PRIVACY AND TECHNOLOGY

by

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In the past decade or so there has been a marked worldwide increase in concern about issues of privacy. Ad hoc legislation has been introduced in many countries, particularly those with developed technologies, to give protection in some of the newer areas in which privacy is considered especially vulnerable to violation, such as in computer storage of personal information. At the same time some Governments and many interested groups have been examining the possibility of introducing legislation granting a general right of privacy in law to all citizens. A general right would be a particularly appropriate way of giving effect to the privacy aspects of the 1948 U.N. Declaration of Human Rights and to the Covenant and other instruments which developed from it.

There is a considerable difference of opinion about the advisability and feasibility of granting a general right of privacy in law. In the U.K., for example, the Younger Committee, which was set up in 1970 to examine such a possibility (among others), advised against it but there were minority reports in favour of a general right by two of its members, one of whom is now the Minister responsible for introducing legislation on privacy. In the U.S.A., the debate over a general right which has raged for several years has been given a further impetus by the disclosure of practices in the Nixon administration.

One of the underlying obstacles to achieving a consensus on which generally protective legislation can be based is the lack of a definition of privacy or of the right to privacy which is both useful and generally accepted. There are several difficulties with present definitions. Thus, one of the most widely quoted, Judge Cooley's "the right to be let alone", is regarded as too broad to be of any practical value from a legislative point of view. At the other end of the scale, the Younger Committee's approach to defining privacy by specifying particular areas which had been the subject of public complaint, lacks the comprehensive coverage and coherence that is necessary for consideration of a general right.

All the definitions proposed so far suffer from one or more of the following disadvantages:-

(a) An attempt to be precise or rigorous. Such attributes are impossible to achieve in defining as complex an aspect of the human situation as privacy. A more appropriate characteristic under these circumstances is the usefulness of the definition.

(b) An undue emphasis on the prevailing situation, based on an examination of "what is" rather than on "what might be" or "what ought to be". A definition of privacy should cover possible developments and not just current practices.

(c) A lack of neutrality. In this case there seems to be an assumption that privacy can only be violated and never just affected.

(d) Unhelpfulness in enabling privacy to be distinguished from other matters and in classifying different types of privacy issues. A definition should facilitate such processes.

It is suggested that new light can be shed on issues of privacy and a more satisfactory definition devised by considering the technological developments which have given rise to the present concern and which might be the cause of apprehension in the future. Technology is here regarded in a broad sense as deriving from or subject to influence by the results of scientific research in any field. In the context of privacy, developments from the physical and from the behavioural sciences are particularly appropriate. Although there are probably no completely new privacy issues - an eavesdropper with a notebook is no different in principle from a concealed microphone connected to a tape recorder - technological developments have in a short space of time greatly intensified age-old problems. By examining the fundamental processes associated with these intensifying developments it should be possible to discover some valuable unifying and classifying ideas about privacy in general. Indeed scientific and engineering concepts are likely to be of greater value than legal ideas in promoting understanding of the nature of privacy.

There is little doubt that the most significant factor causing the rapid growth in concern about privacy has been the availability and. use of surveillance and data storage devices which embody advanced electronic and optical techniques. The essential feature of these devices is their extremely high capability of acquiring, storing and processing information. For example, the application of acoustic, integrated circuit, infrared and laser technologies to the design of microphones and cameras specifically for surveillance purposes has enormously facilitated the gathering, of information under hitherto inconceivable circumstances.

Another major though less immediate source of anxiety in recent years is the development of certain kinds of influence techniques. For example, intrusive sales methods were identified by the Younger Committee as one of the areas of privacy where significant complaints by members of the public had been received. To give another example, the idea of subliminal advertising has been subject to considerable public condemnation on the grounds of violation of privacy. In these and other cases the aim is to obtain a desired behavioural response by injecting carefully selected information. Subliminal advertising is of particular interest in the context of technological developments in that its theoretical basis derives from knowledge of the psychology of perception while at the same time its implementation depends on engineering developments such as the electronic insertion of information into a radio or television signal.

On considering the effect of these developments from the point of view of the scientist or engineer, several ideas occur. Firstly, the use of information flow diagrams could greatly increase our understanding of privacy issues. Fig. l shows the basic elements. It depicts four distinct stages through which information passes, viz. extraction, storage, processing and injection. By and large, developments in the first the three of these stages derive from the physical sciences while behavioural technology is involved in the fourth. In practice, an information flow diagram representative of an actual situation would be much more complex than that shown in Fig. 1. For example, information may be extracted from several sources, processing in the form of collation may take place before storage, another kind of processing in the form of selection may take place after storage and injection may be by several routes in parallel. By drawing up an information flow diagram for each reported case in which it is claimed that privacy has been affected, a portfolio of diagrams could be established which it should be possible to classify and thence draw some useful. conclusions.

