced to mere technical questions. Moreover it is hard to

see that this discourse is pervaded with scientific misunderstandings.

The emancipatory effects of practical reason are somewhat vague in the works of Habermas. He does not define the word 'emancipation' in any clear way. It follows, however, that emancipation has to do with the establishing of power-free communication, liberation of the individual from alienation, poverty, the mind-dulling ideologies of capitalist society, etc. These notions are very broad and cannot be seen outside of Habermas's notion of historical development.

Language and emancipation are closely tied. Since emancipation can only be brought about through (power-) free communication, language is of extreme importance for Habermas. The relation of emancipation to communication, i.e. language, means that also the difficulties of the existing language to express the truth about reality are included in this communication. According to Harald Pilot, this means that language in itself is ideological, and carries the 'old' ideologies into the process of emancipation, hence in the idea of emancipation itself.<sup>52</sup>

Then, however, the idea of emancipation itself would still contain ideological distortions which could only be eliminated through a critical praxis. Together with the ideological distortions of the unemancipated society, the distorted utopia of an emancipated society would also disappear. It would be the actual 'domination-free dialogue which would be practiced

universally' which would make it possible to conceive of the 'true' idea of emancipation. From this it follows, of course, that the idea of emancipation cannot directly initiate a critical praxis since it is itself exposed to the suspicion of ideology.<sup>53</sup>

It seems to me that the development of a 'dialectic of utopian reason' is not a fruitful undertaking. Practical action is, as is implied in the quotation above, at best an activity which is hoped to be fully realized in the future while at the same time it has to bring about this better future.

We can however make a distinction between technical action, as a mechanic activity, and non-technical action as the actions and decisions concerning the interests of certain individuals or groups (even the whole of mankind). In this respect decisions about for example military expenditure are practical decisions. Habermas wants to see this in a different light, but it is difficult even for the most war-like elites in society to automatically decide on more expenditures, heavier armaments, etc., without weighing other factors concerning the relation of other interests in society and the interests of that elite. It is too easy to explain away unfortunate decision-making with the use of an ideological bias.

### 3. 'Good' and 'Bad' Technology.

There can be no doubt that besides the ideological and restraining aspects of modern technology there is also a liberating effect. Communication is made possible, very much by technological means, and as I have said above there is a tendency for capital interests no longer to control this communication. Here is a Schumpeterian paradox. Industrial capitalism rationalizes society in the name of production and by means of science and technology, and at the same time this production makes the possibilities of science and technology accessible for a large public, who do not merely consume it.

The development of micro-electronics literally brought home the possibilities of communication, education, computing and decentralized production. The old liberal values of the small entrepreneur are, to some degree anyway, restored in our time. At least in the western capitalist countries, a social security system takes away the large risks that in earlier times were connected with the setting up of a business. The relation between economic opportunity and personal risk is not any more so much biased towards risk, because of the protection social security offers.

From the above it is clear that technology contains opposing aspects. On the one hand we can see its use and development in order to alleviate the burdens of life, bringing wealth and making work easier. On the other hand there is the situation depicted among others by Habermas of domination of man by machines, of alienation and of technology as a misleading ideology.

If we again consider Habermas's distinction between technical and practical reason, we can distinguish 'right' and 'wrong' use of science and technology. A 'wrong' use of technology is clearly those applications which do not enhance free communication between people or which even limit or prevent such communication. Military technology is an obvious example. Another is the use of information technology, especially the use of modern databases, in the hands of an authoritarian or dictatorial government which wants to gather information about all its subjects in search of possible enemies. The possibility of preventing such abuses by government (and also by private agencies) is the subject of Part II.

But beyond the use of science and technology which is clearly intended to harm people the search of for examples becomes



more difficult. The tendencies observed by Habermas are vague and it is not easy to point at individual instances.\*

One important technological element of our age is surely telecommunication and the media. Both rest on the same technological achievements. As far as telephone communication is concerned, the issue is clear. It removes more alienation than it creates as far as human contact and communication is concerned. Of course it can always be maintained that it provides communication between people as individuals and not as groups, hence it has alienating effects. But I cannot see any difficulties with it except that telephone conversations can be tapped.

More important are the mass-media, which have served so much in the service of governments, in order to disseminate propaganda. It is not always a monolithic apparatus to influence opinion. In many countries radio and television is not merely controlled by the government.

A good example is Italy, where the monopoly of the governmental RAI radio and tv stations was taken away in 1976,

\* There exists a technological world-view where the human being is seen as a mere machine, but it is a view of an earlier age, although in psychology this view is sometimes taken as a working hypothesis. One of the earlier materialistic views in that direction can be found in 18th century works like *L'homme machine* (1747) of La Mettrie. See also Ernst von Aster, *Geschichte der Philosophie*, Stuttgart, 1975.

as a result of Article 21 of the Italian constitution which guarantees 'liberty of expression'.<sup>54</sup> Similar developments have taken place in other countries especially with the introduction of cable radio and television. In Great Britain there is the combination of the government operated BBC and a private network. Similar movements can be seen in other countries, notably the US where cable TV also invites small groups and organizations to engage in transmitting programs.

The Netherlands is perhaps a strange exception. By law all radio and tv transmitters used for the dissemination of programs are owned by the government. But by the same law the government has nothing to say about what is transmitted. The transmissions are in the hands of membership organizations who represent certain political or religious groups. To get time for transmission is relatively easy. Every organization with more than 100,000 members has the right to claim a fair share of transmission time. There is no control over the content of the transmission, beyond normal legal measures against slander and obscenity. Even these are not often used.

Satellite broadcasting and cable TV (sometimes called narrowcasting) opens up cheap possibilities of various

organizations and groups to prepare and transmit programs directed at a more or less broad audience.

Cable TV and connected possibilities opens the way for an enormous choice for the public. It has a very large potential not merely for one-way communication:

Cable differs from broadcast television in three fundamental ways.

*Cable offers expanded channel capacity.* Cable systems installed today promise upwards of 100 channels, offering local communities a varied, and unprecedented, communications menu. Not only do these channels offer today's mass-oriented broadcasting, but cable also offers "narrowcasting" - special programs going out to special interest viewers.

*Cable offers two-way communication.* While the majority of cable systems are now limited to conventional one-way communication, newer systems also offer the option of consumer-originated messages. These may take the form of polling, emergency calls, or requests for information. *Cable can easily be coupled with other communication technologies.* Cable is one medium that can carry virtually all others: newspapers, radio, film, books, even still pictures. While cable can't really substitute for a visit to the movies or a museum, it can distribute images widely and inexpensively. Linking computer technology with cable -in transmitting data, for example - is especially powerful.<sup>55</sup>

It can be argued that although an enormous choice is present most people will direct themselves to the big networks and leave the small media organizations with their particular approaches and opinions to their small audiences. These people will probably mostly talk to themselves.

The thinkers of the Frankfurt School deplore these developments because of the distance that is created between the spectators and the performance, or 'production'. I believe that the movement is actually reversed. Many pieces of creativity in the form of the performing arts, but also different other forms of art together with scientific information and various forms of news-gathering are brought closer to a large majority of the people than it ever has been. It is true, a majority of the users of such systems will probably hardly use these possibilities. But still many more than in earlier times, where this information was not so readily available, will use it a lot, mainly because they can finally get at it.

The fact, however, that program makers have possibilities to compete for an audience in liberal democracies is in itself important and valuable. One can come up with objections against the ideological aspects of such a socio/political system. But in such a system one is able to transmit these objections over the media and one has a fair chance to try and persuade people.

The pernicious effects of propaganda through the media seems however limited. Early experiments showed that changing existing attitudes through propaganda is very difficult.

Our distance from being able to measure adequately the effects of communications may be illustrated in relation to the most

substantial single empirical research work yet done in communications: *Experiments on Mass Communication* (Hovland, Lumsdaine and Sheffield, 1949). This report on experiments in the training and indoctrination by film of the American soldiers in the second World War shows that films were quite effective in imparting skills of the 'nuts and bolts variety' but that for changing attitudes toward the war, films produced very little change in the intended direction. For altering motivation the films showed practically no effect.<sup>56</sup>

This means that direct influencing of attitudes is difficult, but still people can be confronted with distortions of the truth and be misled about facts.

Communications technology in no way prevents distorted or unreliable information from being transmitted. The dangers of misleading advertising and of persuasive claims with little truth are real, and require some degree of regulation... But the economic and social consequences of distortions are not, many believe, nearly as dangerous as the use of communications networks for political propaganda by authoritarian or totalitarian states, such as occurred in Stalinist Russia, or in the propaganda machine of Goebbels in Nazi Germany, or in the fictional nightmare of George Orwell's 1984. The dangers exist even in liberal market economies, that 'technological imperatives' may lead to increasing control over economic and social life, with a resulting loss of freedom to the individual.<sup>57</sup>

But at the moment the movement is away from that. More and more small groups gain the possibilities of transmission of their messages. The use of cable systems and the like have not so much drawbacks in regard to alienation and the ideology of science and technology but for privacy.\* But the prospects for

\* The possibilities of two-way cable with its large selection of TV-programs and information services, for which has to be paid has drawbacks for the privacy of the viewers:

Not everyone is enthralled with cable's two-way capabilities: the potential for abuse is considerable. Accounts of the pay-TV programs individual subscribers watch, from special entertainment events to pornography, are monitored routinely. Operators of two-way systems are privy to polling results, purchase decisions, personal schedules, and whatever  
(continued...)

political propaganda in the sense of Goebbels are diminished. This is certainly an aspect of modern technology that turns out to being able to give a multitude of information to the receivers.

An interesting example is the popularity of the BBC Shakespeare series in a large number of countries. Not only violent films and series and soap opera's vie for the interest of the public. The picture is more complex than the Frankfurt School c.s. wants us to believe.

Another feature of communications technology, which can be highly democratic, is connected with the telephone system. Modern telephone systems allow for the possibility of computer networks. The use of such networks by large database systems, and its dangers, will be discussed later. Computer networks allow for the quick exchange of information between its users. Already there are several networks operational in the US, Europe and Japan. They are created for a special public like academics, computer specialists, doctors, etc. They allow for ongoing

\* (...continued)

other household and commercial transactions subscribers make. Like the old-time village switch-board operator, today's cable operators could know more about us than we wish, with far more serious consequences.

(Kahn, Robert D. and Ernst, Martin L., *The Impact of Cable*, in Forester, Tom, 'The Information Technology Revolution' Oxford, 1985, p. 149/50).

The problem of privacy, which is so important in connection with information technology, will be discussed at length below.

conferences on many subjects. The user does not have to be physically present to be able to get information or to contribute information.

One element of this is, of course, 'alienation' of people from one another, because they do not have to be physically present. On the other hand, it can be argued that one does not have to interrupt ones work in order to be present at a conference where much of what is been said is not really useful, so that much time is spent waiting for the useful information. Besides, it must be recognised that conferences have a social aspect, but are there not more pleasant opportunities to meet people than at conferences?

The rapid development of communications and information technology may also have effects for politics. In a recent study about several projects which were set up in order to give the public a better ability to influence decision-making with the help of modern technology (teledemocracy) Christopher Arterton remarks:

Technology can make teledemocracy, in the sense of pluralist dialogues, possible. In every case where communications media were used to allow citizens to interact with public officials, the results were beneficial. The citizens certainly became better informed. The number and breadth of those who could be said to be politically active was increased. In many of these cases, the available evidence suggests that citizen involvement has a tangible effect on the public policies enacted. And finally, in a

few instances, I tentatively concluded that the political system itself was modified by the expanded role of citizen involvement.<sup>58</sup>

The possibilities of success of this application of technology are not without conditions. First, an equal access to the teledemocratic systems has to be guaranteed. Second, the free gathering of information about any subject at hand, and its free discussion has to be guaranteed. Without these conditions teledemocracy may turn into its opposite, an instrument of manipulation. But if they are fulfilled the relative insulation of government may be diminished and the position of unprivileged groups may be improved because of the better possibilities that their complaints are heard. The setting of an political agenda away from 'practical' problems as seen by 'the people' through a ruling elite, as Habermas sees it, may become much more difficult as it already is. Technological developments and applications can change representative democratic systems into a more direct form of democracy.

In relation to the bad effects of technology, a much debated issue today is the effects of nuclear energy for the environment and also for politics. Nuclear energy as we know it works on the principle of fission for which it needs a costly mineral, uranium. Moreover the waste produced by fission reactors is dangerous and cannot be easily discarded. The side products of fission



reactors give those who want it the material for the construction of nuclear weapons. This, in its turn is, is a reason for the countries trying to prevent this to step up police activities in order to be able to prevent the stealing of this material *and* the information necessary to make nuclear weapons.

Such developments are certainly very serious. There is the danger that nuclear weapons will be used, not only by 'irresponsible states' but also by terrorist groups. Moreover, the security necessary to protect nuclear material and information from theft may lead us, unwillingly, to a police state.

This example demonstrates more than all the others, that what we have to learn to control is the application of certain technologies. Nuclear physics and nuclear technology are in themselves not responsible for all the problems with fission reactors. The very practical decisions of governments (democratic governments in the beginning, to be sure) are responsible. The know-how found in nuclear physics and nuclear technology can, and probably will, give us the possibility of cheap, clean and easily to be decentralised energy production in the form of fusion reactors.

There is, of course, no doubt that these developments are the product of what Robin Clarke calls 'hard technology'.<sup>59</sup> He proposes a table where 'hard' and 'soft' technology are compared. In comparing the results for, for instance, ecology, energy input, pollution rate, politics, social use, etc., he tries to show that 'hard' technology is bad and 'soft' technology is good. Such a distinction is, I believe, no longer possible. Information technology and the supporting technologies of micro-electronics, are not as large-scale as Clark believes 'hard' technologies are, but neither are they small-scale as 'soft' technologies. They hold threats as well as promises, because of the possibilities of communication and gaining of knowledge as well as the potential for social and political control. It is not necessarily true with the developments of modern technology that they only function on a mass scale, that they are necessarily dirty and pollute and alienate. Production with the help of information technology can be very small, producing small quantities for special applications which are not necessarily expensive.\* This can be done completely decentralised. It is true that they can be that way in perhaps only

\* The methods of Computer Aided Design and Computer aided Manufacturing (CAD/CAM) make these kinds of 'non-alienated' production possible. Although the human producer does not make the end product entirely with his own hands, he certainly produces them with his brain. The immediacy of the production clearly connects the producer with it in a way which is comparable with that of the crafts. Moreover the element of decentralisation makes this kind of production more responsive to demands of the community in which the production takes place.

certain applications. Let us look in the light of the critical theory at information technology and its effects.

### 3.1. Information technology and the critical theory.

Information technology is one of the most important, it not *the* most important technology we have today. It stands at the centre of all administrative, scientific and technological activities today. Almost everyday something about computers is mentioned various newspapers and magazines, radio and television. In many households computers have find a place in the form of personal computers or game computers. There has hardly existed a technology which has occupied people's minds so much. Its influence on society, dangerous or beneficial, is much wider than the problem of privacy and databases containing individual data.

Information technology has existed, of course, much longer than the computer. Every civilization, in every period in history, has some method of gathering and keeping information that is considered important for that civilization.

However, it is in Western civilization that information gathering and keeping has become systematized to the extent that we can

call it a technology.\* This technology enhanced with the aid of the computer comes close to what Weber called a monocratic bureaucracy.<sup>60</sup> According to Weber, bureaucracy is marked by precision, speed, unambiguity, knowledge of files, continuity, discretion, unity, strict subordination, reduction of friction, material, and personal costs. One can argue that in practice the classical bureaucracy never lived up to this ideal (or ideal-type in the Weberian sense).

Bureaucracy has also acquired notions like 'red-tape', slowness, stupidity and above all counter-effectiveness. The bureaucratic organization can degenerate, lose contact with their objects. Their only object is sometimes merely to continue to exist, they get into in a 'rigidity cycle'.<sup>61</sup>

The 'ideal type' aspects are of course primarily beneficial for the one who rules this information system and not necessarily for its clients. In a democratic society, ideally, the rulers and the ruled (clients) are identical, but we all know that in reality this is often not the case. With this observation I have asked the question: "How can the applications of technology be controlled in a

\* For Weber bureaucracy is the most important aspect of the modern Western state. Bureaucracy can be seen as institutionalized information technology. It can be called technology because it is a means/end oriented activity, hence guided by purposive rational thought. It fits in with the broad definition of technology. See Max Weber, *Wirtschaft und Gesellschaft*, Tübingen, 1976, p. 576.

democratic process of decision-making?" I will focus on the applications of information technology, as an example, for the following reasons:

1. Information technology seems to be a key technology in industrial society.
2. The repercussions of information technology are, although more silent than for example those of the automobile, decisive for the well-being of citizens in respect of freedom and the control and development of other technologies.
3. Information technology enhances bureaucratic practice, public and private. More, it can change the real (and compared with Weber's ideal type of bureaucracy, somewhat defective) bureau in the theoretical ideal type, because it reduces to a large extent human involvement in the internal procedures of the bureau.

This question includes also non-technological aspects. These aspects may be summed up in questions about the use and domain of bureaucratic activity in a democracy. Computer enhanced information technology makes these questions merely more acute.

Although, here if at all, I cannot deal with these problems on a large scale, I will, however, discuss some aspects of the influence of information technology which I believe to be important. First

I will describe the development of what is commonly known as information technology, namely information exchange through and with the aid of electronic devices mostly computers. Then I will evaluate some of the effects that information technology has and may have on society.

In order to describe these effects I distinguish three levels:

1. Aspects and effects of the application of modern information technology in the short term.
2. The aspects and effects of it in the long term.
3. The ideological aspects and effects.

The third level actually cuts across the two others, which are more directed towards the 'hard' effects, while ideology can be seen as a 'soft' effect (not that this distinction means that the one is more serious than the other).

### 3.2. The development of electronic information handling.

The actual development of pieces of hardware and methods in history can be found in any book about the development of technology since the industrial revolution. I will therefore only give a brief outline in the light of Schumpeter's theory of technological development.

In the development of information technology we can see roughly three periods:

1. The period of entrepreneurship, in the Schumpeterian sense, which lasted from the thirties until the fifties, when IBM became the major computer producing company.
2. The period of institutionalization of computer technology development. This period lasts until the end of the seventies. Among computer people this period was sometimes referred to as 'the story of IBM and the seven dwarfs'. IBM reigns supreme. Here we can almost speak of a monopoly of IBM. Competition in the field of multi-purpose large computers is almost non-existent. Only in specialized areas other computer producers have a chance of extending their market share.
3. The re-emerging of a Schumpeterian entrepreneurial period. With the advent of the micro-processor very small firms develop micro-computers of increasing power, nowadays coming close to the power of super-mini computers (a kind of small mainframe computer). This development started, commercially, with the Apple micro-computer.

This gave opportunity for renewed competition in which companies like IBM were initially very much behind in their market shares\* and could only with great trouble gain some more.

\* IBM had at that time already experimented with a micro-computer design.

We are still in this period, although it looks, as if we shall in the near future enter again an institutionalized period in this micro-computer development again, because of the increasing development costs.

These trends will have serious effects for society, especially because their introduction is going very fast. I will now discuss some of the effects of information technology on society.

### 3.3. Short term effects.

Computerised information technology consists of the following aspects:

#### 1. Data processing

- a. calculation (scientific and administrative);
- b. data-base applications.

#### 2. Communications

- a. data communication (the communication between computers and between computers and users);
- b. telecommunication;
- c. mass communication;

#### 3. Distributed data-processing (combination of computers and telecommunication);

\* In 1989.



4. Robots;
5. Computer aided design and manufacturing (CAD/CAM the immediate transfer from design to automatic manufacturing both with the help of computers/robots).
6. Office automation.

Some short term effects of the use of information technology are the gradual replacement of traditional human activities in production. Simple administrative and industrial activities will be taken over by small office computers and simple robots. This may almost certainly result in a gradual elimination of blue-collar work and simple administrative work. Because of the relative simplicity and the economic advantage of the use of modern information technology not only the gradual elimination of blue collar work will happen but also the gradual elimination of traditional goods and services production.

Banks, insurance companies, and also the government are rapidly automating their activities. Together with industrial automation this may create in the near future serious socio-economic problems.<sup>62</sup> However this is not yet the case. There are some examples of unemployment caused by the introduction of automation, but for whole economies this is certainly not (yet)

the case.<sup>63</sup> There is still work that cannot be automated, and perhaps never will be automated.

The automation of administrations has also effects for the exercise of power within the organization. In a study of urban information systems in the United States, Anthony Downs found the following effects:

1. Lower- and intermediate-level officials tend to lose power to higher-level officials [and in government structures to] politicians.
  2. High-level staff officials gain power.
  3. City and state legislators tend to lose power to administrators and operating officials.
  4. The government bureaucracy as a whole gains power at the expense of the general electorate and nongovernmental groups.
  5. Well-organized and sophisticated groups of all kinds, including some government bureaus, gain power at the expense of less well-organized and less-sophisticated groups.
  6. Within city governments, those who actually control automated data systems gain in power at the expense of those who do not.
- Therefore, much of the controversy which is sure to arise concerning the proper design and operation of urban data systems will reflect a power struggle for control of those systems.
7. Technically educated officials within city governments gain power at the expense of old-style political advisors.<sup>64</sup>

A possible strategy against this trend, is nowadays with the advent of the micro- or personal- computer, decentralization of computer activities to the different departments in an organization together with the education of the employees in the field of computers.

But this can only be a partial solution. A large part of the information will be stored in central databases of networks, which are operated by specialists and ruled by high-level officials and experts.

Nevertheless, there is also the prospect that work can become more interesting and less routinized just because of automation of certain parts of it. The work-place can become a place of learning and more creativity, especially when functionaries are consulted in the design phase of information systems. This is true for both administrations and manufacturing.<sup>65</sup>

Another serious aspect of the application of information technology is the use of databases with their possibilities of fast retrieval and combination of data. The existence of large databases filled with personal data may give an opportunity of more government control of private activities.

There is a rather academic distinction made between two types of records that a government may hold about an individual. One is the administrative record, which holds data about age, sex, income, tax, etc. And the other is the intelligence record, which hold data about the behaviour (political, sexual, religious, etc.), political orientation, and subversive activities of an individual.

This distinction is academic because, although the different records may exist in different databases in different government departments, they can be so easily be combined that it is better to speak of an government database which is merely decentralized.

I will use this problem as an example for possible control of the application of information technology in the next chapter, where I will also deal with the question: Which data should be stored on individual citizens?

On the whole we can say that information technology, up to today, has a conventional effect. It has merely replaced certain human activities in certain sectors, as other technologies have done before. It has greatly increased productivity, and certainly created dependence on information technology in the sense that society today is already unthinkable without computers. Still most of the work done in industry and administration can still be done without computers, even if at a much lower pace.

The exception may be aerospace and military industry. Without the help of computers modern aircraft and spacecraft cannot be constructed. Modern military equipment is also unthinkable

without computers. One may conclude from this that also in a technical sense warfare is not human any more.

One may expect that things will not remain the same. Already technological developments have caused great changes in work and private life, even to the extent that there are those, like the philosophers of the Frankfurt School, who believe that it has already resulted in an impoverished life

#### 3.4. The long term.

This is clearly a good heading for some wild speculations, especially because our civilization does not yet know long-term planning on a broad basis. Only large firms and economics ministries attempt to do some really long term forecasting, which is different from planning because it only tries to predict. But their views are limited. Over periods of for instance twenty years, planning is impossible, except perhaps in the Eastern European countries where life seems to have a slower pace. But even their planning is limited to five-year plans. Long term planning is difficult because developments go very fast and the number of variables needed to make a reasonable forecast on which planning can be based is probably astronomical. Only educated

guesses can be made. But some of these guesses have been made.

We have to take care that we do not describe a utopia (or dystopia) in our guesses. Usually utopias come more from wishful thinking, or great fear in the case of dystopias, than from reality.\*

### 3.5. Social aspects.<sup>66</sup>

Information technology may take away boring and repetitive work, thus leaving more room for rewarding and creative activities. When no adjustment of society towards work and the work ethic takes place, and when no possibilities for other activities than work are created, then the taking away of work may lead to endless boredom and without good social security to poverty for those who lost their boring and repetitive work.

\* Ralf Dahrendorf gives the following characteristics of utopias:

1. Utopias do not follow do not grow out of familiar reality or follow realistic patterns of development.
  2. Utopias characteristically have uniform consensus on values and institutional arrangements; that is they are very highly uniform throughout.
  3. Utopias are characterized by an absence of internal conflict; that is they are characterized by social harmony [voluntarily or brought about by extreme repression as with dystopias], which helps to account for their stability.
  4. All processes within utopian societies follow recurrent patterns and occur as part of the design of the whole.
  5. Utopias are characteristically isolated in time and space from other parts of the world.
- Dahrendorf, Ralf *Pfade aus Utopia; Arbeiten zur Theorie und Methode der Soziologie*, München, 1974, p. 243-6.

One of the most striking possibilities is what may be called telecommuting. It is the combination of computer and communication techniques that may lead to a massive decentralization of administration and production. If this trend is to take place then it is for many occupations no longer necessary to leave the home. Work can be done, given the fact that information transfer can take place without hindrance and waiting, at a distance. Vast computer networks can link the computer device that stands in the home, and so give the possibility of 'home-work'. The ultimate result may be that cities are no longer necessary as centers of production and distribution, so that other centers may come about. On the one hand this may sound very comfortable, but on the other it may lead to an impoverishment of human relations. Unless there are possibilities of enough and satisfying social contacts in the place where one lives, telecommuting may lead to isolation of the individual and the family.<sup>67</sup>

The same technology may be used for education, since it is efficient in the sense that expensive school buildings are not necessary any more. The same effects as with telecommuting may take place. There may be less contact of children with other children, and moreover the contact of the teacher with the pupil is lost. Again, unless there is a community with rich social

contacts this technological possibility may easily lead to further alienation and isolation of the individual.

The dissemination of important information for those who need it may be improved, especially for the weak in society:

Whereas dissemination techniques have developed over decades, communication techniques seem to be at the beginning of a new wave. Microelectronics and complementary technology are the physical background to these innovations.

...All [important] information is already offered by the different media, but its ad hoc dissemination means that it is a matter of luck whether one gets the relevant information or not. The information market is not overloaded, it is unstructured and like a jungle and therefore it offers services only to well educated and active searchers. The present information market does not help people who need it most badly. It can be argued that the information jungle leads to social injustice.<sup>68</sup>

The structuring of the information market needs interactive contact with the databases in which the information is stored. Aside from the elementary know-how (depending on user-friendliness) there is need for legislation that enable everyone to make use of essential information. Mere freedom of gathering information will not be enough, essential information should be free and also the means of getting it.

On the other hand strict control of information together with an effective registration of personal information may lead to quite adverse results, as we have seen above.

One importance of the new information and communication techniques is, that in annihilating distance, they can pave the



way for all kinds of decentralization, which is the obvious desire of many societies today, including the dispersion of points of power and decision-making. This could lead to new systems of power and decision-making. ...On the other hand, it has to be admitted that the same means could be used by the unscrupulous or power-hungry leader to consolidate and augment centralized power. The means may shortly exist for the control of the activities and perhaps even the thoughts of everyone ... individuals or societies.<sup>69</sup>

It is not simply technical control that can fend off this danger. Political, social and above all moral decisions coming from an enhanced awareness of the possibilities of technology and the needs of society, are more appropriate elements of control. This brings us to the part of the ideological effects of information technology.

### 3.6. Ideological aspects.

In an interesting book *Computer Power and Human Reason*, Joseph Weizenbaum describes the shock he experienced when a computer program he designed seem to have 'undesirable' results on people. He designed a program in order to see to what extent a computer can handle human language and analyze it.<sup>70</sup>

It happened that people, relatively uneducated in computer technology, used this program in order to be able to talk about their problems without having to go to a psychiatrist. The

program was so designed that it simulated a Rogerian psychiatrist.

But not only 'relatively uneducated people' thought highly about the program's abilities to *understand* them but also psychiatrists themselves thought that through programs like this one, they could actually automate their practice as psychiatrists.

Hofstadter remarks about programs like ELIZA the following:

..this kind of program is based on a shrewd mixture of bravado and bluffing, taking advantage of people's gullibility.<sup>71</sup>

But this seems actually to be the problem, when people are not sufficiently informed then mystification takes place. They are presented with phenomena they cannot interpret. At face value it really seem as though a computer program *can* understand human language in its full meaning. Because of this condition a false trust in the outcome of computer directed calculations and information comes about. A trust which exceeds the trust in human beings, which are fallible, because 'a computer *never* makes mistakes.'

After having shown his doubts about the reception of ELIZA Weizenbaum asks three questions, which to my mind are important in their ideological context:

1. What is the nature of artificial intelligence? Apparently that is what makes the computer different from other tools.
2. Why has man come to yield his own autonomy to a world viewed as a machine?
3. People project into machines their own ability to think but is human thought similar to the internal processes in a computer?<sup>72</sup>

He mentions that the belief in 'thinking' machines goes further back than the computer era. People believe also in the working of *institutional machines*, like the bureaucracy.

The problem is that there exists a mechanical world view, not only in abstract theories but very much in the mind of the man in the street. Weizenbaum bases himself on the theories of Horkheimer and Adorno. As I have indicated above (chapter three) they see 'science' itself is causing the trouble. It is scientific thinking which has gone beyond its proper place. Reason, the important notion of the enlightenment, has turned into its opposite. It is the basis of the view that *judgement* can be exchanged for *calculation*.

### 3.6.1. Critical Sociology.

We have to remember again the notions of rationality as they are mentioned in the works of Weber. In modern society the organization of means and the choices between alternatives are

important. There is a 'means-end rationality'. This process of rationalization has put science and technology in the place of the old ideologies. This has as result the de-mystification and secularization of social conduct. Marcuse, I have indicated this above, adds to this that rationalization, in Weber's sense, is not rationalization in general but a specific form of political power.

Legitimation takes place through technology and science. In a strict sense the repressive character of capitalist society becomes less. Greater production results in greater welfare. Nonetheless the individual is subordinated to the system of production. 'Free disposable time' is taken out of the private realm and constructive and destructive production have become one.

But the interesting thing is that this repression disappears from the consciousness of the individual, because the legitimation of it has a new character. It can point at growing productivity and control over nature, which make life for potentially every individual comfortable.

We may recall the four stages of rationalization, from Habermas, quoted above:

1. The most elementary level, strict technological rationalization. Instrumental activities are rational in the means-end sense.
2. When the choices are between two or more alternatives rationalization of a higher level is necessary in order to be able to choose. Decision theory links alternative techniques on the one hand with value-systems and rules of decision.
3. The third level is about strategic situations, where there is a rational relation with an equally rational opponent. Game-theory explains the strategies which can be used to gain control over the situation.
4. The fourth level is about the self-regulating (cybernetic) organization of society. For Habermas this is the highest expression of technological consciousness. *Decision making powers are transferred to machines.*

The human being is made an object to an extent that he integrates himself with his own technological apparatus. Where he also projects a reduced definition of 'intelligence' and consciousness in machines. De-mystification is reversed, the period of the new animism comes about. With this context in mind we can look at the vehicle of rationalization, language and concepts.

### 3.6.2. Language and Concepts.

Here we enter upon one of the main aspects of rationalization in its mystifying sense:

The computer has become a source of truly powerful and often useful metaphors. Curiously the public embrace of the computer metaphor rests on only the vaguest understanding of a difficult and complex scientific concept (here, the theory of computability and the results of Turing and Church concerning the universality of certain computing schemes). The public vaguely understands - but is nonetheless firmly convinced - that any effective procedure can, in principle, be carried out by a computer. Since man, nature, and society carry out procedures that are surely 'effective' in one way or another, it follows that a computer can at least imitate man, nature and society in all their procedural aspects. Hence everything is at least potentially understandable in terms of computer models and metaphors. Indeed, on the basis of this unwarranted generalization of the words 'effective' and 'procedure,' the word 'understanding' is also redefined. [To *understand* X is to be able to write a program that realizes X.]<sup>73</sup>

This means that we have arrived at a reduction, not only of reality, but of the meaning of words. Especially in certain branches of psychology the belief exists that 'computers and human beings are merely two different species of the genus called *information or data processing systems*.'

It should be noted at this point, that the broad definition of technology of chapter two is not in contradiction with this. Certain social and bureaucratic ways of organizing are not separated from technology as such. Purposive rationality which is

essential to technology, understood in its narrower sense, is in the same way essential to administrative organisation and attempts of social 'engineering'. One of the important aspects of this, is that it results in a view of the human being which reduces him to whatever is important in the ongoing project, whether it is about administrative or social organisation or working with machines.

The use of computers in their information processing capacities usually concentrates our attention to the information processing abilities of the human being, institutions, etc. Weizenbaum compares this with the attitude of a 'Fach Idiot.' This does not mean, of course, that psychology cannot profit from computer models in the research of cognitive processes that underlie the acquisition and memorization of information. The human being is *also* an information processing system.

The notion that the human being is merely an information processing system is directly related to the exclusive notion of technological discourse, proposed by Habermas, as opposed to the inclusive notion of practical discourse which would include the information processing aspect of the human being to his other abilities.

The interesting aspect of these models are that they show what psychologists call interference. That means, the acquisition of a new association that interferes with the production of an older one when the syllables (it registers syllables) involved have closely similar descriptions. This aspect was not consciously programmed.

So a computer does not always do what the programmer tells it to do. The complexity of programs often lead to unexpected results. This very often happens when an information system is designed of great complexity, and therefore the actual programming is done by many programmers. They all test their designs with known information and possibilities. But when a constellation of information shows up which is not expected, whole information systems may run amok, or at least produce 'unexpected' results. Important are in this respect also the systems that produce themselves 'routines' (little programs) in order to perform their task. Such systems end up by having *no authors*, because the original designers do not know any more precisely how the system works.

Some writers, like Hofstadter, see in this the explanation of creativity in the human being. They argue that we have such high-level and complex information processing programs in our brain that they produce, as side effects, unexpected results. The



undesired results are rejected, by a program called 'super-ego' and only the useful results remain as new input for the system.

It must be mentioned, that the programs that produce these side effects are programs that perform a particular sort of 'intelligent' task, namely arriving at the right (logical) conclusion when given (abstract and detached) premisses. A large part of the efforts in Artificial Intelligence research is directed towards the 'understanding' of natural language. The programs that should be able to understand natural language are programs which should be open ended. This means that they should be able to 'learn,' which in its turn means that they have to be able to store multiple meanings of words and sentences than mere rules of grammar.

A system that does only computations according to preprogrammed rules is what experts call a 'finite automaton.' The systems that Artificial Intelligence research aims at are 'infinite automatons' as opposite to finite automatons. They should be able to reconstruct language rules, which may not be limited in number. Language-understanding systems, which do not fully exist yet, should be able to even change the rules of grammar when they find out that in certain situations the old ones do not apply.

This is a very difficult problem. But research in this field has been proven partly successful, especially for so-called expert programs. It would be useful anyway, because then we do not have to learn people a computer language, but the computer can learn human language.

The problem with human understanding is that people do not understand language or pictures in an analytic way, they *can*, but mostly they do not. They understand in whole pictures or in a contextual way. The definition of context is almost impossible. We have to give certain contextual meanings as preprogrammed information to computers. Otherwise the following conversation may occur:

A computer program that simulates a hotel-clerk showing a guest the hotel room.

Q: Where is the door to the bathroom?

A: The door to the bathroom is opposite the bed between the TV-set and the entrance.

The guest apparently seated and old, wants to get up:

Q: Give me a hand.

A: Do you mean that I have to detach my hand and give it to you?

Q: No, just help me to get out of my chair.

This 'meaning' will be stored in memory.

Next situation:

Same scene:

Q: Give me a hand.

A: Do you want me to help you get out of your chair, or that I detach my hand and give it to you.

Isaac Asimov, a well known science fiction writer, once remarked about robots and computers: ' [they] are logical, not rational'<sup>74</sup>. But this particular problem can undoubtedly be solved. Nevertheless it shows the tremendous problems in the definition of 'understanding.' Even in a reduced way as it is used here.

The same problems occur in computer translation. The context in which text is placed determines often how it should be translated. It is not at all certain that we can make 'multi-purpose' translation programs, since context requires 'real' understanding. Specialized translators are possible, of course. That means programs that work in a closely defined context area.

Weizenbaum asks two questions:

1. Are the conceptual bases that underlie linguistic understanding entirely to be formalized, even in principle?

2. Are there ideas that no machines will ever understand because they relate to objectives that are inappropriate for machines?<sup>75</sup>

Artificial Intelligence research has today not more than 'touched only the tiniest bit of the relevant knowledge.'<sup>76</sup> Therefore we must be careful with our predictions about what computers can and cannot do. Our answers may have to do with our ignorance not with real possibilities.

Understanding of language has not only to do with context, but also with feelings, and this is where machine and human being part. Because, perhaps feelings can be simulated, but does that mean that the machine feels?

### 3.6.3. Intelligence.

In the context of computers and artificial intelligence it is important to know what we mean when we talk about intelligence?

In psychology there is talk about I.Q. tests, where 'intelligence' is quantified in a quotient. It must be noted though, that intelligence in the sense of I.Q. tests is the measuring of abilities that are found to be necessary in our society (with its ongoing

'rationalization'), and very often determined by what is needed on the labour market.

Weizenbaum finds that the concept of intelligence is reduced by those who are powerful (individuals or institutions). It is the result of an ideology with 'capitalist' interests backed by particular applications of science and technology.

The idea that intelligence can be quantitatively measured along a simple linear scale has caused untold harm to society in general, and education in particular. It has spawned, for example, the huge educational-testing movement in the United States, which strongly influences the courses of the academic careers of millions of students and thus the degrees of certification they may attain. It virtually determines the 'success' people may achieve in later life because, in the United States at least, opportunities to 'succeed' are, by and large, open only to those who have the proper credentials, that is, university degrees, professional diploma's, and so on.<sup>77</sup>

The impression is made that I.Q. tests measure something independent and unalterable, divorced from culture and environment. This notion is not in itself 'spurious but incomplete.'

1. It fails to take into account that human creativity depends on intellect but also crucially on an interplay between intellect and other modalities of thought, such as intuition and wisdom;
2. ...[it fails] in that characterizes intelligence as a linear measurable phenomenon that exists independent of any frame of reference.<sup>78</sup>

So what we call intelligence in this respect is no more than a particular view on what it is. A view that leaves out anything that is not measurable in the test.

It is true that machines perform tasks which earlier we would have called exclusively human. The question is not so much if they can do better mathematics than we (what about developing new mathematical systems?), but that we must decide to what extent we let machines do work that we used to do. Especially where human relations, ethical decisions, aesthetic decisions (art, literature), etc., are concerned, machines have no role to play in decision making.

But to go back to Habermas, the rationalization process seems to lead us away from this responsibility. Science and technology (in reality ambivalent things) function as a 'transparent background ideology'. Science and technology themselves are rarely questioned, although we have enough clues that the basis on which they stand are pragmatically effective but not at all absolute.

The questions here are not so much technological, but they are ethical. It is ethically wrong to let computers decide which village in Vietnam was to be bombed and which not, or to limit the view on history only to those archive information that can easily be fed into a database system.

The question is not so much whether our privacy will be protected when we have the possibility to put everything into a database, but to realize that outside the (often necessary) reductions of reality that we need for the formulation of scientific concepts there is a world which may not be accessible by means of scientific and technological rationality. In other words to be less arrogant, and to admit that our powers of understanding are limited.

This does not mean, of course, that control over nature is bad, it is not. But when it leads to dehumanization, in the form of reduction of also human nature to a quantifiable concept, we do ourselves harm if we let that happen.

### 3.7. Conclusion.

It is clear that if any public control must take place, the stress will be laid on application rather than on development. That is not to say that there can be no interference in R&D but that companies and research institutions need a certain amount of freedom in order to develop new technologies.

At most certain types of research can become prohibited. But that can only happen in very rare cases. Subsidies can be granted

to certain research projects and certain projects can be initiated by public institutions. But overall control of R&D is impossible and undesirable.

The discussion is therefore not so much about the principle of a certain mode of thought and its effects for society. There are many steps in between. One area is the difference between the development of certain technologies and its application. If it is left merely to the free market we may end up with very *incomplete* technologies. As I have argued in chapter two, certain technologies are not so much wrong or bad as well as incomplete. The fission reactor is a good example of an immature technology. Since its side effects cannot as yet be properly controlled, if they ever can. Nuclear technology can mature, however, beyond this point with the fusion reactor.

It is applications and their use we most of all want to control and direct therefore we need a way of decision making which does not as such replace market mechanisms and other ways of choice, but which supplements and directs them. This can only be done in openness and via democratic mechanisms, so that a 'practical' discourse can take place.



The above is not meant to be a song of praise of late-capitalism; there are still enormous problems with it. But it serves merely to show that the kind of very abstract analysis like that of Habermas has severe limitations. It fails to signal real movements in society. There is a problem of the difference between practice in real life and theoretical technique. Therefore I do not believe that in present day industrial societies democratic decision-making is merely a process of legitimation. It still has real possibilities for improvement.

The outcome of capitalist development should be that there is decentralized, smaller scale production, subjected to 'democratic' decision-making. The problem with parliamentary democracies as they exist in the west is that there is no real involvement of the people in actual decision-making. As we have seen above there is an alternative to that in the form of technologically enhanced citizen participating. I will deal with another alternative in relation to the control of technology and its applications later. Private initiative does not have to be abandoned, on the contrary, but that technology and science are used to bring production and social ordering under control of the people. Habermas is right that therefore restraints on communication on all levels should be removed as much as possible.

It is in the field of application that public control effectively can take place. For instance certain applications can be slowed down or speeded up according to need. A government may decide not to apply for instance nuclear energy, because of the risks involved given the state of the art of nuclear devices.

The overwhelming problem with democratic governments and its subsequent methods of decision making is the element of expertise combined with moral capacity. Mere technological expertise is not enough to be able to make valuable decisions about anything. The classical notion 'virtue', is indispensable.

But while the people and their representatives may have virtue they often lack expertise. Even a parliamentary representative who is more or less specialized in a certain field, is often not specialized enough to make a good judgement of a case, or to decide between several conflicting pieces of advice.

Moreover there are the problems of alienation and ideology which go hand in hand with technological developments, especially with developments of information technology as I have tried to indicate in this chapter. These ideological elements often disguise possible roads to follow and it needs very much virtue to look through them.

This concludes the first part. The theories we have examined clearly show a number of problems which exist with technology and science today, especially with information technology which seems to be a center of technological and industrial development. As far as proposals for solutions are concerned, the level of abstraction and also the bias of especially the theories of the Frankfurters is such that no practical solutions are possible.

Although the pernicious effects of technology can be controlled, according to these theories it is not clear how this is done. How can the effects of alienation, pollution and restraints of mental and physical freedom because of technological developments be diminished. An obvious conclusion, which is not entirely out of line with those who propose power- or domination-free communication (although they deny it as insufficient), is democracy. In the following chapters I will examine, with as an example information technology in relation to privacy and personal freedom, the possibilities of a 'critical practice' regarding the control of technological applications in society.

#### 4. Democracy.

##### 4.1. The Problem of Control.

Although some of the criticisms formulated in the critical theory as I discussed it above are sometimes overstating the issue of science and technology, they show some of the difficulties connected with an unchecked application of technological and scientific findings and above all they show the danger of a single-minded belief in science and technological rationality. However, the critical theory gives us no direction to follow. It does not want to give any direction beyond the critical practice of theory itself, which was the only practice recognized by Horkheimer and Adorno, and domination-free communication. No direction can be found also because of contradictions in the intentions of the critical theory, which sometimes point at an ideal non-industrial society and sometimes point at a society which controls an unalienated technology. Therefore we have to look at the possibilities that modern western industrial society offers us. We remain in the realm of enlightenment and one of the most important critical methods of control is clearly democratic decision-making. We have here a method of decision-making which is based on expectations of communication as complete and free as possible and strongly appeals to the sense of

responsibility of the citizens themselves. Democracy implies that a step by step method is used in trying to reach human liberation. This method has two advantages:

1. The meaning of the notion of liberation is left to the particular historical and social circumstances where decisions have to be made. In this way the problem of ideologically polluted language in respect to attaining domination free communication, hence liberation, is avoided.

2. The democratic method provides us with practical advice as to how to improve the human condition. It does not promise complete liberation in the sense of Marx and the Frankfurt School but it provides society with the possibility of making conscious choices which may (or may not) lead to a higher level of freedom for its citizens. If democratic choice is in favour of less freedom, as in the German elections of 1933, this choice can never be a wholly unconscious one.

It goes without saying that this is not without problems, but I believe that the democratic method and its underlying liberal theory are not yet exhausted.

Democracy offers the only realistic way of controlling technology and its applications. Also outside of the problems connected with technology, it may be expected that when people have a greater

say over how society is going to be governed, they become less alienated, less cynical, more responsible and better informed. On the other hand we see in our society that political decision making is so far away from the daily life that the interest in voting and other democratic activities is diminishing. Political and social responsibility do not seem to touch the interests of the average citizen. This brings us to a central question concerning democratic control of technology: How can we have democracy, when people have no expertise, time and interest to be involved in democratic decision making?

The problem of democracy is connected with that of social alienation. The problems of society cannot simply be solved by more democracy and more participation. But democracy in all its forms, whether limited or extended has at least the potential of dealing with the problems of society in a way which is not tyrannical and in which mistakes can, in principle, be corrected.

We may expect that this potential is desirable also for the thinkers of the Frankfurt School especially Habermas. They may disagree with the prospects of democracy in present day society, because modern democracy is seen by them as a product of the capitalist society and its ideology, liberal political theory. Having said this does not immediately imply that democracy has no

influence in capitalist society, nor that it cannot change the basis of that society. According to the Frankfurt School it only means that the prospect of change and hence the construction of a better society is dim.

It is dim because democracy is closely linked to ideology, first the liberal ideology and later, as we have seen above, according to Habermas, technological and scientific ideology. The political discourse concentrates on 'technical' problems and moves away from essential questions, such as how to change the basis of society, how to deal with problems of poverty and alienation, how to deal with inequality, in short ethical problems. It is clear that in our society these concepts are problematic in political discourse.

Therefore I think it is useful to return to Habermas's concept of practical and technological conduct and thought. In the classical theory of democracy, expressed by early liberal thinkers like Rousseau, democracy was not only a means to gain equality and to divide wealth, besides gaining liberty, but also very much a way of introducing a discourse that goes beyond the mere technical, the automatic and inevitable, in political decision making. Elements of morality, and perhaps even vague notions like wisdom may come to play a role, even if it is a small one.

This comes close to the concept of practical conduct. Democracy leaves open the possibility of practical conduct and discourse. It is something decidedly different from Habermas's ideal of power-free communication since power plays a great role in politics. But most democratic systems have the advantage that power is not in the hands of a unified body or a ruler; power is divided.

In the following pages I will discuss the possibilities of democratic control of technology in general. As may have been clear from the above, I believe that when we speak about 'control of technology (i.e. how, when and where technologies are going to be applied)' we actually speak about democratic control of technology. If this control is not democratic then we can speak of autocracy, at least partly. It would be the autocracy of experts, technocrats, etc. Certainly, if we would decide that democratic control is not possible, perhaps we have to give extra thought to the nature of our society. Every policy, every decision taken by governments and large private companies, have effects for society as a whole. They almost always involve decision about technology, even if we use the limited notion of technology. But they certainly involve the rational organization of people and equipment, which fits in the extended notion of technology.\*

\* There is also the legitimate question of, how technology can make democracy (better) possible. Modern technology provides us with new possibilities. In the last chapter I have briefly mentioned the possibilities of teledemocracy. If such systems would be  
(continued...)



In order to be able to arrive at a more explicit proposal about how to establish a more (democratic) control of technology, the conditions for democracy must be evaluated.

#### 4.2. Conditions for democracy.

In his book *Dilemmas of Pluralist Democracy*, Robert Dahl gives the following criteria for a democracy:

...[A]n ideal democratic process would satisfy five criteria:

1. Equality in voting: In making collective binding decisions, the expressed preference of each citizen (citizens collectively constitute the DEMOS) ought to be taken equally into account in determining the final solution.
2. Effective participation: Throughout the process of collective decision making, including the stage of putting matters on the agenda, each citizen ought to have adequate and equal opportunities for expressing his or her preference as to the final outcome.
3. Enlightened understanding: In the time permitted by the need for an decision, each citizen ought to have adequate and equal opportunities for arriving at his or her considered judgement as to the most desirable outcome.
4. Final control over the agenda: The body of citizens (the demos) should have the exclusive authority to determine what matters are or are not to be decided by means of processes that satisfy the first three criteria. (Put in another way, provided the

\* (...continued)

implemented in the now mainly pluralist representative systems, it would signal a reemergence of direct democracy as a part of the total process of democratic decision making.

But as Arterton remarks, also television held the great promise of 'a revolution of information for citizens', a promise which is unfortunately not fulfilled. (Arterton, *ibid.*, p.16.) Where informative debates were expected, political commercials emerged leaving the citizen with all but better knowledge.

demos does not alienate its final control over the agenda it may delegate authority to others who may make decisions by nondemocratic processes).

5. Inclusion: The demos ought to include all adults subject to its laws, except transients.<sup>79</sup>

These conditions are truly ideals. We all know that they are not fulfilled in our 'real existing' democracies. To take the quite obvious situation about the first condition. Equality in voting sometimes still offers some problems. In a country like France, for instance, certain areas have a proportionally lesser weight in elections (urban areas) than others (rural areas).

The formal possibility of effective participation does not always lead to real participation, to say the least. Many citizens do not vote and do not look for ways to influence political decisions. The turnout for voting is declining over the last twenty years in most Western democracies.<sup>80</sup> Basically the only moment of real influence is the moment of voting. In order to be able to speak of a democracy, participation should have a deeper meaning. That is why the proponents of teledemocracy advertise their technological systems of influence and referenda. They believe that such means give the average citizen better access to political leaders.

The problem of apathy and lack of interest was first noticed in the United States. The so-called American 'popular image' of the

citizen is at odds with the real citizen. This popular image sees the average citizen as " a hard working individual of modest means and independent mind, attentive to public affairs, protective of his own interests but fair in balancing those interests against the interests of others and of the polity in general."<sup>81</sup>

This picture is very far away from the truth. There was in the nineteen fifties an increasing stream of evidence that the American citizen was not as interested in politics as was presumed in the prevailing ideology of the day.

As a result of these findings a new direction of political theorizing came about. It was directed towards the rule of groups or elites. "[T]he key characteristic of this model of democracy was that no single group or minority coalition of groups dominated in all important areas of political decision."<sup>82</sup> The democratic potential of these ruling groups or elites is that they are more committed to democratic principles than the people they were supposed to represent. The process of government consists in this view in bargaining and compromise.<sup>83</sup>

The opportunity to obtain an enlightened understanding of the issues at hand is difficult even for politicians. Sometimes the

problems connected to the current issues are so complex that it requires a specialised education in order to be able to choose between options. Economic issues are a good example. The ever ongoing discussion between economic schools as to how avert or ameliorate economic crisis shows us the difficulties experts have with such problems, even if we discount ideological biases which exist between the various schools. How then could the average citizen decide between the existing options? I will return to this problem below.

Final control over the agenda is very difficult. Most citizens have only some control over the agenda again at the moment of voting. They vote for candidates or parties, and doing so they implicitly vote for an agenda as seen by these candidates or parties. Only through membership of a party agenda setting can be influenced between elections, if the party consults its members frequently enough.

The condition of inclusion of all adult citizens in the demos is perhaps now fulfilled in most democratic countries. But then only relatively recent. In the United States, Negroes were excluded from voting for a long time. Moreover, also not so long ago in Switzerland women were excluded from voting. In 1971 a federal law was accepted which gave women the right to vote. However,

in some cantons and local communities women are still excluded from voting.<sup>84</sup>

The problem of how to improve on the present situation, and how to establish true democracies which come close to the ideal is subject to intense discussion. I cannot and do not want to give final solutions. I believe, however, that there is a possibility of improving the mechanisms of democratic rule.

#### 4.3. The pluralist model.

The 'plural-elite' theories of democracy have two advantages over other theories, according to Margolis. "1. Their empirical basis leads to realistic assessments of citizen's abilities to govern; 2. their emphasis on procedures to assure open competition among elites leaves citizens with a wide range of choices for leadership."<sup>85</sup>

Margolis notes that these procedures are in itself a safeguard for democracy. He proposes five conditions which have to be observed when trying to improve democracy:

1. ways have to be found to control the large public bureaucracy;
2. the military's control of budgetary resources and technical knowledge has to be eliminated;

3. the concentration of wealth and income, especially in certain groups and powerful corporations (the ruling class?) has to be controlled;
4. the society's resources which are assigned to the underprivileged in society have to be increased to a level where these underprivileged have a chance to participate in the political process on an equal basis with other groups;
5. all of the above have to be managed "within the limits of natural resources available for development at reasonable economic and environmental cost."<sup>86</sup>

A (marxist) point of critique would, of course, be that the 'plural-elite' theorists have no attention for class-differences that actually explain the difference in possibilities in participation in the bourgeois democratic system.\*

In Western industrialized democratic countries the term democratic control is mostly understood in terms of controlling

\* I think we do not have to go as far as that, but I believe that the above points should at least be taken into account by the 'plural-elite' theorists. The notion of class-differences would not only clarify the differences in the possibilities in participation in a democratic system but also explain, at least partly, the actual lack of motivation to participate. People belonging to lower strata or classes share often the experience of having no real possibilities of influence. They therefore do not vote or participate in political activities, or they tend sometimes to side with parties and groups which are already powerful. Two clear examples are the United States where clearly the Republican turn-out for voting is higher than the Democratic turn-out, although the democratic party is estimated to have more potential supporters than the Republican party (mostly from the lower strata). And Britain where the conservative Thatcher government has been in power for more than ten years, thanks to support that came for a large part from the workers and lower strata in Britain.

the enormous government bureaucracy. In relation to the theories that I have discussed in earlier chapters this control is necessary for a number of reasons:

1. Capitalism is moving to a bureaucratic society of a particularly stifling kind. What I call a bureaucratic society is a variation on the prediction of Schumpeter\*: the end of entrepreneurship and the take-over by bureaucratic managers both at the government and at the corporate level. The difference between the private and the public sphere tends to disappear and democratic institutions are rendered powerless because of bureaucratic technicalities.<sup>87</sup>

2. This movement towards a totally bureaucratic society with its patterns of rationalistic legitimation by means of science and

\* There are in Schumpeter's view economic reasons which may, although not merely by themselves, bring about the end of capitalism. These reasons are technological development in combination with an increasing concentration of capital, the emergence of the giant company. This results in the disappearance of the entrepreneur, who created these companies in the first place. This is not very different from the point of view of Marx who maintained that socialism is only possible when the forces of production are sufficiently developed, and that the actual change to socialism, when the time is ripe, is a political and not an economic process.

Within the political system there exists the possibility of changing the (socio-)economic system because the voter may implicitly vote for options which he cannot assess properly and which may be not in his direct interest. (For Schumpeter, workers and capitalist share interests in the capitalist system, in spite of their apparent differences.) This is so because he may be persuaded by the politicians he is voting for and because the results of his choices are not immediately felt. The psychology of the bourgeoisie, according to Schumpeter, is not fit to function as the leaders of men as the feudal lord could or his counterpart the politician can. The bourgeoisie is basically rationalistic and *unheroic*. Schumpeter predicts the emergence of socialism. A socialism that is not necessary egalitarian, but centers around a central authority, the 'ministry of industry'. See Schumpeter, Joseph, *Capitalism, Socialism and Democracy* London, 1943, p. 134-6.

technology induces feelings of alienation and powerlessness in the citizens. Although bureaucratic activity can be enhanced and made quicker through modern technology, it may not make society easier to understand let alone easier to direct in a democratic way. A meritocratic elite may (silently) come about, which gains a level of control that is unsurpassed because of the aid of modern information technology.

3. The absolute control by such an elite may inhibit free development of not only political, social and cultural ideas but also of scientific and technological ideas that are not in the line of its direct interests.

In order to keep such developments at bay the problem of expertise has to be discussed. If we believe that, in principle, the people are the ones who should rule, we have to solve the problem of how they can rule in a world where they are confronted with problems which require a high level of specialised expertise. The problem of controlling technology is also a problem of expertise.

There is no doubt that when even an institution of representatives of the people, like a parliament, has great difficulty assessing the depth of certain key problems, as discussions about for instance nuclear energy, disarmament, and



other key issues demonstrate. The people who bring out their vote for them or in any other way are asked to decide over policy matters find that they have great difficulty to do so.

#### 4.4. Technical expertise, moral competence and virtue.

In discussing the necessity of control of nuclear weapons, Robert Dahl touches upon difficulties of democratic rule. He points out that some issues which are of ultimate importance, like decisions about the use of nuclear weapons, are so complex that it seems to be impossible to deal with them in a democratic way.

[T]he democratic process has clearly failed to function in controlling what may well be the most important decisions that will ever be made on this earth. Because of the boundless complexity of the issues involved in these decisions, perhaps the democratic process is inherently incapable of controlling them, and others of similar complexity.<sup>88</sup>

It may be necessary, therefore, to leave control of these matters to those who are competent. In other words to allow for a 'hybrid political system' where democratic rule and rule which is *not* democratically controlled together. Dahl observes that this is already a *de facto* situation. Democracy and meritocracy go together in modern democracies, and this is not only the case where nuclear weapons are an issue. Specialists often exercise more power than non specialists, such as the voters. The argument of guardianship as opposed to democracy is that often

wise and virtuous decisions cannot be taken in a democratic way, that it is better to have wise and undemocratic decisions than democratic but unwise decisions.

In a state governed by guardians, much in the style of Plato's Republic, expertise in certain complex issues could be combined with wisdom, i.e. moral competence and virtue. Only those who are 'qualified' should rule. Being politically competent means that three qualities should be present:

1. moral understanding, i.e. knowledge of the proper goals that a government, presenting the interests of its subjects, should seek. This should be combined with the desire or disposition to act upon these goals, i.e. virtue. This results then in,
2. moral competence. These two are not enough. They should be supplemented with practical knowledge of how to reach these proper ends. This leads to,
3. Technical or instrumental knowledge.\*

If we accept that not everyone has the possibility of moral competence, than we should be strongly inclined to do away with democratic rule.

\* *ibid.*, p. 25. Dahl observes that these criteria were initially proposed by J.S Mill, in his book *Considerations on Representative Government*.

But the view that there is no fundamental equality among human beings in this respect is unacceptable. This is so not only on moral grounds, but also that we may expect that only the private individual, when in his full mental capacities, can define and properly defend his own interests. Therefore, giving the defence of interests of citizens in the hands of an uncontrollable government is an abomination.

Meritocrats or technocrats suffer from a number of limitations. They have, like every other human being, the possibility of moral understanding even moral competence. But their technical (or technological) knowledge has the tendency to limit their views.

There is no science or philosophy that enables one to rule justly. Plato's ideal of the unification of moral and instrumental understanding does not exist, and any claim in that direction is wrong.

But the weakness of such claims could easily be shown to the satisfaction of most of us by a simple test: let them explain what their policies would be in a dozen different areas of policy, let them be subjected to examination by experts in each area, and let us be the judges of their performance.<sup>89</sup>

The probable outcome would be widely differing proposals among the claimants, which in their turn also differ with the experts ideas about the issues.

A third limitation is that instrumental knowledge rests upon certain world-views, which in themselves are not necessarily scientific. Views which may be not at all compatible with the problems at hand and the decision which should be taken.<sup>90</sup>

Another, but similar, consideration is proposed by Shils in his book *The Torment of Secrecy*, he proposes a certain amount of educated 'amateurism' in the government, on high and lower levels, in a plural society. Not only is specialization in a certain field too narrow to be able to rule wisely, specialization of task and training is often characterized by an absence of concern for the fields outside the area of expertness.<sup>91</sup>

The amateurs attitude is a necessity for freedom. It is obviously not the sole precondition. The amateur attitude is compatible with the utmost contempt for the mass of the population and the denial of their claims to dignity and justice. Amateurism is compatible with frivolousness, irresponsibility and incompetence to a degree great enough to destroy the social order, and it often threatens to turn into dilettantism. It is compatible with cruelty. It should not, therefore, be interpreted as an inevitable determinant of a regime of liberty. It is the underlying attitude of amateurism rather than functional amateurism that is so important to liberal society. It is the disposition and sense of affinity with a variety of fields of action which is perfectly compatible with specialization but which appreciates the dignity of spheres other than that in which the individual is specialized. The amateur attitude towards other fields is perfectly compatible with specialization but which appreciates the dignity of spheres other than that in which the individual is specialized. The amateur attitude towards other fields is perfectly compatible with reasonable specialization in one field, and without that combination modern liberal society would have a very hard time. The combination protects the relative autonomy of the spheres, acknowledging the value of the activities which make them up,

providing the motives for the concern for one's own and respect for others.<sup>92</sup>

These considerations should be enough not to trust in any expert rule, however indispensable expertise may be. There is also the problem of virtue. According to Dahl it is the willingness to act selflessly in favour of the interests of others. There are many examples that this is a not uncommon phenomenon among people, but to trust in it is contrary to experience with rulers, since power tend to corrupt and absolute power corrupts absolutely, according to Acton.