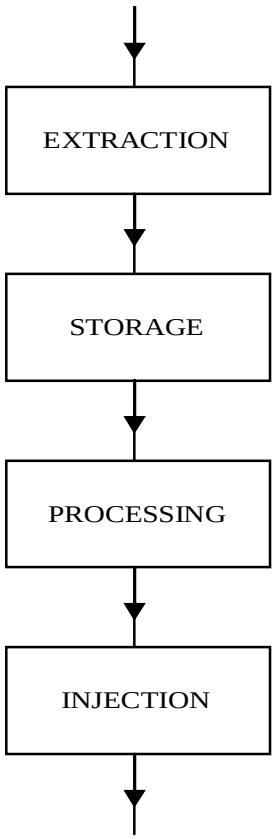
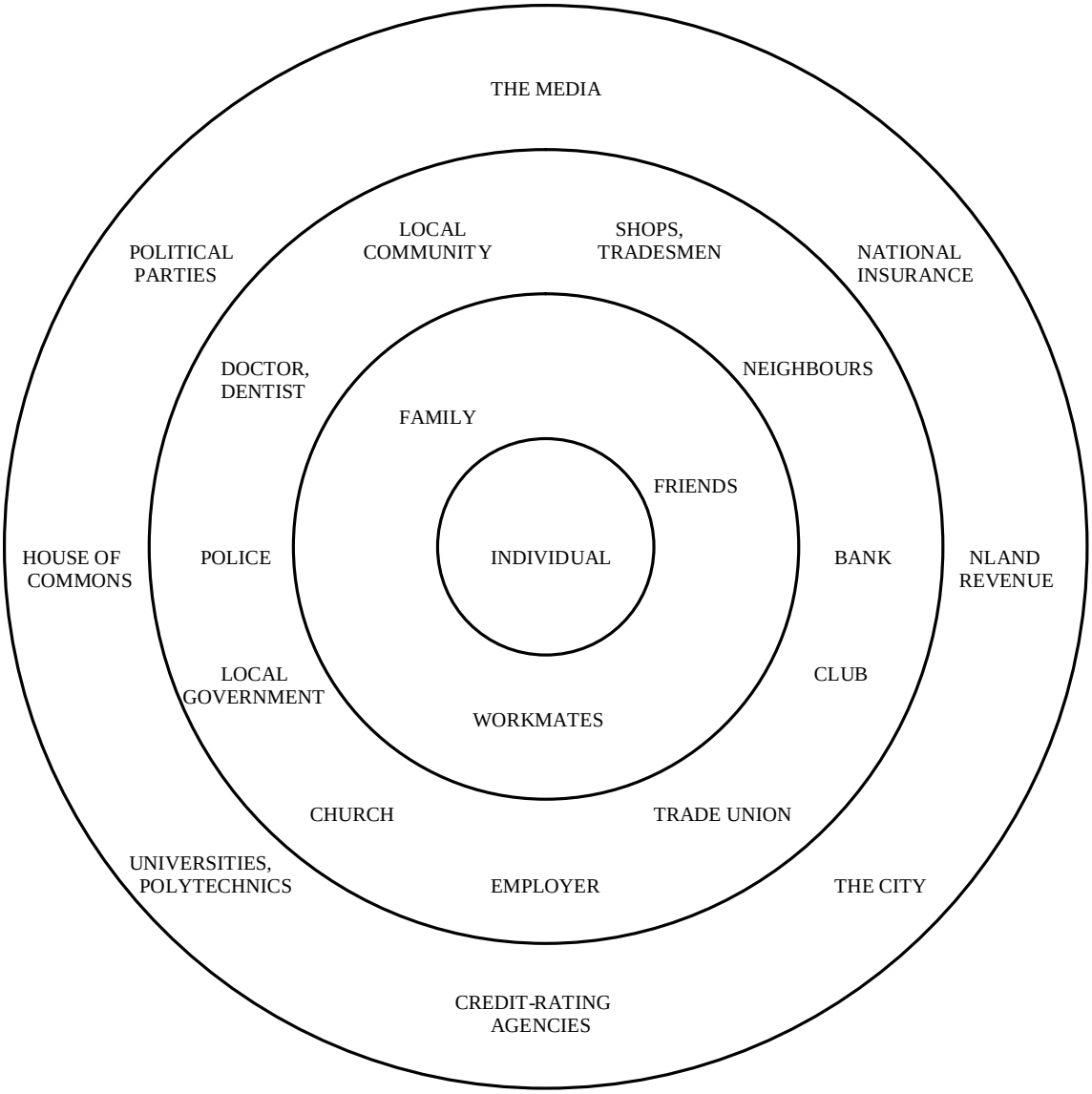