Dahl proposes a body which has to accomplish a number of objectives helped by technology adapted to a democratic goal. This technology clearly is an information technology which connects all interested citizens to this body, so that they may be able to influence decision-making.

The objectives are:

1. To ensure that information about the political agenda, appropriate in level and form, and accurately reflecting the best knowledge available, is easily and universally accessible to all citizens;
2. To create easily available and universally accessible opportunities to all citizens to influence the informational agenda, and to participate in a relevant way in political discussions.
3. To provide a highly informed body of public opinion that (except for being highly informed) is representative of the entire citizen body.<sup>93</sup>

The centre where this information may be received and relayed back to the public could be an Information Institution which is concerned with electronic data-gathering and dissemination.<sup>94</sup>

This proposal is not without problems. Geraint Parry remarks:

The hopes of the most fervent direct democrats are likely to prove unrealistic. Developments in communications technology so far suggest that politics is as liable to be treated as an entertainment which competes with other entertainments. A modern Plato would probably perceive the 'fickle' public as 'zapping' from one channel to another to avoid public affairs (with the concomitant fear that it would use its voting button in the same way).<sup>95</sup>

These technological possibilities would probably not serve their purpose to the full for the voting public as a whole, unless they can be forced to watch the channel where public affairs are dealt with. This is an unlikely possibility. It would still be an extra opportunity to give information to those who want it.

Dahl furthermore proposes a highly informed body, of 'amateurs' in Shils' sense, which is representative of the entire citizen body. They would be chosen by a random process, in such a way that they according to statistical standards would mirror the whole

\* As I will discuss later at greater length the function of such an institution is that all essential information would be essentially controlled by that institution (through its own activity and the data surveillance it would perform at both public and private organizations).

For outside organizations it would be very difficult to tamper with the information available (although not impossible). Aside from guaranteeing protection of personal data, it could display requested information in levels of difficulty. In this way citizens with very different intellectual backgrounds would be able to receive relevant information on their own level.

population. This minipopulus might decide on an agenda of issues according to the information that is gathered among the citizens. According to Dahl a minipopulus could exist at any level of government.<sup>96</sup>

The random process of selecting people for official duties is certainly not new. Rousseau and de Montesquieu already proposed such methods and claimed that they were democratic.

'Election by lot,' says Montesquieu, 'is democratic in nature.' I agree that it is so ... Election by lot would have few disadvantages in a real democracy, in which, as equality would everywhere exist in morals and talents as well in principles and fortunes, it would become almost a matter of indifference who is chosen. But I have already said that a real democracy is only an ideal.

When choice and lot are combined, positions that require special talents, such as military posts, should be filled by the former; the latter does for cases, such as judicial offices, in which good sense, justice, and integrity are enough, because in a State that is well constituted, these qualities are common to all the citizens.<sup>97</sup>

When the complexity of issues increases the ease with which democratic decision can be made decreases. Already the simple fact of the size of population and of the geographical area, that even the somewhat smaller democratic nation-states cover, asks for a democracy of delegates, or in modern terms a parliamentary oriented democracy rather than a system of direct consultation of the citizens. According to thinkers like Madison, this is an advantage.

...[A] pure democracy, by which I mean a society consisting of a small number of citizens, who assemble and administer the government in person, can admit of no cure for the mischiefs of faction....Extend the sphere, and you take in a greater variety of parties and interests, you make it less probable that a majority of the whole will have a common motive to invade the rights of other citizens; or if such common motive exists, it will be more difficult for all who feel it to discover their own strength, and to act in unison with each other.<sup>98</sup>

This argument is still valid to an extent. The only advantage to size is that variety is more likely to occur, and consequently tyrannic rule becomes more difficult. But this advantage of size is not anymore a fail-safe protection against totalitarian or tyrannic rule, as Nazi-Germany, grown out of the democratic Weimar Republic, has proved.

Size and parliamentary democracy almost necessarily cause a certain degree of alienation because the citizen is not directly in touch with political life. This is complicated with the already mentioned complexity of issues, so that also in parliaments we have delegates who are more or less specialized in the various areas where issues arise. The result is that the ordinary citizen has at least difficulty in understanding the issues and their possible (or proposed) solutions. A further delegation of authority to experts, a situation that seems to be in process today, leads to increasing alienation of the citizen from government. Then a meritocracy may come about, in the guise of democracy. A kind of guardianship, as Dahl calls it, might arise that is for all



practical purposes indistinguishable from authoritarian rule. Some forms of 'quasi-guardianship' already exist in modern democracies. It is clear that without these committees society cannot function. They are committees like the Supreme Court in the United States.<sup>99</sup>

In the judicial system the reason for this is clear. Judges, especially when they are the last instance of judicial decision-making should be shielded of from the turbulence of democratic politics and party politics. Their independence from interest groups should be ensured. In itself this is no guarantee that the judicial system will really work in an unbiased way but it is a necessary condition.

On the whole the working of the judicial system is subject to indirect control, via the legislative and because the proceedings are normally public. This means that the people, and when they are not technically competent aided by experts in the form of journalists or publications by legal experts, can exert indirect pressure on the judicial system, be it in very general terms. The people working in the judicial system are usually bound by a strong moral code enforced by peer councils, which are difficult to avoid.

So the guardianship of the judicial system or in a strict sense a supreme court is really very limited, and is not designed to initiate action. This system is seen as indispensable for the functioning of a democratic political system, because it is possible to sue the state itself, which has to subject itself to the verdicts of a court.

The system of the separation of powers, to which this discussion refers, seems to work well in respect to the functioning of the judicial system. It maintains the existence of limited guardianship balancing the executive and legislative by holding them to the laws they have made and execute, and by testing lower laws against higher ones, in the case of judicial review.\*

In most modern democratic states the abuse of the judicial system by government agencies is by and large impossible. This is one of the arguments in favour of a separation of powers.

The notion of democracy that is implied by Dahl's proposal shows, as I have said above, the possibilities of control over technological applications and may be seen as in between a direct

\* Also in countries where judicial review is not established as an institution it is in reality practised, only not in the form it takes in the United States. In the Netherlands, for instance, this task is performed by the 'Council of State' (Raad van State) in a mode that is quite different from that in the U.S., together (depending on the case) with the 'High Council' (Hoge Raad) which is the highest court.

and representative democracy. I think that aside from political or representative democracy and democratic institutions like workers self-determination citizens' committees could be involved in democratic decision-making. This can, according to Dahl, happen on all levels of government, and in all sectors of society, as we shall see below. The stress would be laid on political democracy, since it is on that level that most general decisions are taken. Still citizens' committees can also be consulted on other levels than the political.

One objection to the use of citizen committees is that they themselves have to be controlled, somehow, and that this would along traditional lines involve a system of voting with possibilities of impeachment or something like it.

Technological decisions and control over highly complex (and technological) bureaucratic structures is something that goes beyond the abilities and concern of the average citizens. Often the decline of citizen-participation is seen as one of the failures of modern democracies.

As in a system with jury-duty, citizens may be required to spend time to learn the basics of the area of expertise about which decisions have to be taken and over which control has to be

exercised. They would have to take part in a council that checks the workings of the institution(s) to be controlled and proposes ways to improve its functioning. Participation then gets a more precise meaning, namely the continuous advice and taking part of decision-making required of the polity as a whole in an institutionalised form. This does not mean that the 'normal' process of representative democracy, with a parliament and an executive which interact with interest groups, has to be abolished. On the contrary, institutionalized citizen participation combined with normal representative democracy, may enhance decision-making because an element of general interest is (re)introduced in society.

There, however, are some elements in a complex democratic society like ours that have to be taken into account, when we consider citizen participation in the form of committees.

#### 4.5. Controlling technology.

When we talk about the problems of 'industrial society' we implicitly talk about technology. Typical elements of industrial society are the change in personal relations and the position of the individual in respect to previous societies. The individual person has become autonomous and isolated.

These phenomena can be seen as a result of industrial society with its ever increasing division of labour. This has caused the breakdown of the earlier methods of production found in the guild system and agricultural production in a feudal setting and ultimately the destruction of the extended family.

The notions of individuality, as they were proposed by many thinkers in the renaissance and in the enlightenment period, and putting into practice in modern capitalism summoned a large number of problems. Alienation belongs to the more serious of them. Very often the individual is perceived as standing on the losing side of the struggle for control over his environment with impersonal institutions and powers.

There have been situations where, because of alienation and the rational pursuit of private or institutional interests, the most basic interests of the human being have been greatly damaged. Western democratic political thought has always been directed towards the avoidance of tyranny. Tyranny is usually defined in such a way as to say that individual interests are damaged by the dictatorial powers of a government.

But we can go much further than that. It would not be a strange thing to say that the interests of large corporations have the ability of damaging individual interests both of their workers as of the general public. The incident with poisonous industrial exhaust in Bhopal in India is one of the more extreme examples where corporate interest (private according to the law) were such that no extra protection of the population and workers was seen as desirable.

The arbitrary influence of corporate action on the life and interests of individuals can be seen as a form of tyranny. It can be seen as a form of tyranny because no *specific* justification of its actions is necessary. Still the demand for justification of its actions would seem stronger "the more a decision departs from legitimate expectations. The demand is also stronger *the more a decision harms individuals*. ...Decisions that most dramatically depart from legitimate expectations and that produce extensive harm to individuals require the strongest justification."<sup>100</sup>

\* Soltan (1987) proposes a supply and demand model in regard to justification and tyranny. The source of the demand for justification is the potential or actual violation of the rights of the individual. There is a balance between this demand and the supply of justification: "A decision is not tyrannous even if it is harmful and departs from legitimate expectations as long as it is justified with sufficient persuasive force." (Soltan, 1978, p.3.) It would not be difficult to find examples of situations where authoritarian governments (or guardians in Dahl's terms) would be so aware of the collective and private interests of a population that they would take farseeing and enlightened measures against such arbitrariness on the part of large and perhaps even small privately owned corporations.

In the light of this we can repeat the obvious remark that it can be maintained that no other person can claim to have better knowledge of another person's interest than that other person himself (children and mentally retarded people are of course a different class in this sense). Democracy is supported by this claim combined with the principle of political equality.<sup>101</sup>

A solution to the above mentioned problems can be found in the democratic organization of society, which has to go a great deal further than merely political democracy as we know it now. There are strong arguments against a democratic, decentralized system which would come about when more sectors of society become democratized. Soltan formulates this in the following way:

A decentralized, piecemeal decision-making system tends, first of all, to suffer from the problems of...the logic of collective action. Even as each special interest gains advantages from the state in its area of interest the effect of the granting of advantages to a broad range of groups is to make them all worse off than they would otherwise be. Furthermore, a decentralized pluralist system of this kind favors decisions whose benefits are concentrated and costs dispersed, even if the total costs outweigh the benefits. It also blocks decisions whose costs are concentrated and benefits dispersed even if the benefits outweigh the costs. The only solution seems to be to centralize decision-making and to increase the power of central authorities relative to the various specialized groups. This is the main argument in favor of various forms of authoritarianism in countries in which democracy is not fully institutionalized (especially the developing world). In more stable democracies it has been used as an argument for strengthening the executive (the Presidency in the U.S.), strengthening and centralizing

political parties and develop neo-corporatist tendencies in the process of interest articulation.<sup>102</sup>

If this is true than the use of democratic institutions of lower levels of government and administration as well as on the highest level may be a necessary counterweight against the centralization of power in the hands of only a few.

The existence of citizens committees on key places within an administrative structure is not incompatible with a certain element of centralisation. And with the application of modern information technology, it does not even have to slow down procedures. The technology that can bring about a strictly controlled society may also give the power of control in the hands of the citizens without impairing the ability to react quickly and adequately to changing circumstances.

The guarantee of private life in the face of the ever increasing power of a government and other interested more private organizations to interfere with a person's freedom and private life, through information technology, seems to me an interesting case for a study in the possibilities of citizens-committees. Therefore, in the next chapters, I will deal with the debate about data-protection and discuss several legislations of a number of countries that try to cope with this phenomenon.



## 5. Data protection.

Since the end of the 1960s the issue of data protection has been quite important. This issue resulted in a number of publications and subsequently in legislation in a number of Western countries.

The problem of data protection\* came about when the powers of surveillance of the state, but also of private organizations and companies were greatly enhanced by the large scale appearance of the computer. The problem of data protection is in the first place a problem of information technology.

The problem can be stated as follows:

1. There is an increased surveillance of the individual,
2. Information is held about the individual which may be used or abused to force him to do or to comply to things which he would in other circumstances not do or comply to.

\* When we talk about data protection we always mean by that term the protection of the individual from the use or abuse of data about his or her person or private life stored in databases. The term 'data protection' is then wrong. We mean the protection of individual privacy as far as the collection and dissemination of data is concerned. In French literature it is called '*La protection du secret de la vie privée*'. (Kayser, *La Protection de la Vie Privée*, Paris/Aix-en-Provence, 1984, pp. 12-15). It seems to me that this terminology, although it is somewhat unwieldy is more correct, although it points only at one aspect of privacy or private life. However, for the purposes of this study I will continue to use the term 'data protection' because of its wide use in the above mentioned sense.

3. Information is held by public or private organizations which is not necessary for reaching the goals of these organization. This information increases their power over the individual.
4. People do not want information about them to be held outside their power to decide whether it can be disclosed or not.
5. Information may be held on people which they would never want to disclose. This information may be quite irrelevant and simple, but disclosure may cause embarrassment.

The monitoring of personal data is a form of surveillance that is exercised over the individual. The purpose of surveillance is social control. The problem is stated in a negative way. It is as though the gathering and storing of personal information is in itself a bad thing. But this is not necessarily so. Surveillance and social control are not always connected with manipulation or repression. However, most forms of social control, connected with the problem of data protection "have to do with the enforcement of norms. That is, surveillance systems ... mainly work to monitor compliance with the standards of behavior, and to enable organizations to promote what they deem desirable social conditions or practices."<sup>103</sup>

An obvious example (out of many) are the British police forces. They have established a computer system which holds private

information about a large number of people. The Police National Computer Unit holds besides criminal information, information on citizens who have never committed any crime. To every record additional information may be added as to which political associations the person belongs to, etc. In short anyone who is in the opinion of the police on local or national level worthwhile to keep an eye on is in the PNCU.<sup>104</sup>

When the creation of PNCU was announced *'Police Review'* remarked that it: 'is to be far more comprehensive than any other computerised intelligence service in the world' (5.5.72), and went on to describe this general development in policing: 'Police intelligence is now forward-looking, anticipating who is going to commit what, when and where, and because it is so purposeful it is also frequently libellous... Much of the information is personal details of a suspect, his family associates, way of life and although it may seem to trespass on the freedom of the individual it is the bread and butter of successful policing.'<sup>105</sup>

In principle, police organizations are ultimately controlled by a legislative body. Abuse of information could, again in principle, be brought to the attention of a parliament which can ask for explanation from the responsible members of the executive.

Security agencies are not controlled. They have similar tasks as the police but their internal urge for surveillance and control runs unchecked. They keep records on people which fall, according to Bunyan, into three categories:

i) those suspected of being foreign espionage agents in the direct or indirect (but conscious) employment of a foreign power;

- ii) those employed by the state or in key industries who work on 'sensitive' areas; and leading business people, MPs, and the media;
- iii) those considered to be 'subversives' by the agencies.<sup>106</sup>

The second category is therefore important and has considerable effects on the private life of a person. It is the task of 'vetting' persons who are going to be employed in the bureaucracy and in key (for national security) industries. By giving negative information the whole career of someone may be ruined.

An even greater problem occurs with the third category. It is not very clear what subversion really is. Definitions range from 'the contemplation of the overthrow of government by *unlawful* means', which remains within the limits of legal definitions of unlawful means, to the current definition of subversion:

'Those activities which threaten the safety or wellbeing of the State, and are intended to *undermine* or *overthrow* parliamentary democracy by *political, industrial* or violent means'.<sup>107</sup>

Bunyan remarks that the second definition is no longer restricted to unlawful means, and can therefore mean all activity which is only slightly critical of government. It means an extension of the area of possible surveillance and control of such organizations to perfectly legal activities of citizens, such as trade union and political activities.

The police and security organization are obvious examples with which the problem of data protection can be demonstrated. But one could think also of the databases of large organizations used for advertising campaigns, hospitals or medical organizations which want to keep track of certain diseases and how they develop in the population, tax offices, social security, etc.

The question remains why such levels of surveillance came about. The mere appearance of the computer cannot be the only explanation. There must be a felt need for surveillance.

#### 5.1. The origins of surveillance.

The origins of surveillance can be described in two ways. One is an explanation which shows historical elements that gave rise to the emergence of surveillance. The other is an approach which concentrates on changes of the environment in which organizations work and the relation of the individual with such organizations. The two approaches are complementary, and to an extent overlap.

Historically, the problem of surveillance arises, although not always experienced as such at the time, with the beginning of state intervention in social and economic affairs.

If we look at some developments we can distinguish a development from 'non-intervention' to 'the welfare-state' as the growth of state-intervention in private life. In the nineteenth century 'the state' in various western countries gradually loses its neutral position and after the great depression of 1873 the liberal era of free trade comes to an end. A certain increase of protectionism and the process of securing the flow of raw materials for domestic industries by occupying or dominating large territories in Africa and Asia were the ways in which states intervene in what was in liberalism seen as private economic areas.<sup>108</sup>

It does not stop with these developments. From the economic sphere state intervention extends itself to the social sphere. The upshot of Keynesian economic policy is the securing of consumer markets. Through state payments in the form of large projects which both provide many previously unemployed with an income and improve the infrastructure of a country and a system of social security the state preserves a 'bottom' of consumption which is beneficial for the domestic economy.

Such organization of state intervention requires a large bureaucracy which administrates and records large amounts of data necessary for the execution of the state's tasks. The individual finds himself in a society which is like a large spider-web of organizations and structures which do not only give him opportunities to develop himself but also turn him into an object of state concern rather than a subject.<sup>109</sup>

The individual has lost the connection with the intimate small community of pre-industrial society. Urbanization and the separation of work and residence has eliminated the social control of the small community. In the place of the small community, structures have come about which can give the individual both large opportunities of development and freedom but at the same time can impose a form of control which goes beyond that of the small community. Examples are the standardization of education, social security, the protection of what is seen as vital economic and military interests. These examples have the effect of liberalization and at the same time the tendency to categorize and therefore judging individual aspects as intelligence, diligence, standardized knowledge, incentive, etc. In order to measure such aspects of an individual a whole range of social and psychological testing methods have

been developed, from the most crude to the most refined.\* Even without being overtly authoritarian or even totalitarian modern western states want to know things about citizens, and sometimes not only their own citizens.<sup>110</sup>

Saying this is not in itself a value judgement. It seems to me that the state in modern society has to administrate at least a minimum of personal data in order to perform its functions. The old liberal ideology of individual liberty however, is no longer, as has been noted before, valid for the workings of the state in a capitalist society.

The other approach can be divided in two parts. First there are some writers who concentrate on the balance of social relations. Westin, in his book *Privacy and Freedom*, adopts a model of balanced social relationships which are disturbed through the advance of technology. This disturbance creates problems for privacy not anticipated in the privacy protecting conventions of earlier periods. Westin argues that the desire to restrict access to personal information had a great influence in the framing of the American Constitution.<sup>111</sup> But he does not think, however, that there is anything inherently dangerous in the growth of use of personal data. The wrongs which are connected with surveillance

\* See Chapter 3.



systems are for Westin, merely the improper handling of particular individual cases.<sup>112</sup> The only thing that has to be done is 'restoring the balance'.

Similar ideas are proposed by Arthur Miller in his book *Assault on Privacy*. The balance of social relations is disturbed. Not merely because technological developments have led to the increased flow of information. But also because information is handled in a way which is incorrect. 'Sometimes he seems concerned that personal-data systems collect more data than is really necessary.<sup>113</sup> Elsewhere, however, he seems most concerned about personal data filed without extenuating or explanatory information<sup>114</sup> - in other words, about the dangers of not keeping *enough* data.'<sup>115</sup>

The concept of the balance of social relations seems to be too simple for a real explanation. It does not take into account the 'shift in prerogatives and power involved in the development of surveillance systems. ...Implying that the "wrongs" associated with these systems are simply matters of improper handling of particular individual cases, [] fails to address the larger social effects of these systems.

For another explanation of the reasons for the emergence of surveillance systems we have to go back to the technology discussion of the first chapter. There I proposed the idea that technology is not so much the development of devices and their systematic interaction and use, but that technology is a broader system of organization directed towards control over nature. This includes that part of nature which is human, the individual and society. The underlying motive is the 'quest for certainty', dealing with a contingent world by purposive-rational means.

Rule follows this line of thought by remarking that formal organizations are trying to cope with uncertainty in their environments. They do this by trying to keep track of the uncertain aspects in their environment in order to be able to improve "planning, adjustments, and arrangements and the like so as to achieve their desired result."<sup>116</sup>

...[] Only formal organizations in the modern sense devote themselves so systematically and self-consciously to searching for unpredictable or disruptive elements in the environment, and attempting to master them so as to achieve desired results.<sup>117</sup>

The environment for most if not all organizations is for the largest part made up of people. The uncertainties to be mastered is to what people "deserve" as an organizational response to their actions.

Rule draws attention to the fact that not all organizations have a need for surveillance, even when they deal with a large number of people. For instance, a sports stadium selling tickets for a cricket match has no need for a surveillance system monitoring personal data on its citizens.\* Rule gives a number of conditions under which surveillance systems seem to develop:

1. When an agency must regularly deal with a clientele too large and anonymous to be kept track of on a basis of face-to-face acquaintance;
2. When these dealings entail the enforcement of rules advantageous to the agency and politically burdensome to the clientele;
3. When these enforcement activities involve decision-making about how to act towards the clientele...
4. When the decisions must be made discriminatingly, according to precise details of each person's past history or present situation;
5. When the agency must associate every client with what it considers the full details of his past history, especially so as to forestall people's evading the consequences of past behavior.<sup>118</sup>

The first reason is by far the most important. In a small scale social environment the other reasons would be easier to overcome without resorting to modern surveillance systems. Therefore for Rule in *Private Lives and Public Surveillance* the change of social scale is the underlying explanation for the rise of surveillance as an aid to social control.<sup>119</sup>

\* I deliberately took cricket as an example, because its viewers appear to be quite peaceful in their behaviour. Football is, nowadays unfortunately, a sport that somehow summons violent behaviour in many of its supporters. There screening and surveillance may be felt necessary by the stadiums, selling tickets, but certainly by the police.

The connection between the growth of social scale and surveillance is according to Rule most clearly found in the *centralization* of surveillance activities.

Here most clearly one notes the constraints exerted on mass surveillance by the growth of scale, constraints pressing directly towards increased capacity. These constraints derive from the fact that it fails to hold its clients as fully as possible responsible for their actions. because of this, every surveillance system must aim to accomplish two things. First, it must strive to collect the most 'complete' information as possible on its clients. And, second, it must make sure that clients cannot easily escape measures of control based on such information.<sup>120</sup>

Surveillance, which is the monitoring of personal data, is directed towards social control. Rule warns that surveillance and social control does not necessarily mean 'manipulation' or 'repression'. But 'the forms of social control discussed ..., however, often have to do with the enforcement of norms. That is, surveillance systems ... work mainly to monitor compliance with standards of behavior, and to enable organizations to promote what they deem desirable social conditions or practices'.<sup>121</sup>

According to Rule there are three methods of enforcement which need surveillance:

1. excluding troublesome people from participation.
2. adjustment of privileges accorded to individuals to the risks which they pose for the controllers (an example Rule uses is the extension of credit for credit card owners).

3. actively reach out to curtail behaviour considered undesirable.<sup>122</sup>

The problems lie, obviously, in the gathering and using of private information in order to be able to discriminate between people in the environment of an organization. Exclusion of troublesome people, the adjustment of privileges and curtailing undesirable behaviour is dependent on up to date personal information. Surveillance can result in limiting freedom, intruding in what people experience as their private lives. Privacy and freedom seem to be essential notions in this discussion.

## 5.2. Privacy, freedom and the individual.

Often privacy is only seen in relation to liberty. As such it is also defined in the Universal Declaration of the Rights of Man from the United Nations (December 10, 1948). Privacy is seen in relation to the protection of private life, or family life. And it ought to have legal protection against investigations and subsequent disclosure. Therefore it is sometimes referred to as the 'secret of the private life'. The protection of this secret lies also in the protection against investigations concerning religion and political beliefs and affiliations.<sup>123</sup>

Privacy, however, besides political elements, is rooted in the cultural, social and psychological aspects of our society. Privacy was certainly not considered a value of great importance in every historical period and every culture.\* Western society expressed a gradual concern for privacy, especially in the nineteenth century.<sup>124</sup>

The relation with liberty is very strong. Liberty, as John Stuart Mill puts it, is the protection which is offered against tyranny. Tyranny does not simply take the form of a dictatorship, where all power is in the hands of one person or a small elite. Tyranny can have a popular form, as Mill with great insight remarks:

Like other tyrannies, the tyranny of the majority was at first, and still is vulgarly, held in dread, chiefly as operating through the acts of public authorities. But reflecting persons perceived that when society is itself the tyrant - society collectively over the separate individuals who compose it - its means of tyranny are not restricted to the acts which it may do by the hand of its political functionaries. Society can and does execute its own mandates: and if it issues wrong mandates instead of right, or any mandates at all in things with which it ought not to meddle, it practices a social tyranny more formidable than many kinds of political oppression, since, though not usually upheld by such extreme penalties, it leaves fewer means of escape, penetrating much more deeply into the details of life, and enslaving the soul itself.<sup>125</sup>

The maxim proposed is the society can only interfere with an individual when self-protection of itself or other citizens is at stake.<sup>126</sup> Hence every individual is free to do whatever he/she

\* For a more general anthropological discussion of privacy Barrington Moore Jr.'s book *Privacy, Studies in Social and Cultural History*, Newbury Park, Ca., 1987.

wants as long as it does not interfere with the freedom of other citizens.

The liberty of the individual must be thus far limited; he must not make himself a nuisance to other people. But if he refrains from molesting others in what concerns them, and merely acts according to his own inclination and judgement in things which concern himself, the same reasons which show that opinion should be free, prove also that he should be allowed, without molestation, to carry his opinions into practice at his own cost. That mankind are not infallible; that their truths, for the most part, are only half truths; that the unity of opinion, unless resulting from the fullest and freest comparison of opposite opinions, is not desirable, and diversity not an evil, but a good, until mankind are much more capable than at present of recognising all sides of the truth, are principles applicable to men's modes of action, not less than to their opinions.<sup>127</sup>

The second part of the citation is interesting because it shows another reason why liberty, not only physical privacy but also of action and thought, are necessary. It is the element of truth. The suppression of ideas is wrong because they may be true. Only open discussion can bring out their truth. On the other hand true ideas cannot be maintained as such without open and free discussion, otherwise they become dead dogma.<sup>128</sup>

The two notions which are central are the freedom of thought, action and speech which are only limited where another's freedom to do so is endangered, or when it forms an intrusion into someone's private life. Both freedom, in the form of acting publicly as privacy are important attributes of the individual.

Rule makes a distinction between aesthetic privacy and strategic privacy. Strategic privacy is the information about a person or held by a person which serve as a means to an end or may have future consequences. Rule uses the example of a person who conceals plans for future employment from the present employer or the withholding of ambiguous medical information from someone until certainty is obtained.<sup>129</sup> Strategic privacy can clearly be extended to having political and religious beliefs. Disclosing such information may in some cases lead to difficulties with an employer or restrictions of normal liberties by the state. This is perhaps less privacy in the normal sense. It includes the possibility to withhold information about possible future public actions. It is only partly private. It is private where it concerns what one considers one's own intimate sphere, but it is related to freedom of thought, expression and action where it concerns one's position in work, political action, etc.

The opposite of strategic privacy points at the psychological and more intimate elements of privacy. Rule calls this "aesthetic privacy". It is the desire to conceal personal information as an end in itself. Disclosure brings embarrassment or distress rather than having other effects. Examples are quite obvious, they concern the act of excretion, sexuality and profound emotions.<sup>130</sup>



The impression may exist that surveillance is only a matter of 'strategic privacy' and individual freedom. However, it is not at all farfetched that certain authoritarian regimes use the disclosure of aesthetic private information about their perceived political enemies to harass them, or to put them in a bad public position. This all depends on the official morals of a nation. But examples are easily found in the German and Soviet history and more recently in the United States, which does not even have an authoritarian form of government.\*

The right of protection against investigation about beliefs, political, social, religious or otherwise, and the guarantee of personal freedom, brings us at a very important point. A democratic political system, this means also the real existing democracies, cannot work if its citizens are not free to express their political views. The expression of views is in itself not necessarily a private thing, in the strict sense of the word. Neither are political beliefs, especially when these expressions are voiced in relation to groups or parties - hence political affiliation. But they belong to individual freedom. If citizens are to arrive at 'enlightened understanding' of the issues at hand and as a result

\* The revelations about the private life of Senator Hart during the presidential pre-elections in 1987, were clearly used by his political enemies. It may not be all that unlikely that they were even instrumental to disclose this information, which did not enter all details insofar as aesthetic privacy is concerned, but clearly hinted at them.

of this understanding vote or in any other way try to influence political decision-making then they should have the liberty and the privacy to inform themselves and consider lines of action when needed, individually or as a group or party. Self-determination along these lines is seen as essential to democracy.

Privacy is often seen, as Shils puts it, as an "unpenetrated sphere".<sup>131</sup> This definition causes problems in the eyes of some writers, like Bryant and Dahrendorf. They maintain that democracy and a liberal and plural society are maintained against the background, according to Bryant, of "public values which indicate the relation of its constituent parts to one another and to the society and polity as a whole. Moreover these values require continuous public support even at the cost of some reduction in privacy...".<sup>132</sup>

Bryant then mentions Dahrendorf who, in his book *Society and Democracy in Germany*, analyses the aspects of German society which oppose or stimulate democracy. In the views of Dahrendorf, one of the reasons for an authoritarian disposition of German society is exactly privacy. He arrives at this conclusion by defining privacy in contrast to publicity (*Öffentlichkeit*). Publicity is the realm of social values, which describe general relations between people. Private virtues are not in the same way

general. Private are those separated parts of society, which have an immanent resistance against publicity. Privacy is its own measure.<sup>133</sup>

For Dahrendorf and consequently Bryant, the relation of privacy and publicity is negative, given the resistance of privacy against publicity. Therefore it is possible for Dahrendorf to say that the reason for National Socialism to emerge is the fact that the average German withdraws himself within the four walls of his privacy which is a-political, and does not stimulate him to participate in public life and face its often difficult choices. He goes even a step further and defines privacy as the result of authoritarian rule of earlier periods. The ruler in a pre-capitalist society could rule because he was able to push his subjects out of the political, 'public' sphere into their own privacy. "Divide and rule" considerations certainly played a role. The 'public' became in this way totally dominated by the lord, who himself had of course no real regard for private virtues.<sup>134</sup>

I think that this definition of privacy is somewhat too restrictive. It separates too strictly between privacy in the sense of psychological privacy, in the sense of Rule (aesthetic privacy) and the realm of freedom to develop thought, opinions, and beliefs and expressing them. Moreover, privacy in the sense as

Dahrendorf describes it as an anachronism when applied to the pre-capitalist era. We may safely assume that private life, as we see it, did not exist earlier than about 200 years ago.

To withdraw too much into a non-political privacy might well be detrimental to democracy. It is in fact the opposite of what would be expected for democracy. Privacy is the basis of individual freedom, a freedom which extends itself into the public sphere. The withdrawal in the sense of Dahrendorf is a withdrawal from the public sphere, instead of combining it with private life so that mutual reinforcement can exist. Therefore it is possible to maintain that authoritarian regimes are not in themselves enemies of privacy, so long as this privacy does not express itself in voicing opinions against the regime, i.e. forms the basis of public action. Latin American dictatorships, probably are not much interested in the privacy of their citizens in that sense.

Given this interaction with privacy, individual freedom in the sense of Mill, is indeed essential, to democracy. It is the requirement for a democratic, liberal society. Authoritarian or dictatorial systems do not have such requirements. The opinion of citizens is at best not important to the rulers but mostly it is a potential danger. Unfortunately also in democratic political systems there are parts of the executive which do not favour

political beliefs in certain directions. For instance, in search of terrorists many governments have probably transgressed widely the privacy rights of many individuals trying to look for would be IRA or Rote Armee Fraction members.\*

The link with democratic decision-making is not always obvious. It can be maintained that certain political beliefs are directed against democracy and that some of these beliefs are not explicitly against transgressing the law in order to attain a political goal. Therefore people with such beliefs are a potential danger to the democratic system and the liberties (also privacy) which it guarantees. Hence such people cannot be employed in the government bureaucracy. So a certain monitoring of an individual's belief seems to be necessary.

These considerations are used as a legitimation of certain government policies which involve gathering and storing information about the political beliefs of individual citizens. Still the opportunities to enlarge the scope of such investigation and acting upon it are very large. All kinds and forms of intimidation are possible and the spectre of 'Big Brother' is easily invoked.

\* It is now a discussion in Germany whether persons who express understanding for terrorist organizations and their actions ought to be persecuted or not. Paragraph 129a of the criminal code (Strafgesetzbuch), also called the "terrorism-paragraph" (Terrorismus-Paragraph) can be and is interpreted that way by the German courts. See, *Die Zeit*, Hamburg, Nr.6 Febr. 3d, 1989, p.50.

Such practice does not enhance the citizens' possibilities to engage in political activities which are seen as essential for a democratic system to exist.

One may doubt that (i) privacy and individual freedom are prerequisites for democracy and (ii) that democracy is a prerequisite for privacy and individual freedom. As far as the second point is concerned one could say that also authoritarian or dictatorial political systems could, in theory, maintain privacy rights of citizens. There is some evidence that 'authoritarian systems with universal moral claims on the population are capable of developing *some* institutions that protect ordinary subjects from *some* abuses of power' (underlining by me, Ph.).<sup>135</sup> Today such universal moral claims cannot be made in reality by authoritarian systems. In his book *Privacy* Barrington Moore uses as an example for such a system ancient imperial China, where it seems that such claims could be made.

In all modern authoritarian and dictatorial systems rights of personal freedom connected with privacy are either severely limited or altogether absent and for good reasons for the rulers. It is unlikely that an authoritarian or dictatorial ruler (or rulers) would grant rights against their power to rule or, more properly

stated, their misuse of authority. 'Such rights are both a limitation on, and a threat to, a ruler's dominance.'<sup>136</sup>

Now the objections against doubting that privacy and personal freedom are prerequisites for democracy are clear. A democracy cannot exist without the possibility for its citizens to generate countervailing powers against 'the state' or better their self-appointed rulers. Privacy is not merely 'being on your own at home with your family', it is the possibility to determine one's own affairs and above all defining one's own interests without intervening with another person's possibility to do the same.\* This is the typical liberal notion of privacy.

That is why I think that democracy, privacy and personal freedom are notions which reinforce one another.<sup>137</sup> It is for these reasons that I believe that the guarantee of privacy and personal freedom is not only an essential human right but also a condition for democracy, whatever form it may take. The liberal notion of

\* The notion of 'privacy' is also often used in connection with economic activity, notably with the private ownership of means of production. As such privacy is seen as the basis of the capitalist system.

I do not want to make explicit use of this interpretation of the notion 'privacy', although it can possibly be argued that it cannot be excluded from it. I believe that personal integrity, beliefs, family life and other social and personal relations can be seen as private while economic ownership is excluded from that, since it affects society in such a way as to lead to an unequal distribution of wealth. Here, I do not want to discuss whether this is just and desirable or not.

privacy is, so to say, basic. If it is abandoned, also other basic notions like human rights lose their importance, because the individual human being is in danger of no longer being respected.

### 5.3. The dangers of Surveillance.

The problem of modern information technology is that investigation upon individuals and almost unnoticed intrusions on what we call private are very well possible.

The arrangements which are necessary to protect citizens from the influences of electronic data gathering and processing concerning private data is the example I want to use in order to survey the possibilities of democratic control of technology and more important widespread technological applications.

The problems concerning privacy and personal freedom lie, obviously, in the gathering and using of personal information in order to be able to discriminate between people in the environment of an organization. Exclusion of troublesome people, the adjustment of privileges and curtailing undesirable behaviour is dependent on up to date personal information.



In order to achieve a high level of control, as has been said above, data has to be as complete as it can possibly be. One of the risks is then that also data which is not immediately necessary for the purposes of an organization is being gathered. In the view of Rule, there is always too much data gathered on individuals. Too much data, together with an enlargement of scale, not only poses great risks for someone's privacy and one's grip on one's own life. If the data is not correct or the systems which handles the data does so in a wrong way, the results may be even more dangerous. According to Barron:

The most insidious dangers are those that arise out of the scale of the operation, both in respect of the amount of data that can be stored and the speed with which it can be processed. If the system is faulty, and/or not well designed, the effects of error can be catastrophic. Computers rarely make errors themselves, but they magnify to an alarming degree the mistakes of their users: it has been truly said that 'to err is human; to make a thorough mess of things you need a computer'. In a properly designed computer-based databank it is technically possible to copy information almost instantaneously, without removing or disturbing the original, and the speed with which the data is processed makes it feasible to 'browse' through a large file in a manner that would not be possible in a 'filing cabinet and paper' system. The rapid processing speed also makes it possible to carry out searches that would be impossibly laborious by hand. For example, given the London telephone directory it is very difficult by manual search to answer the question 'who has telephone number 01-387-7030?'. In a computer-based system it is easy. The ability to perform long and tedious searches means that it is possible to establish indirect correlations that are present in the data but not obvious to a visual search also establish serendipitous correlations between apparently unrelated items. Of course this is not necessarily a bad thing - detection of crime depends largely on establishing such relationships - but it poses a potential threat to privacy.<sup>138</sup>

Barron takes the position that all threats posed by mechanical data systems is not the system itself but the people who run it. This notion is somewhat simple, but it does not contradict the views I have proposed earlier. Surely the danger cannot come from computers or database systems as such but they rise from an organizational system as a whole, consisting and directed by people no doubt, trying to deal with an uncertain environment in relation to its supposed goals. Such organizations do not merely maintain their own databases but would be tempted to be able to link their data to data present in other systems. It should not be ruled out that sometimes, under what they perceive as great need or pressure, they may also resort to illegal means to do so.

Barron describes the nature of the threat as follows:

- (i) Illicit access to information with malicious intent by persons not entitled to such access.
- (ii) Unexpected consequences of making information freely available to authorized persons by mechanical means.
- (iii) The use of information for purposes other than that for which it was collected in the first place.  
These are direct threats to privacy. Closely related, though not strictly matters of privacy, are further threats:
- (iv) the danger of basing action on inaccurate or outdated information.
- (v) the danger that the individual will be at a disadvantage in his confrontations with large organizations (public or private) because they have ready access to large amounts of information.
- (vi) the danger that information, possibly collected just for the sake of it, may receive a hallowed sanctity just because it is stored in a computer. ('It must be right, the computer says so'.)<sup>139</sup>

Especially the last point is interesting. It is the result of the ideological impact that science and technology, notably information technology have made. It is connected with the belief that computers can think, have reasons for their own, and possess a superior insight compared with the average human being, as I have tried to make clear in the chapter on 'Good' and 'Bad' technology.

#### 5.4. Remedies.

The solutions or remedies that are offered by most of the writers about privacy and data protection, are at best proposals for legislation. Rule, disappointingly merely hopes that organizations can be brought to a less high level of discrimination so that they do not need so much detailed data about individuals. He hopes that 'a looser, more private world' will come about.

If organizations were not expected to make such highly refined distinctions between people, the need for rigorous data collection would be greatly eased. *The alternative to endless erosion of personal privacy through increased surveillance is for organizations to relax the discrimination which they seek to make in their treatment of people.*<sup>140</sup>

This is the expression of a hope. There are no concrete proposals, for at least legislation, no view of arriving at this situation. An Rule himself remarks that procedural safeguards endure just as long as the social and political circumstances from

which they arose.<sup>141</sup> But whatever the difficulties, bureaucratic surveillance should be limited beyond a certain limit.<sup>142</sup> Unfortunately Rule does not tell us what the limit is, and where it can be found.

Westin, Baker and Miller in their respective books give more concrete proposals. Unlike Rule they do not seem to be disturbed by the dynamic nature of bureaucratic environments and their needs nor by the dynamic nature of information technology itself. Perhaps this is due to the fact that they published their works in a time where developments of information technology did not appear to have such direct impacts on the way organizations worked.\*

Westin and Baker state in *Databanks in a Free Society*, that they see no significant change of the data collected from before the use of computers as in the present day. They fail to see that there is an enormous change in the quality of the data collected.

\* At that time the interactive work with computer programs was just beginning in companies, and mostly only in the United States. The traditional use of a computer was just to replace certain parts of the work, on a 'stand-alone' basis. So certain programs for calculations, stock administration, bookkeeping, etc., were given to the computer together with the data they had to process. This was called 'batch-processing'. It had the effect that the computer stood more or less outside of the companies organization. It was an auxiliary 'department'.

Nowadays we have seen the development of interactive computing, with direct interrogation of databases, etc. This direct communication with programs still changes the whole organization of administrative, and other, work. The use of information technology is more immediate and faster. The term 'paperless office' illustrates this development nicely.

Perhaps the data itself did not change much, but its inherent cohesion is greatly improved because of the possibilities to link seemingly unrelated pieces of data about individuals and groups (see also Appendix 1).<sup>143</sup>

Westin stresses the necessity of analysis and painstaking planning, when information systems are set up. Such rational analysis and planning should include 'provisions for confidentiality of information, restrictions on improper circulation, and sanctions against unauthorized use should be written into the basic legislation and administrative rules...'.<sup>144</sup> The question is who should do that planning, and what kind of controls are built in such planning process?

Miller in *The Assault on Privacy* like Westin agrees that procedural reform is the only and sufficient answer. Moreover he seems to believe that it is possible to built in technological solutions (like password systems, encryption, managing managers, etc.) in order to safeguard confidentiality, improper circulation and abuse of data.<sup>145</sup>

Nowadays we are more than seventeen years further in technological development, and even the most technologically secure computer systems are under attack from what is often

called 'hackers', owners of small computer systems which consider the breaking of all kinds of sophisticated security system a nice sport. The problem with this people is that they are often successful, and can steal important information from all kinds of large computer centres. Even the computers at the Pentagon were not safe from them.

That such measures are not sufficient, does not mean that they ought not to be taken. They make unauthorized access to data, although not impossible, difficult. It must however be realised that they form only a very small part of eventual solutions. The problems with technological solutions are two-fold:

1. It must be decided what the relation is of cost and benefit. It may be that certain technological solutions are so cumbersome that they render the information system useless.
2. It is difficult to decide in all but the clearest cases what level of security should be applied. Certainly a more dynamic decision making body instead of mere procedural arrangements is necessary.

The best protection against abuse of data is *not* gathering and storing it. I will deal with the question of 'what data is really necessary?', in subsequent chapters.<sup>146</sup>

Miller thought also of more dynamic safeguards such as a privacy ombudsman, the limitation of data to necessity and a code of ethics for computer people.<sup>147</sup> An ombudsman would be able to solve problems of control, without having necessarily to resort to a court of justice. Moreover he would be able to provide government with advice on matters of privacy and data protection.

The remedies which I have mentioned above have been of great value for the construction of data protection legislation in many countries. Most reports and studies done in the various countries do not differ in their conclusions much from Westin, Baker and Miller, in their assessment of the problem and the offered solutions (see chapter six and Appendix 2.).

One could have the impression that governments implement data protection legislation not because they find that there are strong reasons, outside of public opinion, to do so. Mostly there are attempts to play down the importance of such legislation.

The reasons for this are not so far fetched. Any body of laws concerning the handling of personal information and the employment of database systems and computer centres in doing

this, is an extra restraint on the government bureaucracy. The constraints are felt in four ways:

1. The measures that legally have to be taken to check on government, and often also private, databases, involves extra work and time of often already constraint departments;
2. The formation of a new 'data protection' bureau or department adds to the already unwieldy state bureaucracy;
3. The execution of data protection legislation, like any other legislation, will put constraints on the government budget;
4. There are branches of the executive, security and intelligence services, which at least superficially are going to be influenced by such legislation. As we will see in the next chapter, such services are invariably left outside the reach of the legislation. The influence is one of public discussion, and possibly of malcontent.

At best it can be expected from governments, that they are inclined to propose legislation in order to get the issue of data protection of the political agenda and return to the order of the day in the cheapest way possible. This does not necessarily mean that the results are invariably poor. But creative moves are not to be expected.

There has been no western government and no, to my knowledge, western political party that has officially stated that



the issue of data protection was unimportant. It seems that all through the political spectrum in western countries. it is considered bad taste to deny the need for it. This has usually the effect that most parties in power have made it one of the special issues mostly expressed as the view of the government and connected to its basic social and political ideology (and if possible excluding other political views from having the right to claim that data protection belonged to their ideology).

The solutions found are almost all concentrated on the procedural level. I believe that this at best a good beginning. There can be no solution to the problem of data protection and privacy when the necessary legal measures are not taken, and no legislation is proposed. The great disadvantage or lack of such measures is that reaction to new developments is always limited.

At best, a data protection agency can advice a government to take further measure, and propose additional legislation when new technologies, and/or new practices concerning the obtaining and handling of personal information develop.

A mere prohibiting legislation can severely hinder all kinds of quite necessary bureaucratic procedures which may involve a certain amount of personal data. On the other hand leaving large

room for all kinds of bureaucratic initiative in this field will create the problems the legislation is supposed to solve, and nothing or very little is achieved.

Therefore a more dynamic approach of data protection and control should be taken. It is necessary that the utmost care is taken that personal information, when needed, is handled with great confidentiality and not abused. This task cannot be left to the various bureaus themselves. That is why the institution of an ombudsman or controlling institution is proposed. But such institutions lack three things:

1. They tend to become specialized in the sense of a limited professionalism. Informed amateurism in the sense of Shils and Dahl would give such an institution a greater edge.
2. Such an ombudsman or data protection institution is not designed to actively investigate possible abuse of personal data. Mostly it is expected that citizens or organizations inquire about possible infringements of their rights, and demand investigation. Usually the information concerned must be supplied by themselves.
3. Within a framework legislation, such a controlling and advising institution cannot react actively to new developments, and must await further legislation.

In the next chapter a number of legislations in western countries will be compared. In order to deal with the criticisms I have made above I will propose in chapter seven a solution, which is in my view both democratic and more effective than the current proposals. There I will propose a solution in the form of a fourth power which can deal with privacy and data protection in a way which does not merely constrains the use of data but which also will be able to define what data is necessary in a given period and how it should be handled.

## 6. Control of Data Bases.

### 6.1. Introduction.

In the last chapter some general and mostly theoretical considerations were discussed, some of which have been influential for the construction of legislation.

In this chapter I shall discuss some examples of legislation concerning the control of information technology in the field of data protection.

Aside from extreme possibilities of abuse of private data, much enhanced by modern information technology, there is a tendency of a large accumulation of personal data in government and private databases. This is necessary in order to be able to distribute in an efficient and responsible way facilities to where they are needed. On the other hand this handling of information outside the influence of the individual himself also very much limits his power of decision over his own life.<sup>148</sup> This power of self-determination is the other aspect of privacy.

The concept of data protection is directed towards the safeguarding of privacy, personal freedom, hence the right of a

person to self-determination.<sup>149</sup> In some respects we can see in this concept the return of classical liberal ideology. In the light of this right of self-determination and the necessity of weighing the interests of the 'social-whole' against those of the individual a number of direct methods for data protection, in a procedural sense, are imaginable:

1. limiting or prohibiting the collection of personal data in certain cases;
2. prohibiting the collection of certain types of data (for example religion, political affiliation, race);
3. prohibiting certain uses of personal data.<sup>150</sup>

In order for data protection to be minimally effective, the person registered should be able to have some insight in what is registered about him and where, what the purpose is of such registration and what the consequences are for him of this registration.

From the discussion in the last chapter, we may conclude that the solutions offered in the diverse legislations are not revolutionary. They limit themselves to procedural and legal remedies for a problem that goes beyond them. Nevertheless we have to find a measure by which we can compare the various countries.

With the proposals of Westin c.s. and Miller we can say that the procedural considerations centre around three main notions. The first is the rights of the individual. What kind of possibilities does the individual have to know what data is stored about him/her, where and how. Moreover is there any active reporting and checking done by the government, or by a data-control institution (ombudsman)? Second, what kind of techniques are included in the legislation? It may be that connections, networks, with foreign data banks are not controlled (data transfer to foreign countries), or that manual files are kept outside the scope of the law. Thirdly, there are the rights and duties of the data banks and their owners. Are only government data banks included or are also private data banks included in the law? Is there a registration duty.

Also in order to limit a description of legislation in various countries I want to look then at a number of categories or questions concerning data protection which can be drawn from the three notions above:

1. Does the law include private as well as public databases?
2. Can individuals demand information about data which is stored in databases?
3. Is there 'illegal data'?

4. Does the law prosecute those databases which store 'illegal' information about people?
5. Is there an institute which inspects data (data inspector)?
6. Does the prosecuting duty lie with the person involved or with the law (data inspection institution)?
7. Does the law regard also data-transfer to other countries?
8. Does the law include personal data in manually processed data files (paper files)?
9. Is there registration duty for data-gathering and processing when personal data is involved?\*

\* Compare with the US Federal Commission of the Department of Health, Education and Welfare *Records, computers and the rights of citizens*, Report of the Secretary's advisory committee on automated personal data systems, Washington 1973: 'There must be no personal data record-keeping systems whose very existence is secret (HEW report, p.41). The commission elaborates this principle in a 'public notice requirement' (pp.57 v.v):

'Any organization maintaining an administrative automated personal data system shall give public notice of the existence and character of its system once each year. Any organization maintaining more than one system shall publish such annual notices for all its systems simultaneously. Any organization proposing to establish a new advance of the initiation or enlargement of the system to assure individuals who may be affected by its operation a reasonable opportunity to comment. The public notice shall specify:

1. The name of the system;
  2. The nature and the purpose(s) of the system;
  3. The categories and number of persons on whom data are (to be) maintained;
  4. The categories of data (to be) maintained, indicating which categories are (to be) stored in computer-accessible files;
  5. The organization's policies and practices regarding data storage, duration of retention of data, and disposal thereof;
  6. The categories of data sources;
  7. A description of all types of use (to be) made of data, indicating those involving computer-accessible files, and including all classes of users and the organizational relationships among them;
  8. The procedures whereby an individual can (i) be informed if he is the subject of data in the system; (ii) gain access to such data; and (iii) contest their accuracy, completeness, pertinence, and the necessity for retaining them;
  9. The title, name, and address of the person immediately responsible for the system.'
- Quoted in De Graaf, 1977, p.205-7.

The following description of data protection legislation of Canada, the Federal Republic of Germany, The Netherlands, Sweden, the USA, and the United Kingdom, cannot be complete within the scope of this work.\* The information about the different legislation is mostly taken from secondary sources, since primary information is sometimes not readily available, but is also written in the original languages which I do not always know sufficiently to be able to read legal texts. I have searched for sources as up to date as possible, nevertheless in the mentioned countries things may have changed, so this data has to be looked at with the thought in mind that they serve merely as realistic examples of possibilities of data protection.

## 6.2. General description of the diverse legislations.

It is perhaps useful to have an overview of the general characteristics of the data protection laws adopted in the various countries. For a more complete overview per country see Appendix 2.

\* I do not claim any specialised legal expertise in the discussion of these examples of legislation. I am fully aware that there may be more far reaching consequences of these legal provisions, about which I do not have the competence to judge.



### 6.2.1. Canada

On March 1, 1978 the Human Rights Act became effective. This act concerns itself with the protection of 'personal information and embodies the principle that the privacy of individuals should be protected *to the greatest extent consistent with the public interest*'.<sup>151</sup> There is a certain limitation on civil liberties built in. Moreover the law is only valid for persons with the Canadian nationality and persons who are resident in Canada.<sup>152</sup> Citizens have a right to demand information about personal data held about them in the government's automatic databases. No reference is made to manual files. These databases contain data which is to be used for administrative purposes. The law requires the annual publication of an index of those governmental (federal) databases which lists the contents of the files and its proposed use. The Canadian government issued guidelines for the implementation of the data protection law. These guidelines include rules about the accuracy of data and the methods of access open to citizens and social science research.<sup>153</sup> "The regulation of federal information banks and their description in the information bank index only applies to records used for administrative purposes. Similarly, the provision for individual access to personal records in government hands only applies to

records used for a decision-making process that relates directly to an individual versus other research and statistical purposes."<sup>154</sup>

The Canadian government, under pressure of the social science community in Canada, reserved large privileges for social science research.

### 6.2.2. The Federal Republic of Germany.

At January 27, 1977 the German federal data protection law, 'das Bundes Datenschutz Gesetz (BDSG)', was enacted.\* The intention of the act is not merely to protect against the misuse of personal data in data processing but to 'guarantee the integrity of the individual when information about his person is handled in an organized way.' The interesting thing about the law is that the *content* of the information is considered to be *not important*. Only the fact that identifiable persons are involved is sufficient to be covered by the law. The law also includes manually handled files when they refer to identifiable persons. The same is valid for data stored by the press of media archives.<sup>155</sup> This is not so

\* The German 'Land' of Hessen was the first state in the world which formulated legislation concerning the use of personal data. See Ulrich Damman and Ralph Brennecke, *Country Report Federal Republic of Germany*, in Mochmann and Müller, "Data Protection and Social Science Research", *ibid.*, p.129.

strange given the level on which gossip-newspapers operate in Germany.

The individual 'Länder' may have their own data protection laws but have to abide by the general principles of the BDSG. These principles are:

a. The processing (storage, transfer, modification, erasure) of personal data is admissible only if permitted so by legal provision (including those of the BDSG) or if the person concerned has given his consent. The most important admissibility criteria of the BDSG are:

- in the public sector: the necessity for the legitimate accomplishment of the tasks of the public bodies involved;
- in the private sector: the purpose of a contractual or quasicontractual relationship with the person concerned or a careful consideration and balance of legitimate interests ("berechtigigte Interessen") of the person/institution who has the data or gains access to them on the one hand and the threatened interests of the person concerned warranting protection ("schutzwürdige Belange") on the other.

b. Data have to be blocked (subject to no further use except under certain conditions) and to be erased on application of the person concerned if there is no further need of these data for accomplishment of the original task or purpose.

c. The person concerned has the right to know what data are stored. Exceptions are enumerated. In general, the person enquiring has to pay for the information. The law provides for the information on where data are or could be stored - in the public sector by means of official publications and public registers (about the structure and purpose of data registers), in the private sector by individual information about the storage of information about him, if he does not know already.

d. The individual concerned can ask for the correction of incorrect data, and for the erasure of data stored without justification. If the correctness of data is contested, they have to be blocked.

e. A federal data protection commissioner (Bundesbeauftragter für den Datenschutz) is appointed by the President on the proposal of the federal government as an independent agency of control over the federal administration. He reports directly to the parliament and to the government. The states have created similar control institutions. Private data processing activities are under the (limited) control of state agencies. Anybody concerned may appeal to one of these control institutions, if he feels his rights to be violated by the processing of his personal data. Physical persons and private bodies beyond a certain volume of data processing have to appoint an internal data protection commissioner who is responsible for the enforcement of data protection.

f. Unauthorized transfer and modification of data are criminal offenses. The penalty is up to two years imprisonment.<sup>156</sup>

### 6.2.3. The Netherlands.

On December 1, 1981 the Dutch parliament agreed about a law concerning data protection.<sup>157</sup> The law follows the principles established in the advice of a commission (Commissie Koopmans) set up as early as 1972 (after the census agitation of 1971) and which delivered its final report in 1976.

The data protection law does not restrict itself to automated databases. This is contrary to what the Commission proposed. A restriction should be made, according to the Commission Koopmans, on practical grounds. It is very difficult to try and control already existing and well-established institutions with a large volume of data on persons in paper files.<sup>158</sup> The

consequence is, of course, that name and address information can be stored in a manual administration and all other sensitive data in an automatic one, which provides the interested persons with a number which corresponds to name and address information. Therefore the law does includes manual files.

The law has two ways of control:

1. It established a body which registers 'sensitive' databases and grants permits, the registration office (Registratie Kamer).
2. It granted rights to the individual who is registered and which are supposed to protect the individual.<sup>159</sup>

The law defines 'personal data' as all data which can be traced back to an individual (identifiable data) however difficult this may be. This involves the possibility of decrypting encrypted data, linking remote databases to one another, burglary (electronic or otherwise).

#### 6.2.4. Sweden.

Sweden was the first sovereign state to enact a data protection law. The law came into force in July 1, 1973.\* Sweden has been

\* The German State of Hessen, as noted above, enacted the first data protection law in the world, but Hessen is not a sovereign state.

the first in many related things. Since 1947 every Swedish citizen has a Personal Identification Number (PIN). This code contains information about date of birth and sex.<sup>160</sup> The existence of this code together with the increasing importance of electronic data processing was the reason for discussions about privacy during the end of the sixties and the beginning of the seventies.<sup>161</sup>

Another interesting feature of Swedish society is that there is great openness of governmental information to all citizens. This is so because of the constitutional principle of freedom of information and publicity. This principle originated in the eighteenth century and is only limited by the secrecy law.

The secrecy law, amended in may 28, 1937, establishes "restraints on the Right of the General Public to have access to Official Documents." It also guarantees the secrecy of identifiable information on a person for a period of twenty years.<sup>162</sup>

#### 6.2.5. The United States of America.

In the United States the protection of data is regulated in two laws, the Privacy Act of 1974, and The Freedom of Information Act of 1966 (amended in 1974 and 1976). Both laws are specifically directed to federal bureaus and databases.<sup>163</sup> However,

most if not all states have implemented similar legislation as the federal government.

The Privacy Act is concerned with the protection of the citizens' right to privacy. In doing so it regulates the "collection, management, and disclosure of personal information maintained by governmental agencies."<sup>164</sup> The collection of data by private organizations is not limited.

The Privacy Act gives citizens the right to inquire whether information about them is stored in federal databases and demand access to these records, in so far as they do not have access under the Freedom of Information Act which tries to improve the openness of government and public access to data.

In contrast to European systems, the US system of data gathering about citizens and nationals is much less thorough. It seems that the various US governmental agencies, be it on federal or state level, do not want to record if anything at all about their citizens. The only thorough data gathering and processing is the census which is held every ten years, and updated with mini-censuses. It is therefore that a large part of the concern of the Privacy Act was with the Bureau of the Census, followed by the Social Security Administration and the Department of Health,

Education and Welfare. Where they could exchange data under the Federal Reports Act, in order to improve efficiency and decrease redundancy of data, they are now restricted in the kinds of information they can exchange. When this information includes personal data about identifiable individuals the exchange may be prohibited. However, a limited flow of identifiable data among federal agencies is permissible, according to the privacy Protection Study Commission in their final report of 1977. The condition is that there has to be a commensurate increase in protection of confidentiality. The Commission in its report concerns itself also with social scientific research.<sup>165</sup>

There is no definition of explicitly illegal data but the Privacy Act stipulates that agencies shall maintain "only such information about an individual as is relevant and necessary to accomplish a purpose of the agency required to be accomplished by statute or executive order of the President." Each Federal Agency, however, is responsible for interpreting the Act. There is no Data Inspection Commission or any comparable institution, which reviews the data concerned. Within the various federal agencies there are officers who concern themselves, among other tasks, with the implementation of the Privacy Act, although the Act itself does not require this. Nothing is known about their performance!<sup>166</sup>



### 6.2.6. Britain.

On November 11, 1987 the Data Protection Act came into force in Britain. As such it is the latest data protection legislation that came into power in a western country. The purpose of this act is to protect citizens against abuse of data that was held on them. Moreover the Act gives them the right to know what is held on them.