Fig. 1 : Flow Diagram

Next, it is helpful to consider the kind of environment which gives rise to issues of privacy as essentially social. Every individual may be visualised as moving in, around or in contact with many social groups - for example the family, the team at work, the club, the Inland Revenue office. The individual leaves information about himself, some in this social group and some in that. He also constantly takes in information from a variety of groups, some of which - for example the press or parliament - may be socially "distant" from him. Most if not all privacy issues arise if there is a flow of information in an individual's social environment which may affect his behaviour or his relationships with other people. The social environment approach enables a distinction to be made between privacy issues and others such as noise, pollution, nuisance etc. These latter, which may have social consequences but do not imply relationships between people, may be regarded as taking place within other kinds of environment, e.g. physical and chemical.

The social environment concept could be taken further by making a generalised social group 'map' and seeing how the various issues of privacy fit into it. An example of such a 'map' is shown in Figure 2. Information flow could be seen to be taking place between certain areas in one instance and in another case between other areas and so on. Again classification of the different 'routes' could greatly illuminate our understanding of privacy.

Fig. 2 : Example of a Social Group 'Map'



A third concept of value in the context of privacy is that of control. Examination of most of the legislation or proposed legislation to protect individual privacy shows that control by the individual is one of its most important aspects. Control takes many forms, ranging from authorising the transfer of information, through knowing that information is being collected and stored and also that information given for one purpose will not be used for another to being able to correct false information. The well founded conceptual model of a closed loop control system could be used to clarify our ideas about many aspects of privacy. Thus the reference, measurement, comparison and control action elements in such a system have their privacy counterparts as follows:-

Reference This is something to refer to, i.e. a standard or norm. In the context of privacy this can be seen as the individual's expectations or alternatively the recognised standards concerning any flow of information. These vary widely from situation to situation. Thus, in general, public figures have quite a different view of the publication of their personal details from the one held by most people. Applicants for jobs supplying personal details to potential employers accept that those details may be circulated within the organisation but would be very concerned if they found their way outside. Often, society- embodies standards in legislation as, for instance, in the conditions under which a Census is taken or in the scope and destination of Income Tax returns.

Measurement This can be thought of in terms of determining what is happening quantitatively or qualitatively. Obtaining knowledge that information is being extracted, stored, processed or injected is one form of measurement. Another is the examination of the information itself at any stage in the flow. The right of access to a credit rating record is an example of providing the facility of measurement to an individual.

Comparison There are many forms of the comparison of the results of measurement with the reference, ranging from checks by individuals of their own records to the determination by courts of the conformity or otherwise of events with the law which circumscribes those events.

Control Action This is modifying action aimed at bringing about correspondence between what has been measured and the reference. An example of this is the correction or deletion of data stored in personnel records or by credit rating agencies. The proposal that banks, in the absence of the general consent of a- client, should refer each particular request for creditworthiness information to the client for consent or refusal is an example of providing facilities for control action.

Improved definitions could be built on foundations such as these and lead to a more realistic examination of the possibility of granting a general right. Thus, the right to privacy could be defined as "the right of an individual to control the flow of information between himself and his social environment". The extensions described above of the basic concepts embodied in this definition would in themselves make it versatile and useful. It would also be possible to use some of the further extensions of these conceptual models which scientists and engineers have evolved. One particularly useful elaboration could be obtained by considering the behaviour of interacting control systems, where control by an external organisation is superimposed on the control by the individual. This would perhaps help to resolve the conflict between public and private interest which has so befogged discussion of many issues of privacy. Another possibility is the topological exploration of models of information flow in their social environment setting.

All these ideas could be used heuristically to explore the extremely complex issues of privacy and so lead to a better protection of that right for all individuals. Technology, which in one form has caused great concern about privacy, may in another form provide its own safeguard.

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