The Data Protection Act received Royal Assent in July 1984, and is itself the result of a long process of discussion in Britain. The ultimate cause for the act to come about was the European Convention on Human Rights which came into force in 1953.<sup>167</sup> In the twenty years between the European Convention and the adoption of the Data Protection Act things have changed but not so much that principles like privacy and the limitations on the right of interference of a government with private life and correspondence have disappeared.

The Act maintains six data protection principles. "Organizations using computers are required to ensure all information is:

- collected and processed fairly and lawfully

- held only for lawful purposes described in the register entry made by the organization
- used only for the purposes and only disclosed to the people described in the register entry
- adequate, relevant and not excessive in relation to the purposes for which they are being held
- accurate and, where necessary, kept up to date
- protected by proper security.

The Act provides the citizens with five rights:

- to check if any organization keeps information about [him/her] *on computer* [underlining by me]
- to see a copy of this information subject to certain exceptions
- to complain to the Data Registrar or the courts if [he/she] does not like the way organizations are collecting or using the personal information on their computer
- to have inaccurate computer records corrected or deleted
- to seek compensation for damage by the misuse of computer records.<sup>168</sup>

### 6.3. The questions.

In this section I will discuss the way in which the questions I have asked at the beginning of this chapter are answered in the

various legislations. In this way an overview of the effectiveness of data protection in the selected countries will become clear.

### 6.3.1. Does the law include also private databases?

In most countries the data protection legislation includes also private databases. In Britain the data protection Act demands organizations and persons processing data on computers to register with the Data Registrar. It is a criminal offence not to register. The act does not specify how big or how small these organizations should be in order to register or whether private persons (with an address list in which data about friends and relatives is collected) should register or not.

Article 4 of the act merely demands that registration takes place:

#### 4. Registration of data users and computer bureaux

(1) The Registrar shall maintain a register of data users who hold, and of persons carrying on computer bureaux who provide services in respect of, personal data and shall make an entry in the register in pursuance of each application for registration accepted by him under this part of this Act.<sup>169</sup>

The data protection law in Sweden does not make any distinction between public or private databases. "The Data Act defines 'personal information' as 'information concerning an individual'. A 'personal register' is 'any register or any other notes made by

automatic data processing and containing personal information that can be assigned to the individual concerned.'

The Data Act stipulates that a personal register must not be started or kept without permission by the Data Inspection Board (DIB), unless the register has been ordered by the Government or the Parliament. The DIB shall give permission to create and run a personal register, if there is no reason to assume that the register will lead to undue encroachment on the personal integrity of registered persons and the register is kept according to the rules set up by the board.<sup>170</sup>

The Dutch data protection law demands also that all databases which contain personalised data are registered at the 'Registratie Kamer'(see above). Also in the Netherlands the law makes no distinction between private and public databases.

The same holds for Germany. The BDSG (Bundes Daten Schutz Gesetz) is concerned with public as well as private databases. The first principle of the German data protection clearly and explicitly includes private databases (see above).

What is probably not known by the general public in Germany is that census data (note that census data is data about

*identifiable persons*) can be copied to various public institutions, notably townships (Gemeinden) in order to update their population registers which are generally thought to overstate the size of the population. This is a simple and routine action, which involves the connection of the census computers at the Federal Statistical Office (Statistisches Bundesamt) and the computers of the other public institution. The data are, of course, transferred in a compatible form, so that they can be used by different computer systems and programs.<sup>171</sup> Below I will concern myself with the possible consequences of such transfers.

The two countries that are exceptions are Canada and the United States. In both countries the respective data protection legislations concentrate on databases maintained by public (mostly federal) institutions.

In the United States the Privacy Act is concerned with the protection of the citizens' right to privacy. In doing so it regulates the "collection, management, and disclosure of personal information maintained by governmental agencies."<sup>172</sup> The collection of data by private organizations is not limited. The dissemination of data by these organizations is only limited by the relevant articles in the constitution and other laws about libel and slander.

An interesting example of this freedom is mentioned by Flaherty when he discusses the public discussion about privacy measures, or the lack of them, in the Bureau of the Census:

Moreover, critics of the Bureau of the Census seem unaware of the amazing variety of personal information on individual American adults annually published in city directories by R.L.Polk and Company of Detroit. Its 1400 community directories list the name and address, marital status, occupation, place of employment, telephone number, residence, and information about rental or home ownership for individuals in the locality. In response to specific requests from its clients, Polk can produce geographical selections of information by areas as small as postal zones, census tracts, or neighborhoods. Yet the company states the "we don't have anything in our files that is not available under the law."<sup>173</sup>

It seems to me that when the protection of privacy is concerned also the development of databases like Polk's should be controlled in some respect.

### 6.3.2. Can citizens ask which data is held about them?

In Britain, like in most other countries, after the data-users (the persons or organizations who own the databases concerned) have registered they can do almost anything they want with it. The only case that a violation can be detected is when a data subject finds out about it, usually by chance. There is no way that a data-subject can, in practice, ensure that data about him/her is correct. He or she cannot ask the Data Protection Registrar (the

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institution at which the owners of databases containing personal data have to register) to find out who has information about him/her. Data-subjects have to find that out for themselves, and only then they can ask the data-user to inform them about it. The data-user can require a fee from the data-subject for searching and/or correcting data held on the subject.<sup>174</sup>

In Canada citizens have a right to demand information about personal data held about them in the government's automatic databases. These databases contain data which is to be used for administrative purposes. The law requires the annual publication of an index of those governmental (federal) databases which lists the contents of the files and its proposed use.<sup>175</sup> "The regulation of federal information banks and their description in the information bank index only applies to records used for administrative purposes. Similarly, the provision for individual access to personal records in government hands only applies to records used for a decision-making process that relates directly to an individual versus other research and statistical purposes."<sup>176</sup>

In Germany the second and the third principle of the data protection law regulate the rights of citizens to demand

information on data held about them and possible correction of these data if they prove to be incorrect.\*

In the Netherlands the individual has also the right to inspect data about himself and demand correction in the case of incorrect data. Any database with 'sensitive' data in it has to keep a log of any third-party-access to the database. The owner of a database which registers individual data, has to send to every individual a notice on the moment of registration that data about this person is entered in the database. This has to happen only when this is not made clear in another way.

There is an exception for police and medical databases and, social scientific or statistical databases. In the case of social scientific databases the right to inspect data may be suspended since the organisation of these databases is not directed towards

\* The rights of citizens are specified in the principles of the Federal Data Protection Law:

c. The person concerned has the right to know what data are stored. Exceptions are enumerated. In general, the person enquiring has to pay for the information. The law provides for the information on where data are or could be stored - in the public sector by means of official publications and public registers (about the structure and purpose of data registers), in the private sector by individual information about the storage of information about him, if he does not know already.

d. The individual concerned can ask for the correction of incorrect data, and for the erasure of data stored without justification. If the correctness of data is contested, they have to be blocked. (See above and also Appendix 2).



particular individuals but towards certain personal characteristics of an individual.<sup>177</sup>

The active control and prosecution of those who abuse data lies obviously with the individual, and not with the registration office, whose task it is to merely grant permits (with or without conditions). As with all other legislations security and police databases are exempted from any registration duties and are not subject to the control of either the individual concerned nor of any other public or private entity.

The Swedish Data Inspection Bureau publishes a list of databases and research projects which contain or are concerned with personal data. The citizens have a right to request what kind of information is stored about them, although not more than once a year per database. There appears to be no fees for this service.

The Privacy Act in the United States gives citizens the explicit right to inquire whether information about them is stored in federal databases and demand access to these records, in so far as they do not have access under the Freedom of Information Act which tries to improve the openness of government and public access to data.

There is among the six countries which are described here no exception as far as the right of citizens to inquire about information held on them. The differences are more a matter of degree in which this is possible. In no country the citizens are automatically informed about data held about them. This results in relatively few inquiries by citizens and even less demands for correction of incorrect data. The reason clearly is that the individual citizens do not know if and where data about them is stored.

### 6.3.3. Is there a definition of illegal data?

There are only two countries where certain types of data are defined as illegal. One is Britain and the other is the United States.

In section 2(3) of the British data protection act there is a provision about which data may be restricted:

The secretary of state is empowered to modify or supplement by order the data protection principles in matters of a potentially sensitive nature, and any such orders once passed into law will be included in references to the act and the data protection principles.

This provision derives from Article 6 of the Council of Europe Convention which requires that personal data in respect of -

- (a) racial origin
- (b) political opinions or religious beliefs
- (c) physical or mental health or sexual life
- (d) criminal convictions

may not be passed automatically unless domestic law provides adequate safeguards.

There is no doubt that massive amounts of personal data as described above are processed automatically and much of it will be exempted from the operation of the act altogether for reasons of national security and from the subject access provisions for reasons to do with the prevention of crime and the collection of taxes.<sup>178</sup>

In Sweden there is also a restriction on what kind of data may be stored and what kind of data may not be stored without specific permission of the DIB, although somewhat different from Britain. There must be specific reasons and needs accompanied with a number of safeguards for the storage of data like: information about criminal convictions, whether a person "has been treated as a Child Welfare Committee case", information about drug addiction, information about dependence on welfare, information about religion and political affiliation, and presumably racial origin. One exception is that religious and political organisation may keep a computerized list of their members.<sup>179</sup>

None of the other countries have any limitation on what kind of data may be registered on people. The only requirement is that there have to be guarantees and safeguards concerning a person's privacy. In Canada there is no indication that the data recorded on individuals is in any way limited, only that the data should not be 'vague'.<sup>180</sup>

#### 6.3.4. Does the law prosecute databases with illegal data?

From the paragraph above it follows that only Britain and Sweden have provisions concerning the prosecution of database owners who store illegal data. The other countries, since they do not define illegal data have no provisions for prosecuting storage of illegal data.

#### 6.3.5. Is there a controlling institution (data inspection)?

In five of the six countries discussed here there are controlling institutions or data inspectors. In Britain there is a Data Registrar who maintains a list of databases where personal data is stored.<sup>181</sup> He sees to it that the six principles of the Data Protection Act are maintained.<sup>182</sup> He also sees to it that complaints of citizens about particular databases are investigated. He also makes recommendations about data protection to the government.

In Canada a Privacy Commissioner has been designated by the Canadian Human Rights Commission. The Commissioner can investigate violations of privacy in government databases. The commissioner can only report his findings to the government

Minister involved and to the person who complained about abuse of data held on him/her. Neither the concerned Minister nor Parliament have to comply with the Commissioners recommendations.<sup>183</sup>

Also in Germany the establishment of a controlling institution is established. "He reports directly to the parliament and to the government. The states have created similar control institutions. Private data processing activities are under the (limited) control of state agencies. Physical persons and private bodies beyond a certain volume of data processing have to appoint an internal data protection commissioner who is responsible for the enforcement of data protection."<sup>184</sup>

In Holland a registration office was established which registers databases with personal data and sees to it that they comply with the provisions of the law.<sup>185</sup>

In Sweden there is the above mentioned Data Inspection Board which does not only register databases with private data but also sees to it that they contain only legal data and that they do not exchange data with, for such transfers unauthorized databases.<sup>186</sup>

In the United States there is no controlling agency. Each Federal Agency, however, is responsible for interpreting the Act. There is no Data Inspection Commission or any comparable institution, which reviews the data concerned. Within the various federal agencies there are officers who concern themselves, among other tasks, with the implementation of the Privacy Act, although the Act itself does not require this. Nothing is known about their performance.<sup>187</sup>

#### 6.3.6. Does the prosecuting duty lie with the law?

In only two countries the data protection institution has the right and duty to prosecute databases and their owners who violate the data protection law. These countries are Germany and Sweden.

In Germany unauthorized transfer and modification of data are criminal offenses. The penalty is up to two years imprisonment.<sup>188</sup> Therefore it is likely that under the BDSG the data commissioner can take the initiative of the prosecution violators of the law, in public as well as in private databases, however the individual(s) concerned have their own rights of prosecution.

In Sweden the DIB prosecutes actively all those who violate the Data Act. Private citizens have of course the right to prosecute

those who disseminate their private information without their consent or who store either illegal or incorrect data.<sup>189</sup>

In the other countries, Britain, Canada, The Netherlands and the United States, citizens themselves have to find out about possible abuse or incorrectness of data held about them and about where such data is held. Then they can prosecute the concerned database owner under the provisions of the respective legislations.<sup>190</sup> In the United States this is not necessarily a great problem, especially because the databases which are covered by data protection legislation are Federal and State databases. In such cases citizens can simply ask particular if there is anything registered about them under the freedom of information act.<sup>191</sup> In the other countries finding out about where and what information is stored on a person may be more difficult.

#### 6.3.7. Does the law regard data-transfers abroad?

In all countries except the United States such transfers are regulated by the respective data protection laws. Usually the requirements to send personal data abroad is that the receiving country must have similar data protection legislation as the sending country. In Canada transfers of data are also regulated for private databases.<sup>192</sup>

In Britain transfer to other countries is limited in general to those countries who are bound by the European Convention to other countries a request has to be filed with the Registrar.<sup>193</sup>

In Germany the transfer of personal data from public authorities to other (public or private) organizations in other countries is admitted under certain conditions. Such transfers can take place if the receiver can make clear that he needs the data and has a formally justified interest in these data. Or that the sender has an interest in transferring the data to a certain receiver. Transfer can only take place when there is a justified and credible interest in transferring them or when personal data about persons involved which are worth protecting are not violated. Transfers take place in the sphere of justice, public administration, tax (to avoid double taxation), crime and drugs.

Persons whose personal data are transferred or processed are protected within the BDSG:

1. The rights of the person involved may not be worse than under the BDSG, when they are transferred to another country. This can only be the case when
2. the receiving country has data protection legislation which is in its essentials comparable to the BDSG, or



3. when the receiving country has a special treaty with the Federal republic which takes care of the rights of the persons whose data is transferred.<sup>194</sup>

A special part of the Dutch data protection law concerns itself with the international situation. The three paragraphs under this chapter establish the reach of the law in order to prevent the evasion of the law through data transfers and processing in other countries. The databases concerned with personal data established in a foreign country by a Dutch or Dutch based organizations have to obey to the same rules as databases established in the Netherlands. Transfers of Dutch 'sensitive' data and foreign databases accessed or owned by Dutch organizations need a permit from the registration office.

This is the same for data security of foreign databases which can be accessed from the Netherlands. When the database is established in a foreign country under the supervision of a foreign owner or another foreign organisation, no registration is necessary under Dutch law, also when private data about Dutch nationals is stored. The registration office can give dispensation to particular databases in case of conflict with foreign data protection laws.<sup>195</sup>

The transfer of computerized personal data from Sweden to other countries needs a license of the DIB. The Data Act also includes manual files, and is in this way more strict than when internal Swedish transfers are concerned. When a license for export is applied for the Data Inspection tries to determine if the data protection laws of the importing country are comparable to the Swedish laws. If that is not the case the license is refused. The import of information is not included in the law.

#### 6.3.8. Does the law also concern itself with manual files?

In three countries, Germany, the Netherlands and the United States, the data protection laws concern itself also with manual files. In Germany the law explicitly includes manually handled files when they refer to identifiable persons. The same is valid for data stored by the press of media archives.<sup>196</sup> This is not so strange given the level on which gossip-newspapers operate in Germany.

The Dutch data protection law does not restrict itself to automated databases. A restriction should be made, according to the Commission, on practical grounds. It is very difficult to try and control already existing and well-established institutions with a large volume of data on persons in paper files.<sup>197</sup> The

consequence is, of course, that name and address information can be stored in a manual administration and all other sensitive data in an automatic one, which provides the interested persons with a number which corresponds to name and address information. Therefore the law does include manual files.<sup>198</sup>

In the United States the Freedom of Information Act and the Privacy Act do not particularly distinguish between automated and manual files.<sup>199</sup> Therefore it seems that manual files are also included. The United States Supreme Court in the case *Whalen v. Roe* in 1977 which "presented the question whether a state could record, in a centralized computer file, the names and addresses of all persons who had obtained, pursuant to a doctor's prescription, certain drugs for which there was both a lawful and an unlawful market". The Supreme Court decided that such a centralized file was not allowed and, in its opinion explicitly included non-computerized data banks:

We are not unaware of the threat to privacy implicit in the accumulation of vast amounts of personal information in computerized data banks or *other massive government files*. (Italics by me, Ph.)<sup>200</sup>

Therefore there is reason to assume that manual files are meant to be included in U.S. data protection legislation.

Notably in Sweden the Data Act does not concern itself with manual files, including when they can be mechanically (punch card sorting, etc.) be sorted or selected. Neither does the act protect the privacy of 'non-living' persons.<sup>201</sup> Given the discussions in Sweden about privacy in the nineteen sixties and seventies this is a strange fact, for which I have no explanation. It is possible that the Data Act does not regard these files because the manual files are considered so much outdated and cumbersome that they do not pose any real threat to privacy.

In Britain the Data Protection Act does not cover manual records. Campbell and Connor in their book *On the Record* observe that the exclusion of manual files allows information users to protect their most damaging data by retaining them *or transferring them* to paper. Information once held on a computer database need not be disclosed to the data subject if it is later processed only on paper.<sup>202</sup> However, in the definition section of the act, minimal data (like name and address) held on a computer with references to a manual record are included in the act. The combination of computer and manual files is seen in the same way as combined computer-files.<sup>203</sup> Even if data users do not transfer their sensitive data to paper, they can evade the Act by processing it in a fashion contrived to avoid referring to individuals in their main records.<sup>204</sup>

In Canada simply no mention of manual files is made in the Human Rights Act .<sup>205</sup>

#### 6.3.9. Does the law demand registration of databases?

This question can be answered with 'yes' for all countries mentioned here. It seems to be a general opinion that data protection legislation cannot function properly without such a registration.

#### 6.4. Evaluation.

In order to be able to compare better the different countries it is perhaps useful to make a table in which the most important properties of the various data protection legislations are pictured. In such a way we can develop an idea about which law gives the most protection and which the least.

The nine questions:	UK	Can	FDR	NL	Swe	USA
1. Does the law include also private databases?	yes	no	yes	yes	yes	no
2. Can citizens demand information about data that is held about them?	yes	yes	yes	yes	yes	yes
3. Is there a definition of illegal data?	yes	no	no	no	yes	no
4. Does the law prosecute databases with illegal data?	yes	no	no	no	yes	no
5. Is there a controlling institution (data-inspection)?	yes	yes	yes	yes	yes	no
6. Does the prosecuting duty lie with the law?	no	no	yes	no	yes	no
7. Does the law regard data transfers abroad?	yes	yes	yes	yes	yes	no
8. Does the law also concern itself with manual files?	no	no	yes	yes	no	yes
9. Does the law demand registration of databases	yes	yes	yes	yes	yes	yes

A rather striking difference is the difference between the US and Canadian legislation on the one side and the European legislation on the other. All European legislations include private databases

which hold personal information, while the north American legislations do no such thing.

This is probably related to a difference in opinion about what a government can do and what a government cannot or is not allowed to do. Moreover the discussion in the US and Canada about privacy and computers focuses on the workings of the government of the state. In general the public fear about abuse of private information took form in the notions of personal freedom versus the possibility of the government becoming 'Big Brother'.<sup>206</sup>

The disregard for private databases is in European eyes a bit strange. Not only commercial organizations like Polk can gather and use private information about people, probably for no other purpose than providing a service, but also other organizations with other more politically and socially oriented goals. Among a host of probably harmless organizations, we find at least in the United States, but now also in Britain and in other forms elsewhere, organizations like the Klu Klux Klan, Neo-Nazi Organizations and others which have a special interest in knowing to what race and/or religion people belong, if they have communist sympathies or not.

It is this sort of thing that is dangerous. The availability of information about a particular citizen is not important but the potential possibility of categorizing citizens in economically, politically or socially valuable, dangerous, undesirable, safe etc. is the danger that is behind too much private information about citizens. Therefore it seems to me important that also private organizations are confronted with restrictions about what they can register and what not about people.

It would, of course, be naive to think that for example the Klu Klux klan would willingly let a governmental inspection institution look in databases where it holds information about its 'enemies'. But they would have to be more careful with such practices because it would be easier for a government and a public prosecutor to find evidence of illegal conduct.

The danger lies of course also with organizations of the state intelligence and security organizations which advice governments about citizens in applications for civil service jobs, benefits, etc. Even when we do not have a straightforward authoritarian or totalitarian regime, but simply a strong state, like in Britain and the Netherlands, these things can be dangerous.



All countries dealt with share with Britain the exclusion of police and security records, with the results described above. There is nowhere any control about the accuracy of the information and the relation the information has towards the execution of the tasks of the police and security organizations. Nor is there any time limit for which this information can be kept. This seems to me a grave shortcoming.

The need for a police force and to some extent security organizations is defensible, but that does not mean that they have to operate entirely out of control of parliaments and governments. The discussion about the workings of the security services in Britain, the US, Israel and other countries shows that this problem is real.

The country where this problem is taken most seriously is probably Sweden. There the privacy discussion was taken to the extreme, certainly in Swedish circumstances, of a 'coup d'etat'. Although certain politicians in Sweden found such considerations offensive<sup>207</sup>, it helps to construct measures which certainly in less extreme circumstances provide a maximal protection for the individual citizen.

On the whole Sweden has the most complete data protection legislation compared with the other countries. The only question which had to be answered with 'no' was whether the Data Protection Law concerned itself with manual files. Only in the US, The Netherlands and Germany data protection laws concern themselves also with manual files. This is an important point because information dangerous for a persons privacy may be stored on paper. It is true that mass processing of such files goes much slower than computerized files. Still such files may serves as identification files while the computerized files are totally depersonalised so that they comply with existing data protection legislation. It is exactly because of this the data protection laws in Germany include such files.

In all countries citizens have the right to demand information about what is stored about them in at least public databases but in all European countries also in private databases. Sometimes they have to pay a fee for such services in one case (Sweden) they are allowed to do this only once per year per database.

Nowhere, except in Germany, is this information provided automatically when a person's data are entered in a database. This lack makes it difficult for private persons to find out where and if there is information stored about them, except in the most

obvious cases. Hence the possibilities of control, correction and possible prosecution in the case of abuse are seriously curtailed. In the case of abuse, it may come to ones attention long after the harm is done, and even then it may be difficult to trace the source of the abused information.\* The reason that Germany has included this rule about the automatic provision of information (given when the entering of personal information in a database was not obvious at the moment of gathering) is perhaps the very bad experiences during the Nazi-period with personal information.

Only two countries Britain and again Sweden have explicitly defined what kind of information is illegal to gather, except in cases where there is a statutory and explicit need for it. To leave such rules out of a data protection law is severely limiting the working of the law. One of the best ways of protecting a person against abuse of personal information is not gathering it. I will talk later about what information is really indispensable for public and private purposes, but it is essentially not very much. Consequently only in Sweden and Britain prosecution on this basis is possible.

\* Suppose the (not so) hypothetical case that someone is harassed by complete strangers because of race, religion or political beliefs. It is not at all clear where these strangers got the information concerned. It is not impossible that they obtained it from government sources (most European administrations register the religion of a person, if any), but this may not at all be the case. And where does one look among a myriad of private- (like Polk) or semi-private databases.

The only country which has no Data Inspection Institution in one form or another is the United States. There it is assumed that the government agencies concerned exercise their own responsibility according to their own interpretation of the Privacy Act and Freedom of Information Act. This interpretation can, of course, always be challenged before a federal court. All other countries do not trust their own government agencies with this task and have at least a data inspection institution (itself mostly operating uncontrolled) which checks the way of information gathering and storage in relation to an agency's needs or in the European case a private organization's needs, in order to be able to decide whether a permit should be issued or not.

More control and more action of the data inspection institution is seen in Germany and Sweden where it can check the proper use of a database for which a permit was issued. In case the owner of the database fails to correct its use according to the data inspection's recommendations, the data inspection can and will prosecute that database owner. In all other countries at most a recommendation to the parliament or minister concerned is made. The individuals whose personal information is used in an illegal way have to prosecute the database owner(s) when they fail to correct their behaviour.

The only country which does not regard data transfers abroad is the United States. The reason for this probably is, that the US is a data-importing country and not an exporting one.<sup>208</sup> Commercial computer centres in the US offer their services to organizations all over the world to process any data they may want to be processed. Therefore it may be that the US legislator is not very much concerned about limiting data transfers to foreign countries.

In all countries the law demands registration of databases with personal information. In the US and Canada, this holds only for governmental databases.

The problem with most of these data protection laws is threefold:

1. There is a systematic disregard for the data gathering and processing in police and security organizations. It certainly must have been one of the hot issues in the late sixties and early seventies when the privacy and data-protection discussions were going on.

2. The individual citizen has the right to demand inspection of the data stored in him/her, but has almost no way (except in a way in Germany) to find out *where* data is stored about him/her, aside from the most obvious places.

3. Data protection laws have no provisions for the study of technological possibilities, now and for the foreseeable future.

One can say that there is a systematic underestimation of what information technology can do. It is striking to see that even people like Flaherty, who studied the subject thoroughly (although only from a legal and social scientific point of view) speak about "morbid fear of computers" and "overestimation of possibilities".<sup>209</sup> Flaherty mentions in this respect the comment of a social scientist about the release of a depersonalized sample tape by Statistics Canada for scientific purposes:

The most challenging and misleading comment on the subject of confidentiality came from a prominent Canadian social scientist who questioned the possibility of preparing a public use sample that would make further identification of individuals impossible. Even the sample did not contain the name and address of an individual, in his opinion it would be relatively easy to identify a certain number of persons by using only four or five characteristics. For example, in certain cases, the age, sex, occupation, ethnic origin, and the province of residence would be sufficient to identify an individual. He argued that Statistics Canada could not run the risk; the only possible solution was to rely on custom analyses.<sup>210</sup>

The mentioned social scientist probably understood the possibilities of information technology a little better than Flaherty. With address lists like the ones produced by Polk (and there is no reason that Polk is the only one and the US the only country doing this) it is possible to try to match characteristics. It is especially possible when aside from name, address, sex and

age information there is information about profession, and information about ownership of houses and cars. A community or neighbourhood has than certain characteristics which with a high probability can be matched against the depersonalised data of a statistics bureau. The characteristics of neighborhoods and other communities are unique. When certain depersonalised data is from a certain area is issued than it is possible to try to match these data with what is already known about certain communities or neighborhoods (i.e. their unique characteristics). This can be done, of course, with the aid of computer programs which try to match these data. A higher certainty can be rather easily obtained by random checking. This would involve actual research within the targeted areas, so that what is known about it can be extended.\*

\* In an article, *Are statistical data bases secure?*, presented at the National Computer Conference in 1978 Dorothy Denning discsses several methods of making data bases secure. She concludes that merely stripping name and address data are insufficient, moreover that methods that take place within the query possibilities of the DBMS (Data Base Management System) can be easily circumvented (pp.526-8) Complete security can be expected when users (and other interested parties) have no or very little supplementary knowledge, a circumstance very seldomly met (p.528). The schemes that make databases fully secure have the danger of making the data base useless for its intended purposes, or are too cumbersome in practice (p.529).

One method overlooked is the active programming by the mala fide users which can access the data base files without the use of the DBMS. This possibility is generally overlooked, although a very present danger. The activities of amateur hackers (people who break in to a large computer system) and their successes demonstrates this danger. Professional hackers with far more resources may be more successful and lesser discoverable.

The problem with such procedures was, in the seventies, the technological and financial limits that it would impose upon those who would want to do such a thing. It requires the power, memory storage and speed of a large mainframe. Nowadays this is less a problem. Not only have computer services become cheaper, but also the speed, power and storage capacity of small computers approaches those of earlier mainframes. With powerful database management systems, working with additional artificial intelligence (AI) programs, can actually do this work of comparing and selection. They are designed to perform such tasks. That is not to say that the computer industry is trying determinately to violate people's privacy, but these programs are designed and produced because there are so many tasks similar to the one mentioned.\*

Many kinds of safeguards were talked about in the seventies. Two of them were explicitly mentioned by the Canadian Committee of Statistics when they dealt with the probability of undesired disclosure of private information through a sample from the census results for social scientific research:

The brief by the Committee on Statistics directly addressed the risk of the identification of individuals in public use samples and described two strategies to eliminate any risks of disclosure. The first suggestion was the application of small random disturbances to the individual data. Assuming seventy variables per record

\* See for a simple explanation of the principles of database management Appendix 1.



and no more than five variables being manipulated at one time, most analyses would be likely to contain "errors" in only a relatively few cases. These random disturbances would probably be fewer than the natural disturbances introduced during the taking of the census. The second strategy could substantially reduce the benefits to users and society, because it involved the collapsing of categories in those cases where the details of the more crucial variables might create a probability of disclosure. The Committee thus favored the introduction of random disturbances.<sup>211</sup>

This does not answer the points of the prominent social scientist with his misleading remarks. Random disturbances cannot take place in *every* record, the error-chance would become too large, moreover one can eliminate such disturbances or neglect them when they only partly 'disturb' essential data like sex, age, address, profession, etc. Moreover, very often more than five variables are handled at one analysis run. Again, a method of reconstructing data from a sample file would be 'through the back door' by taking public lists like telephone directories, yellow-pages, and if available, legally or illegally, city administration files, or client files from large mail-shopping centres or financial institutions. When a pattern is established on the basis of these files a further reconstruction of personal data should not be too difficult.

There is also the possibility of encrypting the data files or parts of records containing personal information. In order to demonstrate its diminishing use I would like to show as an example a short article from the personal computer magazine

'BYTE' which reports on commercially available software designed to eliminate, for completely legal reasons, encryption of files produced by a particular administrative and word-processing program.

#### Regain Password-Protected Files from SMART.

Smack is a proprietary program designed to help users of Innovative Software's SMART software package to regain password-protected files where the password has been lost, forgotten or added.

The program is written in Turbo BASIC and is stand-alone, so you don't need the SMART software to run it. SMACK can see the spreadsheet and data-manager screen passwords and resurrect the *file-encrypted* word processor documents. SMACK does not find the old password, but adds a choice of two new passwords. File colors, tab settings, and other formatting structures may be lost, and possibly one or two characters at the head of the document can become corrupted, *but the file contents remain complete.* [Underlinings by me, Ph.]

SMACK runs under MS-DOS or PC-DOS 2.0 or higher on computers that can run the SMART software package version 2.0 or higher with graphics card.

Price: \$70 U.S.

Contact: Dandy Computer Services, 36 Avalon Rd. Bridgwater, Somerset TA6 4JE, U.K., (44) 278-424029.<sup>212</sup>

There is no doubt that what can be done with one software package's encryption option, can also be done with another. The fact that decrypting software becomes commercially available, makes all kinds of encrypting schemes<sup>\*</sup> of, at most, limited value

<sup>\*</sup> Most encryption schemes are derived from the *DATA ENCRYPTION STANDARD* form the Federal Information Processing Standards Publication 46, of January 15, 1977, and the additional 'Specifications for the Data Encryption Standard'. The publication is extremely confident that decryption without knowing the key is impossible:

As there are over 70,000,000,000,000,000 (seventy quadrillion) possible keys of 56 bits, the feasibility of deriving a particular key in this way [random trial of keys] is extremely unlikely in typical threat environments. Moreover if the key is changed frequently, the risk of this event is greatly diminished.

This implies that it is *not thought* that the encrypted data can be decrypted *without* key. It is not certain that the mentioned decryption software decrypts a scheme that is

(continued...)

(like the famous copy protection of PC-software which does not allow the making of duplicates of the same software for other users than those who have legally obtained it, which has become useless in the face of special copy programs).<sup>213</sup>

These examples serve merely to demonstrate that we cannot rely on technological solutions as far as security of personal data (or any data) is concerned. What is necessary is a flexible control of databanks which potentially contain information which may pose a threat to personal privacy, without sacrificing the benefits that such systems may provide for crime investigation and social scientific research. This is the main question of the next chapter.

After looking at these examples of legislation two additional questions come to mind:

1. How much and what kind of information should be allowed to be held on a person (on computer or hand maintained files)?
2. What kind of institutional arrangement would be a good safeguard against abuse of personal information? In the next chapter I will try to answer these questions.

\* (...continued)

programmed according to the DATA ENCRYPTION STANDARD. But what it shows is that to great a confidence in encryption schemes is not always justified. One can almost always expect that at some moment a decryption method is invented which makes the most sophisticated encryption scheme worthless. The history of the German ENIGMA is one example. Given enough resources and talent every encryption method will be broken.

## 7. The Fourth Power.

### 7.1. Introduction.

Following the discussion about democracy, the problem of data protection and existing legislation about the protection of privacy and personal freedom, I want to propose a different approach to the problem of government and private databases containing personal information. Such a discussion will bring out the aspects and difficulties of citizen control over technological developments.

As we have seen, files containing personal information represent one of the important issues in our societies. There have been numerous instances of official abuse of this information in many Western Countries. Information technology may bring, in this respect, a real totalitarian society closer.

In our days governments, good or evil, can rely on the use of computers. What would have happened when the Nazis had computers at their disposal? They were clearly on the way of making them, like the allies. Nothing was more indispensable for the Gestapo than their files, with the addition of the files of local

police in the occupied territories.’ Modern database technology makes the compilation and retrieval of records in large files instantly possible, where before the computer it cost a long time and much work.

A government interested in the same objects as the Nazis would today be infinitely more effective than the already very effective Nazis were. Not only would they be able to work more quickly, more efficiently and with fewer people, the amount of information that they could generate and act upon would be more reliable and eliminate deceptive information.

The last, deceptive information, can be illustrated with an example; for instance, someone from Jewish ancestry but whose parents have become Catholics. This situation confused Gestapo searches for Jews, because the people who, earlier, compiled this information thought of Judaism as a religion and not something specific for a race. That means that the entry ‘religion: Jewish’ was changed into ‘religion: Catholic’. With the aid of modern

\* The Dutch resistance saw the dangers of the use of the files gathered by the Dutch government before the war. The brunt of Dutch resistance was laid in the destruction of Dutch Government files so that the Gestapo could not use them. These actions have probably saved the lives of a large number of people. Largely, because of the lack of files the Gestapo had to resort to ‘wild’ arrest actions in the street, in order to find those whom it wanted to find. A for the Nazis desirable side-effect of these wild actions was, the terror that these actions spread among the population. See also Frits W Hondius, *Emerging Data Protection in Europe*, New York, 1975, p.187.

data-base query techniques it would have been very easy to find the 'right' background or uncover who belongs to what race, if there is only information about religion. The 'right' background can be found through a intensive search among someone's ancestors.

## 7.2. What is necessary information?

Even if we can determine what kind of information should be present in databases containing personal information, we have to find out the means of controlling that the database is limited to this information. One has to keep in mind that any proposal carries elements of opinion. There is no way for scientifically determining what information should be held or not. Aside from bare basics the subject is one which is very much influenced by moral standards, and a social views. Nevertheless, it would be unwise to avoid the problem.

The kind of information present should be limited to that information that is absolutely indispensable to society (this is of course a dubious point, as I have said, but the maxim is: *as little personal information as possible*).

So only information concerning Name, address, city, date and place of birth and financial data for tax purposes (this includes possessions and income). I would like to make a strong point against the registration of sex. Like information about race, religion and political affiliation this is absolutely unnecessary information to hold about a person. The reasons for this are the following:

1. Having no information about the sex of a person would largely eliminate public discrimination of a certain sex (the discrimination of women is still an issue in most societies, including western industrialized societies).
2. The association of two or more people would become a private affair not sanctioned by public morality or the state. This would ensure the freedom of people to live together for whatever reason they want. This is especially an issue in some western European countries where the state does not want to grant them the *economic* advantage of living together, which in the case of

living together is expressed in extra taxation or decreased social security payments.\*

3. It follows from the last point that also sexual relations are in principle not the business of the state. This means that heterosexual or homosexual relations and everything that may be in between should be outside of state control.

The whole discussion revolves around discrimination social and economic. If for instance for good democratic or economic reasons a government wants to know how many men there are in a population and how they are divided over various age categories, it can resort to quite a diverse number of sampling techniques which are usually accurate enough to base policies on. Exact figures are not necessary and also never used. This is of course also true for data like race, political affiliation, religion, etc.

\* It is unlikely that the economic advantage is on the whole so large that it would lead to cramming people in a small house just because of that. Only people in the very lowest income strata would experience this as a true advantage, and I think they are entitled to that. Furthermore it cannot be denied that it is everyone's *right* to live with whomever they want. The state has no right to interfere with human relations in this respect. An obvious exception is when one of the parties involved is forced to be with the other(s) entirely against its will. But I assume here agreement between the parties for whatever reason it may exist.



Information stored in computers of medical centres and hospitals could be turned over to the patient after treatment is completed. Given the private character of such data only the patient himself should be responsible for it. If this information is destroyed or lost while in possession of the person concerned it is his own responsibility. This sounds harsh, especially when such information is lost because of an accident outside of the control of the owner. It is, of course, a point of democratic decision if this should be so. Nevertheless I believe that the principle is right.

The computers storing patient information could be checked, so that no files remain containing information which can be traced back to persons. Only statistical information, for scientific and general health care purposes can remain.

Then there are the files held by police and security organizations. It can be argued that for purposes of police search and national security reasons this information should not be controlled by other public institutions, but only by those institutions which have a direct responsibility.

This is only partly true. When criminal investigation is on its way information about the persons suspected of crime or any

involvement of crime should remain secret. The disclosure of information held on persons *in respect to the current investigation* would greatly hamper such investigation, and is therefore not to be advised. But when this investigation is stopped or abandoned the persons involved should be (actively) informed about the existence of information about them in respect to criminal investigation.

This sort of private information is clearly of importance to the police, but after a period of 'good behaviour' should perhaps be deleted (depending on the kind of crime), as is done to some extent in Sweden. It is evident that in order to give a former convict a chance to 'better his life' public information, readily available , would greatly impair the possibilities of finding appropriate work or a place to live, since future landlords or employers could easily check on the person's past.

Here I have only discussed proper police organizations, but I have also mentioned security organizations in general. It can be argued that for purely defensive reasons there may be a need for security and counter espionage organizations. It would be better, however, they are organized like the police forces and subject to the same kinds of control then maintain them in their present largely undercover existence. This subject is in need of a larger

discussion then the present, and therefore a discussion about the shape of these organizations is beyond the scope of the discussion here.

A computer system which registers databases which hold personal information can also, interactively or otherwise, disclose to the person involved where information is actually held on him or her.

It is not so difficult to envisage a database system under control of a data registrar, or similar institution, which provide this service. Terminals open to the public, in public buildings could enable citizens to receive this service, among other things, by accessing a menu which provides it as an option and giving a personal code (tax-number, social security number, etc.). Or the system could be accessed via the telephone, with a personal computer.

An information screen showing what is held on a person could look like this:

Citizen record.	
Last name: Doe	
First name(s): John, William	
Born: April 1, 1947	
Place of birth: Everytown, Country	
Address: 7 Some St. City: Everytown Postal code: 01	
INFORMATION ABOUT YOU IS HELD IN THE FOLLOWING DATABASES:	
1. Occupier Inc.	4. ....
2. Mail Order Comp.	5. ....
3. ....	6. ....
For Tax information press the RED key.	

In order to get the information from the databases from Occupier Inc. and Mail Order Comp. the citizen could get on-line information or would ask either through the public database he is looking at or

privately ask for the information held. If a company does not want everyone to see who his customers are, then *no* information should be stored on them, and the company has to design its dealings with these customers accordingly.

### 7.3. A proposal.

Following the discussion on necessary data and the information service which is possible for a data registrar a further proposal is possible.

Files containing information and also personal information in the broadest sense of the word, are central for the functioning of any state, including a democratic state. It is impossible for a state apparatus to function properly when it has no information at all about its citizens. Perhaps in feudal society this was possible, but not in a modern industrialized society.

Only when we deny the necessity of levying taxes, making social services, organizing national defence, etc., can we maintain that this kind of information is not necessary. But in doing so we would deny many functions that are dependent, albeit indirectly on organizing these activities. The state would be deprived of the means of influencing economic life, organizing traffic, and many other things. Even an anarchist society, if it wanted to maintain modern industries,

could not escape from the necessity of gathering personal information, however limited this might be.

Given this central necessity, but combined with the necessity of protecting the citizen against abuse of information stored about him, I propose the following:

1. *All information stored about any individual should be, in principle, absolutely public.* There is no need for secrecy, when the most elementary information is concerned, which includes financial information. This means that any citizen has the possibility to check on what kind of information is collected.\* As far as economic and financial information is concerned, it can be argued that when this information is public it could become a weapon for an adversary in negotiations between companies. The Swedish example shows us that there is no need for fear in this matter. In Sweden almost all information about persons and companies is public, and the thriving Swedish economy gives shows that this is no disadvantage.

\* In Sweden there exists already a fully public governmental database system. It is prohibited, some very special cases excluded, for the government to maintain secret files. This law is extended to the databanks of the government *and* to the databanks of private organizations. There is a Data-inspection which checks the data on private and public databases. Not only personal information like name and address are public but also financial and income data. That is why, for instance, the car factory VOLVO has based its database activities in Hamburg, Germany, because at the time in the Federal Republic of Germany there is no public control of data worth mentioning. See: Hoffman, Gerd E. *Computer Macht und Menschenwürde*, München 1976, p. 157-8, and see also Chapter 8.

A 'good' public information system would inform the citizens about what is stored about them and where. Moreover, I believe that such information should be public, so that the population as a whole can see what is held about everyone. The thought that for instance income should be secret is already today quite old-fashioned, while in most cases pay-scales are available to the public. It is no great deal to find out what someone earns, for those who are really interested. Knowing someone's main occupation is usually enough.

Secrecy may be the enemy of safety in this sense. As long as information is secret it may be anything since checking it is difficult. Moreover when the collected information is public then the incentive is present to collect only the information which can publicly be proved to be indispensable.

I can only think of the two earlier mentioned cases as exceptions to this. One is medical information, which I believe should be in the hands of the person concerned (or his/her parents or guardians in case of inability to act in his/her own interest). The second is information on previous criminal behaviour.

These two exceptions should still be subjected to control by an institution which protects the citizens against abuse of this information. In the case of medical information the hospital computers should be checked on the fact that from the case information name,

address and identification number are removed after the patient is no longer under treatment. In the case of police intelligence files it should check that the information is deleted on the appropriate moment, and kept within the realm of its obvious use, i.e. the prevention of crime and the finding and arresting of those who committed crimes.

*2. The creation of a fourth power, i.e. the institution that maintains and controls the information which is collected about individuals.* Such a thing would seem the opposite of what one should do in these cases. Decentralization looks like a more obvious solution. One objection is the one from Karol Soltan, mentioned above, which argues against decentralization, because decentralization poses problems for quick and adequate decision making. Another is that such a solution does not take into account the possibilities of modern information technology. I have already indicated above that it does not matter in principle where the information is physically stored, or even under what kind of department or institution, because the combination and retrieval of files is a fast and relatively simple thing.\*

From a theoretical point of view a fourth power in our proposal is not a power proper in the sense of a theory of separation of powers. It is a derived power, derived from the power of the executive power.

\* See Appendix 1.



In itself it has no strict political function, like the other powers in the classical sense have.

I believe, however, that the gathering, maintaining and reporting personal information can be seen as a new function. This function is not new in a strict sense, because, as I have already indicated, the 'normal' bureaucracy already performs it. But so it has been with the classical functions within the state.

In a feudal society it is possible to distinguish a legislative, executive and judicial function. The separation of powers has been proposed by De Montesquieu and later Madison, in order to enhance a system of 'checks and balances' where no single body could control all functions at the same time. So it is with our function of information gathering and maintenance. To define this function legally and contribute it to a separate power is to safeguard against the holding of too many 'powers' or 'functions' in one body. The executive has, by its nature, enhanced the importance of the information function to such an extent that it may become dangerous to leave it with the executive power.

The advantages of a further separation of powers are: (i) A relatively autonomous institution, like the judicial system, does not have to react to the ever changing wishes of an executive. It merely has to observe

the law. It can really act without scorn or bias, in regard to the other powers. (ii) Those who deal with personal information and protect it from abuse could be put under the control of an occupational ethic maintained by a council of peers. (iii) The institution could check the use of its databanks by other agencies. It could trace the sorts of combinations made and take care that these agencies get only the information they really need (give out authorizations to use certain data and not other data) Beside it would have the means and expertise to check the use of data.

The fourth power could mitigate the information disadvantage that parliaments have vis-a-vis the government<sup>214</sup>. The executive power, nowadays has an almost monopoly of information that is submitted to parliaments and departments. A computer system network organized by the institution will put equal computing power in the hands of parliamentary institutions on all levels as in the hands of executive branches of all levels.

Still one can imagine that certain personal data, gathered through a census for instance, has to be available for social scientific research. In chapter 7 this problem is discussed at some length. In the present setup of the countries discussed in chapter 7, no satisfactory solution was found for the problem of privacy, microdata, and social scientific research. The fourth power institution can be dealing with this on a

more flexible basis. Microdata can become available in some cases to some researchers, depending on the decision of the citizen committee (see below) who controls the fourth power. This means that a less rigid policy can be followed, because the fourth power has always the right to control the use of data and withdraw the licens for its use if need be.

Another function that could be performed is the control of commercial databases controlling personal data. It could require the screening of a database, and report back to the individuals concerned that information about them is stored in a particular database, and that they have the right to require that this information is deleted.

In certain cases this cannot happen. For example, when one is the debtor of a company or organization one cannot require deletion of the necessary information held by the organizations database about him. But databases for purposes of commercial or other propaganda should respect these wishes. A central authority should require third organizations to inform the public about who is registered in their computers and who is not, as I have indicated above.\*

\* It also would greatly relieve those who do not want to receive the avalanche of commercial printings every day.

#### 7.4. Citizens' control.

All this is, of course, no guarantee that this system will not be abused. It all depends on what a certain government finds to be important, and it could try to change the law accordingly.

It also would not prevent anyone inside the institute taking illegal action and selling information to the highest bidder. A fourth power would suffer from the same ailments as the third power, the judicial system, does. But where the control of the judicial system functions via public channels, and citizen participation is limited (where no jury system is present), it would not have to be the case for a fourth power.

As in a system with jury-duty, citizens may be required to spend time to learn the basics of information technology and take part in a council that checks the workings of the institution and proposes ways to improve its functioning. There are some elements in a complex democratic society like ours that have to be taken into account, when we construct a fourth power even when it is controlled by a citizen body.

In the chapter where democracy is discussed we have seen that Dahl makes a distinction between technical expertise and moral competence. The distinction which Dahl makes between moral

competence and technical expertise runs curiously parallel with Habermas's distinction between practical and technological discourse. The difference is that Dahl tries to put these notions into practical proposals, while Habermas uses his notions as tools for critique of modern industrial society.

Dahl proposes a body which has to accomplish a number of objectives helped by technology adapted to a democratic goal. This technology clearly is an information technology which connects all interested citizens to this body, so that they may be able to influence decision-making.

The objectives are:

1. To ensure that information about the political agenda, appropriate in level and form, and accurately reflecting the best knowledge available, is easily and universally accessible to all citizens;
2. To create easily available and universally accessible opportunities to all citizens to influence the informational agenda, and to participate in a relevant way in political discussions.
3. To provide a highly informed body of public opinion that (except for being highly informed) is representative of the entire citizen body.<sup>215</sup>

The centre where this information may be received and relayed back to the public would exactly be the Information Institution that I have proposed as a fourth power. All essential information would be essentially controlled by that institution (through its own activity and the data surveillance it would perform at both public and private organizations).

For outside organizations it would be very difficult to tamper with the information available (although not impossible). Aside from guaranteeing protection of personal data, it could display requested information in levels of difficulty. In this way citizens with very different intellectual backgrounds would be able to receive relevant information on their own level.<sup>216</sup>

The proposal of Dahl of a highly informed body which is representative of the entire citizen body, would be very useful as a controlling body for the fourth power.<sup>217</sup>

#### 7.5. A minipopulus controlling the fourth power.

Since our fourth power is not like the judiciary, a power that in itself, in order to arrive at 'just' verdicts' has to be screened off from the democratic process, a minipopulus actually could control the workings of this power.

The people selected by a random process to serve in this minipopulus could be educated in the most important aspects of data storage and retrieval, together with possible dangers that may exist when too much information about a citizen is stored or when, for personal freedom, undesirable combinations of certain files are made.

They should control that:

1. Only within the institution of the fourth power the connection of several files (like tax and police files, via ID-numbers) with Name and address information is made.
2. That all citizens are informed that information about them is stored in various (also private) databases and which these databases are.
3. That there is an easy way to amend or correct the information stored about a citizen. The citizen has to provide evidence that these amendments or corrections are necessary.
4. That organizations which need statistical information rather than individual pieces of information have no access to other information than aggregates. Or when they have to check methods and proceedings of aggregation have no access to name and address information or any other information beyond their need.
5. That other information available to citizens, and given by citizens, in order to contribute to the political decision-making process (as mentioned above) is correct.
6. That large and/or important private databases are scrutinized on what information they contain and for what use it is kept.
7. That essential information about the working of the fourth power and the general condition of information gathering by private organizations is reported to the public.

A certain amount of technical knowledge is necessary in order to be able to do this. Therefore the minipopulus should be aided by experts who are not connected with the data-institution, and who can inform them about possibilities of control and about the risks, uncertainties and trade offs of information policies.

#### 7.6. How is this control exercised?

The minipopulus in Dahl's view is only a body that provides 'normal' parliamentary institutions with issues which are considered to be important.<sup>218</sup> It is in itself not a decision making body. The issues that the minipopulus proposes may be rejected by the institutions that do the actual decision-making. The problem for the decision-making institutions is that they would have to reckon with critique and resistance from the public. The minipopulus will probably take care that its proposals are duly advertised in the media, and so communicated to the public. If its proposals meet public agreement a parliament will be hard put to reject the proposed issues.

The concept of citizens' committees or minipopuli is not reserved for application at the highest levels of government decision-making. To my mind then the concept could be applied at lower levels of government or at 'key institutions'. This application of the principal concept of citizens' committees at other levels than the highest will



have consequences for the tasks of these committees. As I have tried to make clear above, the citizens' committee in the case of controlling the Fourth Power has not merely an advisory function. It has to check on a number of things. In order to be able to effectively do this such a committee has to be endowed with real power. It should have the power to *order* correction when it finds that one of the essential tasks of the Fourth Power is badly executed.

Therefore the committee and its members should have the possibility to investigate freely into the actual procedures and day to day activities of the Fourth Power. But not only of the Fourth Power. Also databases of private companies should not only be subjected to the routine controls of the civil servants of the Fourth Power, but also to inquiries by the members of the citizens committee when they see a reason to do so.

Furthermore the citizens' committee should have an essential role in policy-making concerning issues of information technology and gathering and registration of personal data. Political, economic and social circumstances may change so that other requirements for the gathering and registration of personal data may be necessary.

Another very important function that this committee would have is the active assessment of technological developments in its own sphere

of information technology (technology assessment will be discussed in the next chapter). This would not only enhance its ability of policy making but also its expertise and power to advise and inform other government bodies and the public.

The technical aspects of information technology and the problems of personal data imply an active control of a citizens' committee. Normal parliamentary institutions can only have a temporary interest in the functioning of various parts of the bureaucracy. This is so because; (1) a parliament is not meant to directly control the bureaucracy: this control is a function of the executive. (2) Parliament usually takes up discussions about the functioning of the bureaucracy in situations of necessity. In this sense a parliament usually reacts to situations rather than initiating discussions and proposals.

With 'specialized' citizens committees this may be different. Through its specialized knowledge about information technology and its understanding of what is thought and felt by a large number of the population the citizens' committee can actively control the Fourth Power. It does not have to wait until a situation of need for legislative proposals or policy making presents itself. Within its own realm it can actively undertake investigation, formulate policies and enforce them.

The fourth power itself, and this should be clear, is not an entirely independent body. It has to obey the law. Maintaining the law is why it is there. Thus the fourth power is like the executive restricted by the legislative power, also democratic be it in a different way. The only difference with other 'bureaus' is that it does not fall under the direct control of the executive and that it has the possibility to propose its own elimination, when its citizen committee perceives that the control of information technology with respect to the privacy of citizens is no longer necessary.

#### 7.7. Technology assessment as a tool for control.

In order to be able to be able to control the use of certain aspects of information technology, the citizens committee concerned with the Fourth Power has to merely be informed about the current state of affairs but must be able to foresee, as far as that is possible, future developments of technology. Therefore, one of its tasks is to assess and extrapolate developments of information technology. I want, with this task in mind, look at a method of research which has become important in respect to the forecasting of technological developments.

At the beginning of the nineteen seventies a method of research was proposed in relation to technology and its effects to society and

nature. This was called 'technology assessment'. It was very broadly defined as a kind of future research, in which the possible effects of a new technology is assessed.

Technology assessment comprises studies that systematically examine the effects on society that may occur when a technology is introduced, extended, or modified, with special emphasis on those consequences that are unintended, indirect, or delayed.<sup>219</sup>

Some writers distinguish two ways of approach: (1) the problem oriented approach and (2) the technology oriented approach. The problem oriented approach directs itself to the more or less direct effects of a technology (risk assessment may come in this category) and the technology oriented approach is directed towards the long term consequences of a technology.<sup>220</sup> In the following I will discuss these two approaches together, because I believe that they cannot be separated as two totally different ways of looking at technology.

Technology assessment would include the following notions or considerations:

a. Appraisal of technological "progress".\*\*In an early study about

\* Technology assessment was later followed by 'risk assessment' as the basis of technology studies (as some saw it). This approach is, as the name implies, negatively oriented namely on the possibilities of encountering disaster and how to avoid or minimize it. See Conrad, J. (ed) *Society, Technology and Risk Assessment*, London 1980, esp. pp. xix-xvii.

\*\* The constituting items mentioned in the text are Hetman's:  
 a. Appraisal of technological "progress".  
 b. Systematic analysis of socio-technical systems.  
 c. Social impact analysis.  
 d. Evaluation of alternative technologies.  
 e. Study of technological futures.  
 f. Control and management of technology.

(continued...)

technology assessment of the OECD, François Hetman asks: "Of what should the control and management of technology consist?"

For Hetman technology assessment, "though essentially forward looking it is not just technological forecasting as such but an analysis of the societal consequences of technological change." Technology assessment has to be done *before* a new technology is going to be applied.

Note that it is never the intention to inhibit the research and development process. In the Schumpeterian sense the relatively independent 'entrepreneur', who may be very well a scientist or engineer in a R & D centre, must be free to develop whatever he thinks is beneficial, profitable or just nice. If this kind of freedom did not exist, technology assessment would only have the limited function of merely being a decision tool about what to develop, the social impact element would be very much diminished. Because then large organizations and the state would be able to wield complete control over technological and scientific developments.

Aside from this ideal situation technology assessment should also be carried out when the application of a certain technology is on the way

\*\* (...continued)

They are mentioned in: François Hetman, *Society and the Assessment of Technology*, pp.53-65.

so that new insights and experiences can be used as starting points for a new round of analysis.

b. Systematic analysis of socio-technical systems.

Technology assessment is considered by Hetman as an extension of systems engineering. More disciplines are to be involved. Moreover the notion that technology cannot be left alone and that governments should be held responsible for its correct development, is extremely important in this. Both good and bad side effects need be investigated as well as missed opportunities. The study of side effects should not be limited to the short term but should also include also a 'higher-order' level, in the sense of affecting larger structures of society, and longer term consequences should be compared with benefits on the short and long term.

The objection could be made that the belief in the possibility of predicting long-term benefits or dis-benefits is unrealistic. It is true that long term planning and prediction in general is very difficult in our society. Nevertheless this consideration does not absolve us from the duty to try and develop methods which would make such long term views more possible.

c. Social impact analysis.

Hetman signals the need for an independent institution in order to exercise this analysis. This fits in very well with the proposal of citizens' committees.

Such an institute can stimulate the use of new knowledge and develop new tools which can be used in technology assessment, or possibly replace it. "In a world of accelerating change, that is to say to undertake pre-crisis as well as post crisis study, to generate new knowledge and to plan ahead."

d. Evaluation of alternative technologies.

"Considered as a step towards a humanization of science and technology, technology assessment essentially comes out to the evaluation and selection of alternative technologies with regard to a clear defined set of objectives and potential applications... It is designed to take into account [also]... technological applications inclusive of its physical, economic and political side-effects which are very often connected only indirectly with the actual use of technology."

e. Study of technological futures.

In such a study the following items should be included:

1. Technological projection.
2. Technological assessment (technological options).

3. Technological planning.

4. Technological parameters of social and economic planning.

It is clear that much of this still needs to be developed. It may be asked if useful projection and planning is possible at all. Nevertheless, such questions will never be answered when no serious attempt is made to design methods for projection and planning. Through giving direction to research and development projects certainly a part of this problem can be solved.

The difficulty is that such processes cannot be nationally controlled but need a much larger body of control like a world government. Such options are still very far away from reality.

f. Control and management of technology.

Hetman defines the control and management of technology as "a process of analysis, forecasting and assessment of technological futures leading to decision-making":

1. Monitoring side-effects and development of socially acceptable alternatives.
2. Screening and selecting of new technologies resulting from already known or attainable scientific results.
3. Need for original R&D in the development of new and desirable technologies in relation to changing



social goals and future priorities.

Technology assessment has according to Joseph F. Coates<sup>221</sup> six aspects that have to be kept in mind:

1. Technology assessment is a policy tool.
2. Technology assessment is likely to be iterative and part of an interlocking set of studies.
3. New technological knowledge creates new ignorance.
4. A major policy need is the organization of certainty and uncertainty to define effective strategies and tactics for managing any particular technology.
5. More information and analysis, rather than less, promotes better decisions.
6. In the long range, indirect and unanticipated effects of a technology are often more significant than the immediate or planned consequences.

The actual process of technology assessment consists of several steps that have to be taken.\* The purpose of the whole exercise is to trace

\* These steps are according to MITRE Corporation in *A Technology Assessment Methodology*, Washington, D.C. 1971:

1. Define the assessment task;
2. describe the relevant technologies;
3. develop state-of-society assumptions;
4. identify impact areas;
5. make a preliminary impact analysis;
6. identify possible action options;
7. complete impact analysis.

(continued...)

the unintended (and perhaps intended but for the outside world unknown) consequence of the application of a new technology on the short as well as on the long run. This research has to be effected in an institution that is independent from those who have developed the technologies which are under scrutiny and also from those who have a direct interest in its application.

There are various points of criticism against the proposals of technology assessment. When we look at these points of critique it can be shown that the citizens' committees are in a good position to define social and technological objectives:

1. "[D]ifficulties related to the choice of social objectives."

It would probably be better possible for the citizens' committees to define social and technological objectives. They will be less biased by, in a social sense, abstract expertise, because they are a sample of the population selected *not* because of their expertise but of the ability to reflect on a certain issue popular opinions and thought. Of course they would and have to gain a certain expertise in the area that they are covering, because without that their ability to make wise decisions would be greatly impaired. The difference from a real expert is that

\* (...continued)

A full discussion would take the space of a whole book especially because there have been developments in this area. Nevertheless this list of steps serves as to give an impression of what technology assessment is about.

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expertise for them would not have an overruling importance for their deliberations.

There is of course the problem of aggregating the preferences of the members of the committees (Arrow's theorem).<sup>222</sup> The citizens' committees may well become victim of cyclical preferences. This is seen by some writers (Kenneth Arrow and Charles R. Plott, among others) as an undermining phenomenon of liberal, democratic institutions and majority systems. They claim, based on very technical considerations on voting, that 'there is no formula for aggregating consistent (transitive) individual preferences into a consistent (transitive) ranking that will satisfy certain apparently very weak and reasonable conditions.'<sup>223</sup> Thus the definition of social and technological objectives by citizens committees is in danger.

Although this problem has caused heated discussion among experts I think it is beyond the scope of this work to discuss the problem fully.

Barry and Hardin remark about Arrow's theorem:

Arrow demands that we as individuals be able to rank all feasible state of affairs for the whole society. I have no idea how to set about such a task nor presumably does Arrow. What is often easy to do, however, is to rank all available candidates or issue-positions in a formal election. It happens that Arrow's peculiar results follow even for the latter kind of choice problem - although their significance for that realm must be severely qualified, as a brief consideration of the actual practice of majority rule suggests.<sup>224</sup>

In reality the picture is more complex. Although any combination of votes is a mutually exclusive alternative, the situation may arise that no particular outcome can be generated. Just a number of possible alternatives. This is in our case not really a problem. What the citizens committee does than is limit the number of choices and in such a way provide a higher committee like a parliament with an advice which contains of a number of possibilities. Moreover the various choices may interact and are not to be seen as independent from each other. In choosing or determining objectives there has to be extensive discussion which may result in solutions which are less ruled by interest than by necessity. With this I mean that some solutions may be simply technically impossible or difficult. This complicates the picture of cyclical preferences. I do not think that the problem of cyclical preferences will hamper the work of the citizens' committees very much. Cyclical preferences only arise when people disagree also about the issues. In the process of giving advice or recommendations the discussion about the issues is exactly what the citizens' committees should do. They are the only ones in a position where technical expertise and 'good sense' are combined. That means that the discussion about the issues concerning their 'area of competence' is probably more meaningful within their area of competence than outside it.

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2. "[D]ecision on over what time-scale a proposal's effects should be examined."

This point will give great difficulty also to deliberations in a citizens committee. There is no standard which can reasonably be applied other than experience with earlier technology assessment research combined with the ultimate outcomes. Here, clearly, citizens' committees cannot give superior information.

3. "Objectives involve values and these, with the timing of policy and action, are major political questions on which the parties and interests involved will probably hold quite diverse views."

The citizens' committees could probably for the reasons stated above decide between the values connected with the technological objectives involved. The values they would hold would come close to the range of values held by the whole population. The problem with popular vote is that in political campaigns all kinds of values are shrewdly connected to sometime quite adverse political goals, a process usually referred to as propaganda. The voters, without any insight in how these things work, have difficulty in seeing through these propagandistic manipulations.

The citizen committees combine a certain level of expertise with a representation of 'public values', and would therefore be better

equipped to mediate between the values and interests involved with technological objectives as the outcome of various technology studies.

4. "When comparing schemes we need to estimate the extent of each retreat or advance, preferably on a scale that allows concurrent changes to be aggregated; but many human and social benefits and dis-benefits cannot be quantified in any realistic way, and some attempts to calculate 'social costs' have a very contrived air, and convinced few but their authors."<sup>225</sup>

The citizen committees would, of course, have great trouble to quantify benefits and dis-benefits, but that would not keep them from defining a range of possibilities which would give the possibility of showing preferences that live in the population and the willingness to pay certain costs connected with them. For experts working in specialized government or corporate bureaus, this is an extremely difficult problem to solve. But for a citizens committee these difficulties, although not absent, would be less, since they would have less need for quantification in respect to weighing social costs against social benefits.

A construction where citizens' committees or a mini-populus decides on what are to be considered important issues<sup>226</sup> will at least help to solve some of these problems.

The outcome of technology assessment studies would have to be presented in such a way that informed citizens, possibly with the aid of independent experts which may be added to the supporting staff of the citizens committee, can understand them. As we all know research outcomes are liable to manipulation, especially for propaganda purposes (for instance in elections). Therefore it should be stressed that wherever possible unambiguous and understandable language is used for reporting the outcome of technology assessment studies, as for every study that is done for public purposes.

#### 7.8. Conclusion.

The discussion about a fourth power is not entirely new. In a book called *De Vierde Macht* (The Fourth Power)<sup>227</sup> a Dutch professor in public administration observes the de facto existence of a fourth power, i.e. the government bureaucracy.

The bureaucracy has generated so much power in modern societies that he thinks it is appropriate to speak about a fourth power. It has gained this power largely through its monopoly of information. Through the de jure creation of a fourth power a new system of checks and balances could emerge.

Modern information technology could take care that this does not result in the slowing down of the necessary information exchange between the different public organizations, and between these organizations and the public. Moreover the existence of a controlling citizen body which has the duty to report to the public about current situations of data-gathering and usage, would be a safeguard against abuse of this information.

The participation of citizens in the way Dahl proposes it and the presence of a citizen body controlling certain applications of information technology could contribute in the lessening of the alienation of the public from technological and political matters.



## 8. Conclusion.

In chapter 1 I have asked some questions about the possibility and necessity of controlling technology. In order to answer these questions I have looked, not at theories and approaches which describe technology and the society which produces technology in a favourable way, but at theories and viewpoints which take a critical point of view.

The theories of Marx and Engels teach us that technological and also scientific developments, as far as they are tools for production, are intrinsic in a particular type of society called capitalism. Its development is not only dependent on the creative genius of scientists and engineers, but on the needs of a certain type of production, competition and the market.

The critical outlook of Marx and Engels inspired the Frankfurt School to look at the ideological and cultural aspects of technology and science. They did not merely look at the way technological and scientific thought became a part of our culture but they also looked at the effects that this thought and its applications have for the human being. They argued that instead of liberating (in the last instance for Marx and Engels)

technology and science also have an alienating and reducing effect on human consciousness.

The problem of control of technological and scientific developments is grounded in the problem of general liberation of man. Habermas develops this thought in his concept of domination-free communication, because communication is one of the most essential aspects of humanity. Technology, at least in its applications, ought to be controlled. This control, however can only take place in the larger framework of human liberation.

In the light of this discussion one can say that democratic decision-making is certainly a step on the way of human liberation. The thinkers of the Frankfurt School and before them Marx and Engels, although less outspoken, did not believe that 'bourgeois' democracy offers us a way out. Democratic theory does not claim to be able to attain the absolute human liberation, but it provides a means to improve the human condition.

Therefore democratic means of control of technology are to be preferred above static and authoritarian devices.

As an example information technology and more precisely data base technology and the problem of privacy and personal

freedom are used. The quest for control motivates public and private organizations to attempt to gain control over their environment through increased surveillance of the individual. This is seen by many as a threat to individual freedom and privacy. Moreover it is a threat to democracy and liberty.

The diverse kinds of existing legislation, in six countries (Britain, Canada, the Federal Republic of Germany, the Netherlands, Sweden and the United States) about electronic information handling are not sufficient, although they certainly cover a part of the problem. The individual considerations and solutions offered by these pieces of legislation are often valuable but tend to overlook severe problems (like the possible abuse that of data by police and security organizations) and are in general too static.

It is clear that if any public control must take place, the stress will be laid on application rather than on development. That is not to say that there can be no interference in R&D but that companies and research institutions need a certain amount of freedom in order to develop new technologies.

At most certain types of research can become prohibited. But that can only happen in very rare cases. Subsidies can be granted to certain research projects and certain projects can be initiated

by public institutions. But overall control of R&D is impossible and undesirable.

It is in the field of application that public control effectively can take place. For instance certain applications can be slowed down or speeded up according to need. A government may decide not to apply for instance nuclear energy, because of the risks involved given the state of the art of nuclear devices.

The overwhelming problem with democratic governments and its subsequent methods of decision making is the element of expertise combined with moral capacity. Mere technological expertise is not enough to be able to make valuable decisions about anything. The classical notion of 'virtue' is indispensable.

But while the people and their representatives may have virtue they often lack expertise. Even a parliamentary representative who is more or less specialized in a certain field, is often not specialized enough to make a good judgement of a case, or to decide between several conflicting pieces of advice.

Moreover there are the problems of alienation and ideology which go hand in hand with technological developments, especially with developments of information technology as I have

tried to indicate in this chapter. These ideological elements often disguise possible roads to follow and it is not easy to look through them.

My proposal of a fourth power controlled by a citizens committee can only deal with a part of the problem of information technology control, let alone with the control of technology as a whole. Such an institutional arrangement can be of only limited value as far as ideological effects of technology and the development of consciousness are concerned. Still, I believe that it shows a way in which certain application and certain effects of technology can be controlled in a democratic way. This answers the questions asked in chapter one: Is democratic control of technology possible? If this is so, how can it be done?

Democratic control of the actual research and development seems a difficult thing, although a democratic government or other organisation can ask for the research in the direction of the solution of certain problems, for which technological solutions may exist. In the case of the fourth power, R&D in the direction of database technologies and public information dissemination technologies, may be stimulated.

The democratic control over applications is clearly possible. The fourth power proposal is clearly made in view of this possibility. Through legislation which is rather static, and through the ongoing discussion in citizens committees certain applications may be favoured above others, yet others may be excluded because they endanger the rights of those involved with them, etc. The level of protection that the fourth power proposal offers is limited, in the sense that it cannot withstand the attack of a totalitarian government. In Germany of the 1930s ultimately, democratic institutions, unions and other institutions which tried to protect liberty had to succumb to the power of the nazi government. The fourth power proposal can, however, stop certain tendencies towards absolute surveillance at the beginning.

Total control over technological and scientific development seems unlikely, whether it is democratic or not. Science and technology are, so to say, projects of the whole human race and do not leave much possibility for overall control by just a part of that. Through the discussion of the critical theory, I have tried to show that technological development is immanent in social and economic structures which are not easily changed, although the possibility of giving a certain direction to them cannot be excluded.

The possibilities of giving direction to developments as technology lie in changes which are implemented on a partial and often piecemeal basis. Society can probably be consciously altered but it cannot be done as result of a radical intervention. I believe that the growing powers of the human race will force it to become more civilised.

## APPENDIX 1.: Data base Organization.

In this appendix I want to discuss some elementary aspects of data storage and retrieval. In (wo)man-powered administrations files are kept on paper, sometimes in ledgers and sometimes in card-systems. A record which is usually a number of data-items (like name, address, city, salary, etc) put together. In the old system the goal is to cram as much information as possible in one record. This is done because combinations of information from different files is difficult and time consuming.

This can be called an advantage, because it is difficult to bring certain essential pieces of information together when these pieces actually exist in different files. So, for example, if we have two files, one with name and address information together with an ID-number and a file with name and ID-number *and* religious orientation, it is perfectly possible to single out those who are Jewish but it is a long and laborious process.



## Databases.

In computer-organized data-systems this is no longer the case. Especially in structured file systems like databases it is in principle possible to link *every* piece of information to *every other* piece. This is essential for databases. A database is:

a collection of interrelated data stored together [in the same system, which can be spread out over physically different computers, which can also be placed in different locations] with controlled redundancy to serve one or more applications in an optimal fashion; the data are stored so that they are independent of programs which use the data; a common and controlled approach is used in adding new data and modifying and retrieving existing data within the database.<sup>228</sup>

In databases there exist a number of files which contain only records with as few single data-items as possible, with an identification item. Often there is a 'master-file' which contain records essential to make sense of the information stored in the database. Today the database systems are relational databases, contrary to earlier systems called hierarchical database system. A relational database system consists of tables. Each table consists of directly related information, the logical combination of tables is often called a *relationship*. Suppose we have, for instance, a simplified situation where we have to register citizens, income, tax, occupation, and membership of a political organization. In a conventional system we would make the following record and write it on a system-card:

Name	Address	City	Income	Tax	Occupation	Polit. affil.
------	---------	------	--------	-----	------------	---------------

We have here in fact five elements of information:

1. Citizen's name and address.
2. His income (for tax purposes).
3. Tax information (amount and paid yes or no)
4. His occupation.
5. Membership of a political organization or mere political affiliation or beliefs.

These notions we call entities. We have also determined what elements belong to entities. When we have done this we can speak of record-types.

A record-type is an entity of which the belonging elements are known. An entity is a person, thing, notion or basic unit which is used in a certain environment.

The diagram I have showed above is a record. When we leave out the address information, we can simply display the entity citizen without that part of the record which belong to that entity. We have, of course, already done the same with the entity

income, which may consist of more than a simple number or amount of money.

So a logical record would be the following, without the intra-record structure:

Citizen	Income	Tax	Occupation	Political affiliation
---------	--------	-----	------------	-----------------------

Through the ordering in the record the relation citizen, income tax, occupation and political affiliation is fixed. If we have more than one occupation per citizen or membership of more than one political organization we have to duplicate records and this is cumbersome and occupies more space than necessary. This slows down searching and combining.

It is however the classical way of registration until databases came about. Different departments of governments or companies had to deal with information in this way. The exchange of information between departments inside organizations or between organizations is difficult when information is stored in this way. In the Second World War the Nazis had to work literally through whole file systems in order to get the information they wanted.

Electronic data processing makes a much simpler method possible. Consider the following design.

Citizen file:

Number	Name	Address	City	Birth-date	Birth-place	Sex
--------	------	---------	------	------------	-------------	-----

Income file:

Number	Income
--------	--------

Tax file:

Number	Reference to income	Tax to be paid	Paid(Y/N)
--------	---------------------	----------------	-----------

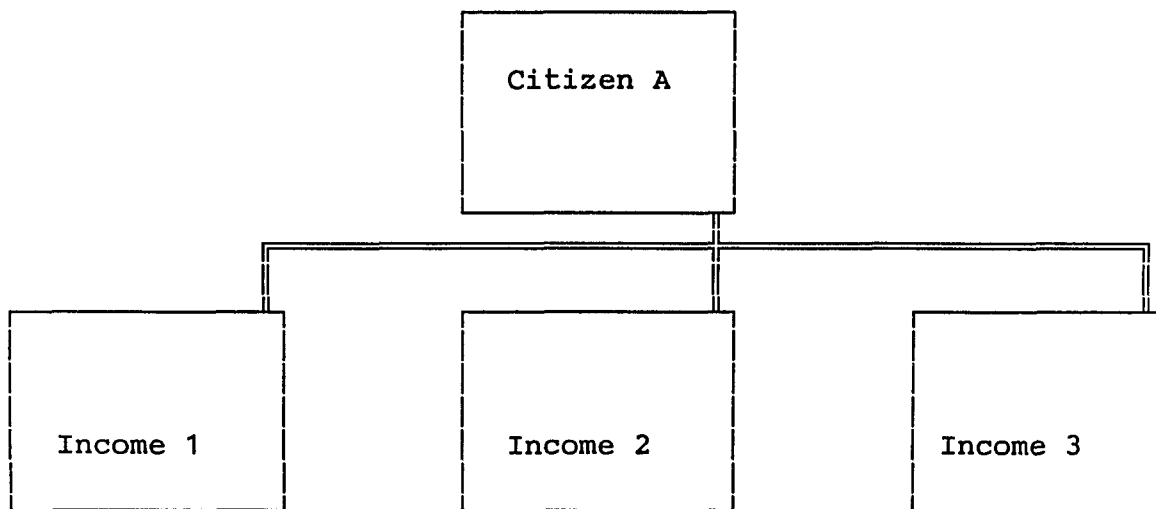
Occupation file:

Number	Occupation
--------	------------

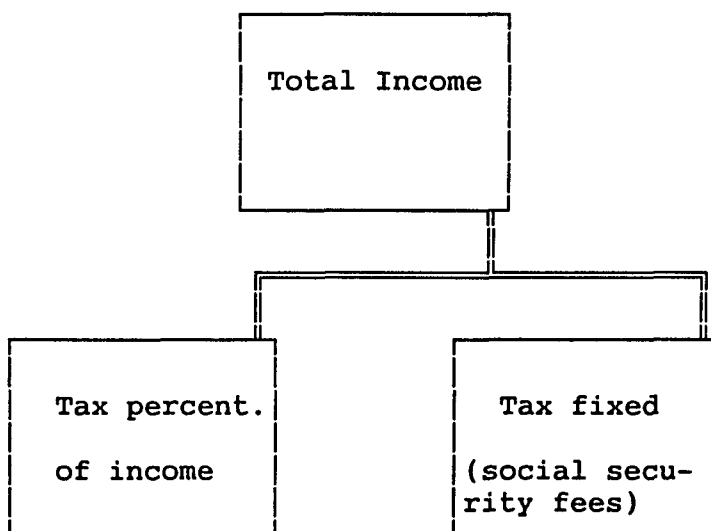
Political file:

Number	Political affiliation
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Suppose a citizen has three incomes from three income generating activities than we would have the following situation.

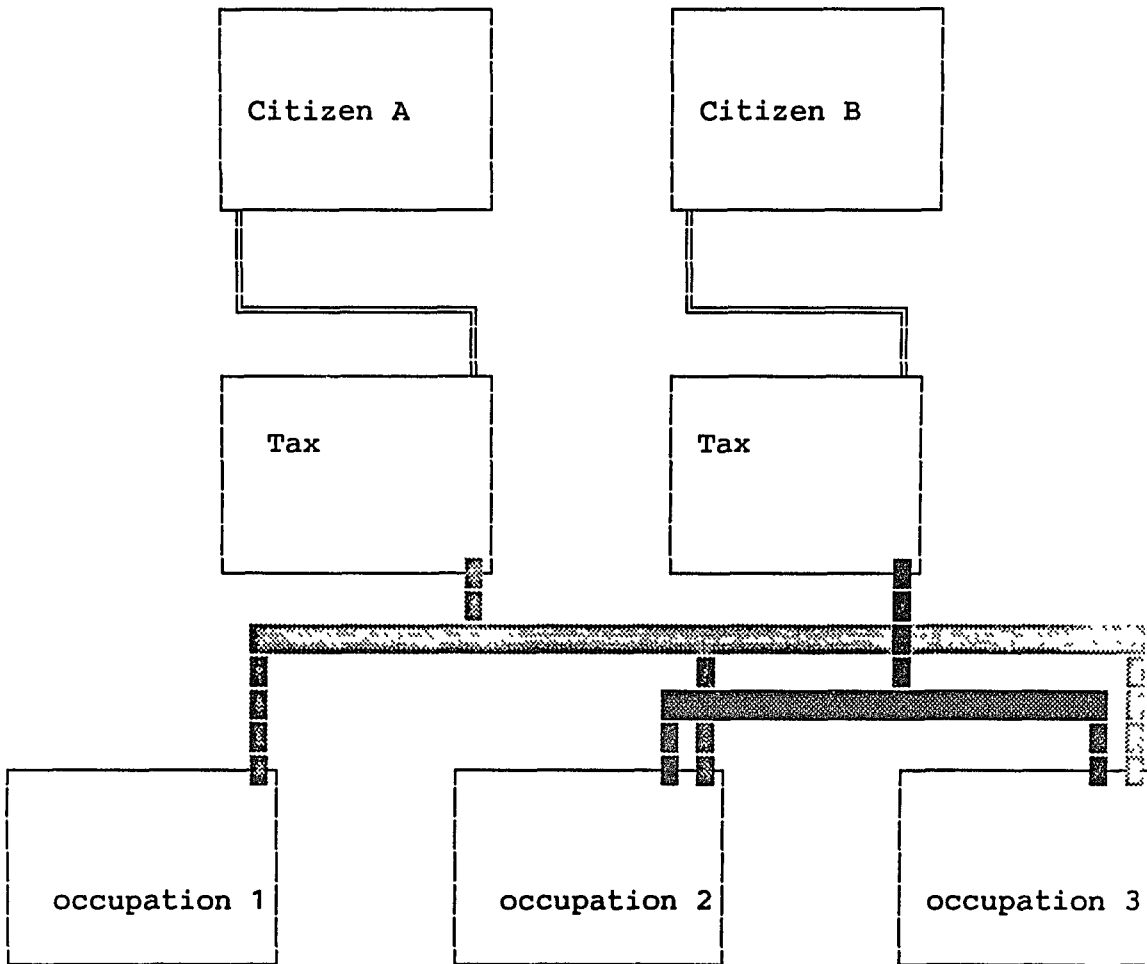


Tax paid:



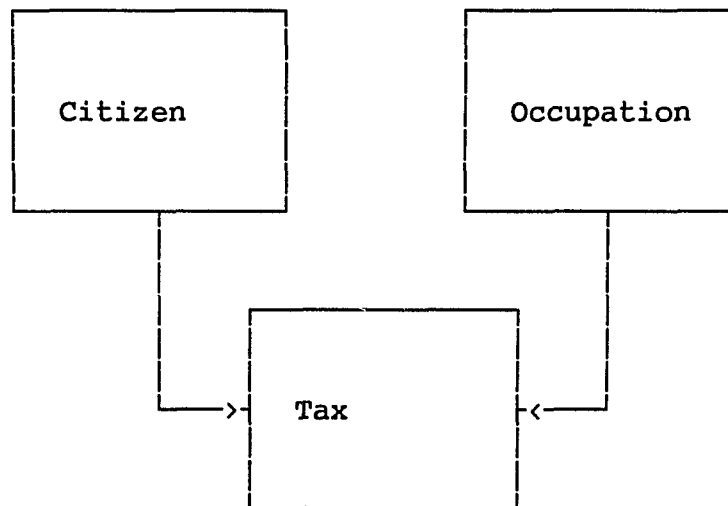
To have these relations would be interesting for checking and statistical purposes combine this information with occupation.

A combination looks like this:



The diagrams above are the occurrences of a certain structure of data.

If we display only the structure, we have the following diagram:



This kind of diagram is called the Bachman diagram after the designer of relational database systems. It presents the logical structure of data. Between the record-types 'citizen', 'occupation', and 'tax' there are relations designated by arrows. Two entities together with the relation that connects the two is a 'set'.

A set has an owner, the record-type from which an arrow departs, and a member, the record-type to which the arrow points. The files which contains owner records is what I earlier called a master file, because it is the file that gives a certain meaning to a relation, or sometimes to a whole database.\*

\* The rules that are given for the notion 'set' in the CODASYL DataBase Task Group Report, Dutch translation, Amsterdam 1978:

(continued...)

Someone who wants to interrogate the database does not have to be concerned with the organization of data. There is a DataBase Management System (DBMS) which takes care of how certain files are to be connected. This system also forms the link between database and user.

In this system it also possible to authorize certain users to use certain information and access to other information can be denied. Those who have full authorization can control also what is stored and what is not. Such authorizations can be given to different government departments, who can define their parts of the database, or define their own databases (which can later be linked to an overall database).

There has to be, of course, a more or less central control of how the database is structured (the database administrator) but this person or institution does not control the use of the database,

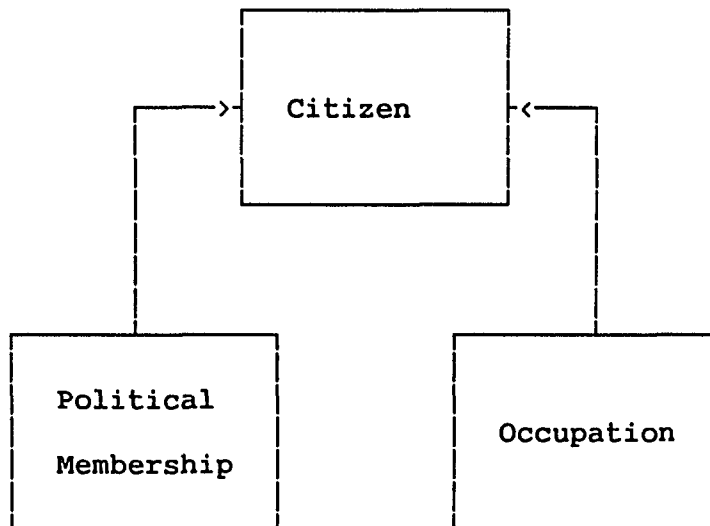
\* (...continued)

- a. one record-type forms the OWNER type, one or more *different* record types form the MEMBER types.
  - b. One SET-OCCURRENCE is formed by one occurrence of the OWNER-record-type and 0, 1 or more occurrences of the MEMBER-record-types.
  - c. A record type cannot be OWNER and MEMBER in one and the same set.
  - d. A record can be the OWNER of 0, 1 or more different sets and at the same time be the MEMBER of 0, 1 or more *other* sets.
  - e. A record-occurrence of the OWNER-type implies a set-occurrence of the set of which it is OWNER.
- An appearance of a MEMBER-type can only exist in one occurrence of the same set-type at the same time.



but merely its technical condition. The user simply states which kinds of information he wants and the relevant records are presented to him in a more or less sophisticated way. The ease with which this can be done is increasing over the years. Database management systems become more and more 'user-friendly' and faster, so that any combination of data can be quickly made. This is of course an advantage and a danger at the same time.

If we have a government that wants to deal with those who have no occupation, or not anymore (unemployed), *and* belong to certain political organizations, the necessary records can be easily found in our simple example.



This way of dealing with information is most efficient, this efficiency is built in the database as a system. The main aspects of a database system are:

1. The logical structure between pieces of data is fully expressed.
  2. Superfluous duplication of data is prevented.
  3. The database can accept and display data in a simple way.
  4. Simple access possibilities.
  5. Privacy. Not every user or program is allowed to access all data which are stored in the database. There is an interface (which belongs to the database management system) between program or user which takes care of this.
  6. Integrity. The data have to be accurate.
  7. A database can recover relatively quickly from malfunctions and mistakes.
  8. Creation, maintenance and reorganization can be done in a simple way.
  9. Testing of new programs and/or user interfaces do not hamper the reliability of the database.
  10. Changing the organization of the database has minimal consequences for the users.
  11. Modern databases can be interrogated interactively, through a query language. The user can in this way directly add and retrieve data in the database.
-

The logical construction of a database is described in a 'SCHEDULE' with the aid of a Data Description Language (DDL). The description of the part of a database that is used for an application or is directly accessible to users is called a SUB-SCHEDULE. Making these descriptions is very much the work of experts.

A user or a programmer does not have to concern himself with the organization of data within a database (there is data independence). The only limitation is the authority to access certain pieces of data. Again defining access-rights is very much a technical business and the work of experts.

I think that this example is sufficient to show from a somewhat more technical viewpoint how easy it is to retrieve the requested data. It should be noted that this data does not have to be present in the same computer. There may be networks of computers present in, for example in every city and in every tax-office, which still support *one* database system.

The database management system may simply support the uninterrupted use of one database spread out over more than one computer. This makes the whole system not very transparent for the citizen when government databases are concerned, even when a theoretical freedom of inquiry is guaranteed by the law.

The citizen needs to know how to access the database management system. And regardless of its user-friendliness this may be difficult.

Several kinds of information on citizens stored in the database may be effectively hidden from any user. So, for instance, the information of membership of political organization can be stored in one part (i.e. one computer of the intelligence service) of the database which is inaccessible for non-authorized users.

It would require much expertise and stamina to find out whether this kind of data exists or not. Only those who have full authorization to examine all parts of the database *could* find out. Therefore the danger that the undesirable combination of certain data can take place is real. The consequences may be that a quite slow and hardly noticeable process towards totalitarianism may take place.

Combination of data by, for instance, a security agency, does not have to result in overt action. It can lead to, what has taken place under the Nixon administration, tax-harassment or other actions which are usually not linked to abuse of personal information. Secondly it may be used in times of crises, like the detention of Japanese Americans during the Second World War.

When a certain level of control over this information is reached by certain agencies, then it can be used in the selection of candidates for high positions in the bureaucracy or for political functions.\* Thus creating a climate where this sort of practice might easier take place without too much public resistance.

\* The revelations about the private life of Senator Hart in the Democratic pre-elections for the presidency of the United States, point in that direction. Aside from the relation of trustworthiness and promiscuity, which may or may not exist, the fact is that clearly information on someone's private life was misused for political purposes.

## APPENDIX 2.: Dataprotection legislations per country.

## Canada

The Canadian government, under pressure of the social science community in Canada, reserved large privileges for social science research.

On March 1, 1978 the Human Rights Act became effective. This act concerns itself with the protection of 'personal information and embodies the principle that the privacy of individuals should be protected *to the greatest extent consistent with the public interest*'.<sup>229</sup> There is a certain limitation on civil liberties built in. Moreover the law is only valid for persons with the Canadian nationality and persons who are resident in Canada.<sup>230</sup> Citizens have a right to demand information about personal data held about them in the government's automatic databases. No reference is made to manual files. These databases contain data which is to be used for administrative purposes. The law requires the annual publication of an index of those governmental (federal) databases which lists the contents of the files and its proposed use. The Canadian government issued guidelines for the implementation of the data protection law. These guidelines include rules about the accuracy of data and the methods of

access open to citizens and social science research.<sup>231</sup> "The regulation of federal information banks and their description in the information bank index only applies to records used for administrative purposes. Similarly, the provision for individual access to personal records in government hands only applies to records used for a decision-making process that relates directly to an individual versus other research and statistical purposes."<sup>232</sup>

It appears the other databases, including private databases, are outside the scope of the provision of the act. It seems that only data held by organizations of the government are concerned. However, the flow of data to other countries is restricted.<sup>233</sup> There is no indication that the data recorded on individuals is in any way limited, only the data should not be 'vague'.<sup>234</sup>

A Privacy Commissioner has been designated by the Canadian Human Rights Commission. The Commissioner can investigate violations of privacy in government databases. The commissioner can only report his findings to the government Minister involved and to the person who complained about abuse of data held on him/her. Neither the concerned Minister nor Parliament have to comply with the Commissioners recommendations.

It seems that the person involved who suspects that data held about him has to develop the initiative of search and complaint. Again only government databases are involved, private databases seem to be out of the picture.

The scientific community has urged the Canadian government to provide them with micro-data (i.e. data about single persons) for social-scientific research. For these purposes (statistical and social scientific research) the Canadian statistical agency, Statistics Canada, issues a sample tape, with de-personalized micro-data on a sample of the population. This tape is given only to bona-fide organizations, like universities and research institutions. This information contains data derived from census data. The release of this sample of de-personalised census data shows the concern for the possibilities of access and use of government data on the Canadian population by social scientists. There is no doubt about the usefulness of social scientific research, but for me the question remains whether a government really needs extensive data on every individual citizen and if so if it is necessary to disseminate such data in one form or another (de-personalized) to social scientists. I will return to this question at the end of this chapter.



The limits on civil liberty regarding the public interest are clear. Like in Britain and many other countries, police and national security organizations are exempted from limitations concerning personal data. They can collect and retain data on every aspect of one's private life without any hindrance from the side of the law, because they defend the public interest.

Again a summary with the nine categories in mind:

1. The Canadian data protection law concerns itself only with public (government owned) databases.
2. The Canadian data protection law allows citizens to demand information about what is held about them in *government data banks*. It is not at all clear if they can do the same for private databases.
3. It seems that there are no general regulations about what is 'illegal' data or not. There is complete freedom to gather all data necessary for a specific government task. It is dissemination of such data which has become illegal under circumstances not in line with 'the public interest'.
4. The law is only concerned with the abuse of data in government of public data banks. There the law prosecutes abuse. The ones prosecuted are invariably the 'abusing' civil servants or bureaus or third parties who have either illegally acquired access to government data banks or have used

government data which has given to them for specific tasks for different purposes.

5. The institute which is concerned with the inspection of data and its use is the Privacy Commissioner, who, however, has no official powers beyond reporting data-abuse and giving recommendations to the Government and Parliament.

6. The individual involved is the first one to prosecute eventual data-abuse about himself. Only when large scale abuse of government data is discovered, the minister or the parliament may take action on recommendation of the Privacy Commissioner.

7. The law certainly regards data-transfers to other countries, and this also involves private data banks.

8. The law is not concerned with manually processed data or paper-files.

9. There is no registration duty for data banks other than government data banks which automatically appear in the index of government data banks together with their file-descriptions.

The Federal Republic of Germany.

At January 27, 1977 the German federal data protection law, 'das Bundes Datenschutz Gesetz (BDSG)', was enacted.' The intention of the act is not merely to protect against the misuse of personal data in data processing but to 'guarantee the integrity of the individual when information about his person is handled in an organized way.' The interesting thing about the law is that the *content* of the information is considered to be *not important*. Only the fact that identifiable persons are involved is sufficient to be covered by the law. The law also includes manually handled files when they refer to identifiable persons. The same is valid for data stored by the press or media archives.<sup>235</sup> This is not so strange given the level on which gossip-newspapers operate in Germany.

The BDSG is concerned with public as well as private databases. The individual 'Länder' may have their own data protection laws but have to abide by the general principles of the BDSG. These principles are:

- a. The processing (storage, transfer, modification, erasure) of personal data is admissible only if permitted so by legal provision (including those of the BDSG) or if the person

\* The German 'Land' of Hessen was the first state in the world which formulated legislation concerning the use of personal data. See Ulrich Damman and Ralph Brennecke, *Country Report Federal Republic of Germany*, in Mochmann and Müller, "Data Protection and Social Science Research", *ibid.*, p.129.

concerned has given his consent. The most important admissibility criteria of the BDSG are:

- in the public sector: the necessity for the legitimate accomplishment of the tasks of the public bodies involved;
- in the private sector: the purpose of a contractual or quasicontractual relationship with the person concerned or a careful consideration and balance of legitimate interests ("berechtigete Interessen") of the person/institution who has the data or gains access to them on the one hand and the threatened interests of the person concerned warranting protection ("schutzwürdige Belange") on the other.

b. Data have to be blocked (subject to no further use except under certain conditions) and to be erased on application of the person concerned if there is no further need of these data for accomplishment of the original task or purpose.

c. The person concerned has the right to know what data are stored. Exceptions are enumerated. In general, the person enquiring has to pay for the information. The law provides for the information on where data are or could be stored - in the public sector by means of official publications and public registers (about the structure and purpose of data registers), in the private sector by individual information about the storage of information about him, if he does not know already.

d. The individual concerned can ask for the correction of incorrect data, and for the erasure of data stored without justification. If the correctness of data is contested, they have to be blocked.

e. A federal data protection commissioner (Bundesbeauftragter für den Datenschutz) is appointed by the President on the proposal of the federal government as an independent agency of control over the federal administration. He reports directly to the parliament and to the government. The states have created similar control institutions. Private data processing activities are under the (limited) control of state agencies. Anybody concerned may appeal to one of these control institutions, if he feels his rights to be violated by the processing of his personal data. Physical persons and private bodies beyond a certain volume of data processing have to appoint an internal data protection commissioner who is responsible for the enforcement of data protection.

f. Unauthorized transfer and modification of data are criminal offenses. The penalty is up to two years imprisonment.<sup>236</sup>

What is probably not known by the general public in Germany is that census data (note that census data is data about *identifiable persons*) can be copied to various public institutions, notably townships (*Gemeinden*) in order to update their population registers which are generally thought to overstate the size of the population. This is a simple and routine action, which involves the connection of the census computers at the Federal Statistical Office (*Statistisches Bundesamt*) and the computers of the other public institution. The data are, of course, transferred in a compatible form.<sup>237</sup> Below I will concern myself with the possible consequences of such transfers.

The BDSG also defines principles about the collection of data.

The collection of data about individuals is admissible:

1. "if permitted by legal provisions or
2. If the person concerned has consented (in writing, except when another form is appropriate)."<sup>238</sup>

Data collection is admissible for:

"... [P]ublic bodies: as far as it is necessary to accomplish their tasks, - for private persons and institutions: within a contractual relationship or as far as it is necessary to safeguard their legitimate interests, and provided that no interests of the person

concerned warranting protection will be harmed; furthermore manual storing of information directly derived from generally accessible sources."<sup>239</sup>

Transfer of personal data from public authorities to other (public or private) organizations in other countries is admitted under certain conditions. Such transfers can take place if the receiver can make clear that he needs the data and has a formally justified interest in these data. Or that the sender has an interest in transferring the data to a certain receiver. Transfer can only take place when there is a justified and credible interest in transferring them or when personal data about persons involved which are worth protecting are not violated. Transfers take place in the sphere of justice, public administration, tax (to avoid double taxation), crime and drugs. There is, however, the possibility of special laws which can annul the above. Certain processing of data can take place outside of the BDSG when another law states that it is legal.

Persons whose personal data are transferred or processed are protected within the BDSG:

1. The rights of the person involved may not be worse than under the BDSG, when they are transferred to another country. This can only be the case when.

2. the receiving country has data protection legislation which is in its essentials comparable to the BDSG, or
3. when the receiving country has a special treaty with the Federal republic which takes care of the rights of the persons whose data is transferred.

Summarizing we can say that:

1. The BDSG concerns itself with public as well as private databases.
2. Individuals can demand information about what is stored about them in a (public or private) database. For the answer a fee may be demanded.
3. There seems to be no provisions about what kind of data is registered or not. There is no evidence that certain data is labelled illegal.
4. The law has only provisions about 'incorrect' data and not about illegal data. The law demands that only data that is correct may be used for its legal purpose and otherwise should be blocked. Only the registration of incorrect data or personal data which can be traced back to an individual by non-authorized databases and the unauthorized transfer and modification of data are prosecuted.
5. There is a data inspector who is concerned with the enforcement of data protection.

6. It seems that under the BDSG the data commissioner can take the initiative of the prosecution violators of the law, in public as well as in private databases, however the individual(s) concerned have their own rights of prosecution.

7. The law regards data transfers to other countries. These transfers need a license from the Federal Government and are in general limited to countries which have comparable data protection laws to the BDSG, or when statutory obligations demand such transfers (mostly tax information). Incoming transfers are of no legal concern.

8. The law does include manual as well as automated files. There seems as far as privacy is concerned to be no difference between them for the BDSG.

9. There is a registration duty for data-gathering and processing when personal data is involved. When public institutions are concerned the law proscribes that a list is published with databases in it which store individual data. Private organizations have to inform individuals that data is stored about them in their databases.



## The Netherlands.

On December 1, 1981 the dutch parliament agreed about a law concerning data protection.<sup>240</sup> The law follows the principles established in the advice of a commission (Commissie Koopmans) set up as early as 1972 (after the census agitation of 1971) and who delivered its final report in 1976.

The data protection law does not restrict itself to automated databases. This is contrary to what the Commission proposed. A restriction should be made, according to the Commission Koopmans, on practical grounds. It is very difficult to try and control already existing and well-established institutions with a large volume of data on persons in paper files.<sup>241</sup> The consequence is, of course, that name and address information can be stored in a manual administration and all other sensitive data in an automatic one, which provides the interested persons with a number which corresponds to name and address information. Therefore the law does includes manual files.

The law has two ways of control:

1. It established a body which registers 'sensitive' databases and grants permits, the registration office (Registratie Kamer).

2. It granted rights to the individual who is registered and which are supposed to protect the individual.<sup>242</sup>

The law defines 'personal data' as all data which can be traced back to an individual (identifiable data) however difficult this may be. This involves the possibility of decrypting encrypted data, linking remote databases to one another, burglary (electronic or otherwise).

Public preventive control takes place through the following provisions:

- a. All (automated) data banks handling personal data must be registered. Extra obligations:
- b. Those data banks which do not fall in the category of rather simple administrative systems (lists of subscribers to a magazine, or members of associations) are obliged to draw up regulations describing the information handling procedures and privacy protection measures; these regulations must be agreed to by the Registration office.
- c. For the most dangerous data banks (carrying sensitive information like medical, criminal, psychological, etc. data) or which disseminate to third parties, a system of permits is proposed. The registration office can make conditions to enhance the protection of the privacy of the registered

individuals before granting the permit.

The General Provision of the law:

The most important rule is that no dissemination of the data to third parties other than those mentioned in regulations or permit agreed to by the Registration office may take place.

Exceptions can be made:

- a. with consent of the registered individual;
- b. with special consent of the Registration office;
- c. for cases which can be seen as a part of the "normal functioning" of the registration system;
- d. when based on legal obligations;
- e. to investigating police-officers.<sup>243</sup>

The law does not limit or prohibit in any way what kind of information can be gathered about individuals, it only limits the dissemination of this information.

The individual has the right to inspect data about himself and demand correction in the case of incorrect data. Any database with 'sensitive' data in it has to keep a log of any third-party-access to the database. The owner of a database which registers individual data, has to send to every individual a notice on the moment of registration that data about this person is entered in

the database. This has to happen only when this is not made clear in another way.

There is an exception for police and medical databases and, social scientific or statistical databases. In the case of social scientific databases the right to inspect data may be suspended since the organisation of these databases is not directed towards particular individuals but towards certain personal characteristics of an individual.<sup>244</sup>

The active control and prosecution of those who abuse data lies obviously with the individual, and not with the registration office, whose task it is to merely grant permits (with or without conditions). As with all other legislations security and police databases are exempted from any registration duties and are not subject to the control of either the individual concerned nor of any other public or private entity.

A special part of the law concerns itself with the international situation. The three paragraphs under this chapter establish the reach of the law in order to prevent the evasion of the law through data transfers and processing in other countries. The databases concerned with personal data established in a foreign country by a Dutch or Dutch based organizations have to obey

to the same rules as databases established in the Netherlands. Transfers of Dutch 'sensitive' data and foreign databases accessed or owned by Dutch organizations need a permit from the registration office.

This is the same for data security of foreign databases which can be accessed from the Netherlands. When the database is established in a foreign country under the supervision of a foreign owner or another foreign organisation, no registration is necessary under Dutch law, also when private data about Dutch nationals is stored. The registration office can give dispensation to particular databases in case of conflict with foreign dataprotection laws.<sup>245</sup>

Summarizing we can say that:

1. The Dutch data protection law includes public as well as private databases which hold 'sensitive' information.
2. Individuals have the right to demand information about data stored on them in a database.
3. There is *no* illegal data. The collection of data is free.
4. There is consequently no prosecution of databases which collect illegal data, only correction of incorrect data can be demanded.

5. There is a registration office which grants permits to databases which have sensitive data.
6. The prosecuting in the case of illegal dissemination or storage of incorrect data lies primarily with the individual(s) concerned.
7. The law regard data transfers to foreign countries. Transfers of Dutch 'sensitive' data and foreign databases accessed or owned by Dutch organizations need a permit from the registration office.
8. The law explicitly includes manually operated files.
9. There is a registration duty for data gathering and processing for both public and private databases, when they contain personal data.

#### Sweden.

Sweden was the first sovereign state to enact a data protection law. The law came into force in July 1, 1973.<sup>\*</sup> Sweden has been the first in many related things. Since 1947 every Swedish citizen has a Personal Identification Number (PIN). This code contains information about date of birth and sex.<sup>246</sup> The existence of this code together with the increasing importance of electronic data

<sup>\*</sup> The German State of Hessen, as noted above, enacted the first data protection law in the world, but Hessen is not a sovereign state.

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processing was the reason for discussions about privacy during the end of the sixties and the beginning of the seventies.<sup>247</sup>

Another interesting feature of Swedish society is that there is great openness of governmental information to all citizens. This is so because of the constitutional principle of freedom of information and publicity. This principle originated in the eighteenth century and is only limited by the secrecy law.

The secrecy law, amended in may 28, 1937, establishes "restraints on the Right of the General Public to have access to Official Documents." It also guarantees the secrecy of identifiable information on a person for a period of twenty years.<sup>248</sup>

"The Data Act defines 'personal information' as 'information concerning an individual'. A 'personal register' is 'any register or any other notes made by automatic data processing and containing personal information that can be assigned to the individual concerned.'

The Data Act stipulates that a personal register must not be started or kept without permission by the Data Inspection Board (DIB), unless the register has been ordered by the Government or the Parliament. The DIB shall give permission to create and run a personal register, if there is no reason to assume that the

register will lead to undue encroachment on the personal integrity of registered persons and the register is kept according to the rules set up by the board.<sup>11249</sup> The Data Act does not concern itself with manual files, including when they can be mechanically (punch card sorting, etc.) be sorted or selected. Neither does the act protect the privacy of 'non-living' persons.<sup>250</sup>

There is a restriction on what kind of data may be stored and what kind of data may not be stored without specific permission of the DIB. There must be specific reasons and needs accompanied with a number of safeguards for the storage of data like: information about criminal convictions, whether a person "has been treated as a Child Welfare Committee case", information about drug addiction, information about dependence on welfare, information about religion and political affiliation, and presumably racial origin. One exception is that religious and political organisation may keep a computerized list of their members.

It must be mentioned that the formulation of the Data Act is so general that, at least in theory, the most trivial files containing no more than names and addresses needed a permit. Especially today, with so many personal computers containing small



databases with names, addresses and telephone numbers of relatives, friends and business connections, the procedure of applying for and granting permissions for databases becomes impossible. In practice this is not done, and larger databases not important for the 'personal integrity' of the ones registered get permits on a routine basis.

The DIB has had, because of these general terms, many conflicts with the Swedish National Central Bureau of Statistics (Statistiska Centralbyran - SCB). Flaherty described the reasons for this conflict:

Certain fundamental themes developed by the leadership of DIB have influenced their decisions on activities at SCB. DIB advocated policies which are both controversial and overly cautious by international standards. These views appear to be largely associated with the articulate Director General and former deputy-director of the DIB, Jan Freese, because he has been actively engaged as a publicist for data protection and has written and thought a great deal about the impact of computers on society.

Freese doubted that a statistical bureau in the form of the SCB had any real use for society. Freese believes that most statistical data necessary for governmental and economic purposes can be assembled in other ways than through the aggregation of citizen records. SCB would at most have an advising task as a bureau of statistical experts.

For example, Freese believes the police could handle the task of compiling criminal statistics with guidance on statistical methodology from SCB. This would not only prevent the

transfer of data from the police to SCB, but also limit the possibilities of linking criminal data to other information.... Some members of the board of DIB along with Jan Freese are associated with the view that a democratic society cannot afford the risk of the accumulation of large amounts of identifiable information in one place, such as at SCB. They argue that such centralized data are more subject to abuse than decentralized information.<sup>251</sup>

The DIB publishes a list of databases and research projects which contain or are concerned with personal data. The citizens have a right to request what kind of information is stored about them, although not more than once a year per database. There appears to be no fees for this service.

The DIB prosecutes actively all those who violate the Data Act. Private citizens have of course the right to prosecute those who disseminate their private information without their consent or who store either illegal or incorrect data.

Only the transfer (only out of Sweden) of computerized personal data needs a license of the DIB. In this respect the Data Act includes manual files, and is in this way more strict than when internal Swedish transfers are concerned. When a license for export is applied for the Data Inspection tries to determine if the dataprotection laws of the importing country are comparable to the Swedish laws. If that is not the case the

license is refused. The import of information is not included in the law.

Summarizing we can say that:

1. The law includes public as well as private databases, with the exception of police, security and databases called for by the government of the parliament for special purposes.
2. Individuals can demand information about data which is stored about them in databases, but only once a year per database. Periodically a list of databases which contain personal data is published.
3. There is illegal data. Without explicit permission data about criminal convictions, race, registration at a welfare agency, religion, political affiliation, etc., may not be gathered and stored.
4. Hence the law prosecutes those databases which store 'illegal' data, without a special permission.
5. The Data Act has established a Data Inspection Bureau (DIB) which concerns itself with the distribution of permits to databases which store personal information and permits for the transfer of data from Sweden to foreign countries.
6. Prosecution of violation of the Data Act lies primarily with the data inspection agency (DIB) and furthermore with the citizen whose 'personal integrity' is endangered through this violation.

7. The Data Act also concerns itself with data transfer to foreign countries, and is in this respect more strict than when internal Swedish transfers and data gathering are concerned. It concerns itself, among others, also the transfer of manual files to foreign countries.

8. For internal Swedish affairs the Data Act does not concern itself with manual files, only with automated files.

9. There is a registration duty for data gathering and processing when personal data is involved. This extends itself also to social scientific research.

#### The United States of America.

In the United States the protection of data is regulated in two laws, the Privacy Act of 1974, and The Freedom of Information Act of 1966 (amended in 1974 and 1976). Both laws are specifically directed to federal bureaus and databases.<sup>252</sup> However, most if not all states have implemented similar legislation as the federal government.

The Privacy Act is concerned with the protection of the citizens' right to privacy. In doing so it regulates the "collection, management, and disclosure of personal information maintained by governmental agencies."<sup>253</sup> The collection of data by private

organizations is not limited. The dissemination of data by these organizations is only limited by the relevant articles in the constitution and other laws about libel and slander.

An interesting example of this freedom is mentioned by Flaherty when he discusses the public discussion about privacy measures, or the lack of them, in the Bureau of the Census:

Moreover, critics of the Bureau of the Census seem unaware of the amazing variety of personal information on individual American adults annually published in city directories by R.L.Polk and Company of Detroit. Its 1400 community directories list the name and address, marital status, occupation, place of employment, telephone number, residence, and information about rental or home ownership for individuals in the locality. In response to specific requests from its clients, Polk can produce geographical selections of information by areas as small as postal zones, census tracts, or neighborhoods. Yet the company states the "we don't have anything in our files that is not available under the law."<sup>254</sup>

It seems to me that when the protection of privacy is concerned also the development of databases like Polk's should be controlled in some respect.

The Privacy Act gives citizens the right to inquire whether information about them is stored in federal databases and demand access to these records, in so far as they do not have access under the Freedom of Information Act which tries to improve the openness of government and public access to data.

In contrast to European systems, the US system of data gathering about citizens and nationals is much less thorough. It seems that the various US governmental agencies, be it on federal or state level, do not want to record if anything at all about their citizens. The only thorough data gathering and processing is the census which is held every ten years, and updated with minicensuses. It is therefore that a large part of the concern of the Privacy Act was with the Bureau of the Census, followed by the Social Security Administration and the Department of Health, Education and Welfare. Where they could exchange data under the Federal Reports Act, in order to improve efficiency and decrease redundancy of data, they are now restricted in the kinds of information they can exchange. When this information includes personal data about identifiable individuals the exchange may be prohibited. However, a limited flow of identifiable data among federal agencies is permissible, according to the privacy Protection Study Commission in their final report of 1977. The condition is that there has to be a commensurate increase in protection of confidentiality. The Commission in its report concerns itself also with social scientific research.<sup>255</sup>

There is no definition of explicitly illegal data but the Privacy Act stipulates that agencies shall maintain "only such information about an individual as is relevant and necessary to accomplish a

purpose of the agency required to be accomplished by statute or executive order of the President." Each Federal Agency, however, is responsible for interpreting the Act. There is no Data Inspection Commission or any comparable institution, which reviews the data concerned. Within the various federal agencies there are officers who concern themselves, among other tasks, with the implementation of the Privacy Act, although the Act itself does not require this. Nothing is known about their performance!<sup>256</sup>

The Privacy Act requires that all federal agencies publish in the Federal Register the properties of their databases. The information has to conform to the safeguards which the Act imposes on them by requiring "fair record keeping practices."<sup>257</sup> This includes that, although in many cases social scientists have access to data, they may not disseminate identifiable data in their research reports or otherwise.<sup>258</sup>

The Privacy Act does not concern itself with data transfers to other countries, nor is there any other law or statute that does this.

The summary of US data protection legislation is quite simple:

1. The laws concerned are only directed to the governmental level and explicitly not to private databases.
2. Individuals have the right to demand what information is stored about them in federal databases, under the Privacy Act and the Freedom of Information Act. They have the right to demand correction of wrong data.\*
3. There is no illegal data defined in the Privacy Act, although it may be assumed that certain data like political affiliation and religion are not registered, since this is not normally done in US governmental administrations, except perhaps the Census Bureau.
4. Hence there is no prosecution of those databases which store 'illegal' data since there is none.
5. There is no data inspection agency or comparable institution.
6. The individuals concerned have the responsibility when incorrect data is stored about them or when data is held which

\* Compare with point 8 of the recommendations of the HEW quoted above, which specifies that the public notice includes:

1. The name of the system;
  2. The nature and the purpose(s) of the system;
  3. The categories and number of persons on whom data are (to be) maintained;
  4. The categories of data (to be) maintained, indicating which categories are (to be) stored in computer-accessible files;
  5. The organization's policies and practices regarding data storage, duration of retention of data, and disposal thereof;
  6. The categories of data sources;
  7. A description of all types of use (to be) made of data, indicating those involving computer-accessible files, and including all classes of users and the organizational relationships among them;
  8. *The procedures whereby an individual can (i) be informed if he is the subject of data in the system; (ii) gain access to such data; and (iii) contest their accuracy, completeness, pertinence, and the necessity for retaining them;*
  9. The title, name, and address of the person immediately responsible for the system.'
- Quoted in De Graaf, 1977, p.205-7.



is not in line with the statutory purposes of the agency involved to prosecute the agency is all else fails.

7. US law does not regard data transfers to other countries.

8. The Privacy Act does not seem to make a distinction between automated files and manual files.

9. All Federal agencies have to register their databases in a data register which is published every year.

Britain.

On November 11, 1987 the Data Protection Act came into force in Britain. As such it is the latest data protection legislation that came into power in a western country. The purpose of this act is to protect citizens against abuse of data that was held on them. Moreover the Act gives them the right to know what is held on them.

The Data Protection Act received Royal Assent in July 1984, and is itself the result of a long process of discussion in Britain. The ultimate cause for the act to come about was the European Convention on Human Rights which came into force in 1953.<sup>259</sup> In the twenty years between the European Convention and the adoption of the Data Protection Act things have changed but not so much that principles like privacy and the limitations on the

right of interference of a government with private life and correspondence have disappeared.

The Act demands organizations and persons processing data on computers to register with the Data Registrar. It is a criminal offence not to register. The act does not specify how big or how small these organizations should be in order to register or whether private persons (with an address list in which data about friends and relatives is collected) should register or not.

#### 4. Registration of data users and computer bureaux

(1) The Registrar shall maintain a register of data users who hold, and of persons carrying on computer bureaux who provide services in respect of, personal data and shall make an entry in the register in pursuance of each application for registration accepted by him under this part of this Act.<sup>260</sup>

The Act maintains six data protection principles. "Organizations using computers are required to ensure all information is:

- collected and processed fairly and lawfully
- held only for lawful purposes described in the register entry made by the organization
- used only for the purposes and only disclosed to the people described in the register entry
- adequate, relevant and not excessive in relation to the purposes for which they are being held
- accurate and, where necessary, kept up to date
- protected by proper security.

The Act provides the citizens with five rights:

- to check if any organization keeps information about [him/her] *on computer* [underlining by me]
- to see a copy of this information subject to certain exceptions
- to complain to the Data Registrar or the courts if [he/she] does not like the way organizations are collecting or using the personal information on their computer
- to have inaccurate computer records corrected or deleted
- to seek compensation for damage by the misuse of computer records.<sup>261</sup>

In section 2(3) of the act there is a provision about which data may be restricted:

The secretary of state is empowered to modify or supplement by order the data protection principles in matters of a potentially sensitive nature, and any such orders once passed into law will be included in references to the act and the data protection principles.

This provision derives from Article 6 of the Council of Europe Convention which requires that personal data in respect of -

- (a) racial origin
- (b) political opinions or religious beliefs
- (c) physical or mental health or sexual life
- (d) criminal convictions

may not be passed automatically unless domestic law provides adequate safeguards.

There is no doubt that massive amounts of personal data as described above are processed automatically and much of it will be exempted from the operation of the act altogether for reasons of national security and from the subject access provisions for reasons to do with the prevention of crime and the collection of taxes.<sup>262</sup>

Still the Act does not provide enough protection against abuse, especially when this abuse comes from the side of the Police and the various Intelligence and National Security agencies that Britain has. In this respect the Act follows other countries, who also exclude police and security organizations from their data protection legislation. For instance, the British police have access for operational purposes to the identifiable records of individuals at the Criminal Record Office, which is separate from the Home Office.<sup>263</sup> These organizations are exempt from registration and there is *no* control on the way they gather information about individuals, how they store, for how long they store it and above all how they are using it. It is rather disturbing that, in this latest example of legislation, this element did not receive more thought than it did.

Another element is that [the Act] does not cover manual records, allowing information users to protect their most damaging data by retaining them *or transferring them* to paper. Information once held on a computer database need not be disclosed to the data subject if it is later processed only on paper. However, in the definition section of the act, minimal data (like name and address) held on a computer with references to a manual record are included in the act. The combination of computer and

manual files is seen in the same way as combined computer-files.<sup>264</sup>

Even if data users do not transfer their sensitive data to paper, they can evade the Act by processing it in a fashion contrived to avoid referring to individuals in their main records.<sup>265</sup>

This means that the protection the Act is offering is rather superficial. Mail order organizations have large amounts of data on people that goes beyond mere name and address information. They register information about occupation, neighbourhood, activities, race, age and sex. These databases do not only use this information themselves, for marketing and advertisement purposes, but sell this information to whomever offers a good price. The Act does not cover these activities.

The self-control of the Data Protection Act is almost fully absent. The Act demands no supervision of the civil servants working to enforce the Act. The registrar is not supervised. And after the data-users (the organizations with the databases concerned) have registered they can do almost anything they want with it. The only case that a violation can be detected is when a data subject finds out about it, usually by chance. There is no way that a data-subject can, in practice, ensure that data about him/her is correct. He or she cannot ask the Data Protection Registrar to

find out who has information about him/her. Data-subjects have to find that out for themselves, and only then they can ask the data-user to inform them about it. The data-user can require a fee from the data-subject for searching and/or correcting data held on the subject.<sup>266</sup>

As I have indicated above intelligence and security organizations have been exempted from the act. The further danger is that they themselves can use "the Data Protection Register itself as a guide to gathering of further personal information."<sup>267</sup> These security and intelligence organizations have no limitations on what they are allowed to register about someone. The Act does not even impose limitations on 'normal' data users. There can be no doubt that the British Data Protection Act is useless and will not effectively protect citizens against possible abuse of data held about them. It can only serve as an instrument of legitimation for data activities of the government itself and of those connected with it.

Summarizing with the categories mentioned earlier in mind one can say, about the British data protection Act that:

1. The law covers public as well as private databases.
2. in theory persons have the right to demand what data is held about them in various data banks, but they have to go to

database holders whom they suspect of having data on them. They may be required to pay a fee to the holder for their inquiry.

3. There is 'illegal data' like data about race, health, political or religious affiliation, and criminal convictions when not held for legal purposes. There are exemptions for this for police, hospitals and various other governmental institutions. There is no limit concerning the period over which such data may be held on a person.

4. The act will punish those databases which have wrong data or data about race, health, political or religious affiliation, and criminal convictions for which they have no legal purpose and hence exemption from the laws regulations.

5. There is an institute, the data-register headed by the data registrar, which registers databases which hold information about individuals. The organization of the database is checked, but no further checking is done after registration.

6. The prosecuting duty lies primarily with the person involved and not with the law.

7. Transfer to other countries is limited in general to those countries who are bound by the European Convention to other countries a request has to be filed with the Registrar.<sup>268</sup>

8. The law does not regard pure manual or paper files.

9. The law demands registration when data on individuals is going to be held as a computer-bureau which may disclose this information to others.

Unfortunately almost all of the other legislations discussed in this chapter are less comprehensive than the British Data Protection Act. A possible explanation is probably the strong libertarian ideology professed by the present British government. This would mean that, at least in theory, individual privacy is seen as such a fundamental right, that it is in need of the utmost protection.



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42. "Panik bricht nach Jahrtausenden von Aufklärung wieder hinein über eine Menschheit, deren Herrschaft über Natur als Herrschaft über Menschen an Grauen hinter sich lässt, was je Menschen von Natur zu fürchten hatte." *ibid.* p. 321.
43. "Diese Überlegung ernüchtert, weil Technik, wenn sie überhaupt auf einen Entwurf zurückgeht, offenbar nur auf ein 'Projekt' der Menschengattung *insgesamt* zurückgeführt werden kann und nicht auf ein historisch Überholbares." Jürgen Habermas, *Technik und Wissenschaft als Ideologie*, Frankfurt 1978 [1968], p. 55.
44. "Erst wenn die Menschen zwanglos kommunizierten und jeder sich im anderen erkennen könnte, könnte womöglich die Menschengattung Natur als ein anderes Subjekt - nicht wie Idealismus es wollte, sie als ihr Anderes, sondern sich als das Andere dieses Subjekts - erkennen." *Ibid.*, p. 57.
45. Jürgen Habermas, *Dogmatismus, Vernunft und Entscheidung - Zur Theorie und Praxis in der wissenschaftlichen Zivilization*, in "Theorie und Praxis", Frankfurt 1978 [1963].
46. "Ich möchte vier Stufen der Rationalisierung unterscheiden, auf denen wir unsere technische Verfügungsgewalt qualitativ erweitern. Auf den beiden ersten Stufen verlangen die Technologien eine Ausscheidung der normativen Elementen aus dem Prozess Wissenschaftlicher Argumentation, auf den beiden folgenden Stufen schlägt aber diese Eliminierung um in eine Unterordnung der zunächst nur irrationalisierten Werte unter die technologischen Verfahren, die sich selbst als Wertesystem etablieren." *ibid.*, p. 323.

47. "Die in der arglosen Parteinahme für die formale unterschlagene substantielle Rationalität enthüllt in den antizipierten Begriff einer kybernetisch geregelten Selbstorganisation der Gesellschaft eine Verschwiegene Geschichtsphilosophie. Diese beruht auf der fragwürdige These, daß die Menschen in Maße der Verwendung von Sozialtechniken ihre Geschichte rational lenken, ja diese, im Maße der kybernetischen Steuerung noch des Einsatzes dieser Techniken, rational lenken lassen können." Ibid., p. 327.
48. "Die Irrationalität der Geschichte ist darin begründet, daß wir sie 'machen', ohne sie bisher mit Bewußtsein machen zu können. Eine Rationalisierung der Geschichte kann darum nicht durch eine erweiterte Kontrollgewalt hantierender Menschen, sondern nur durch eine höhere Reflexionsstufe, ein in der Emanzipation fortschreitendes Bewußtsein handelnder Menschen befördert werden." Ibid., p. 328.
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