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# An Introduction to Privacy in Economics and Politics

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# AN INTRODUCTION TO PRIVACY IN ECONOMICS AND POLITICS

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Preliminary
Draft

# An Introduction to

# Privacy in Economics and Politics

by

George J. Stigler

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# An Introduction to
# Privacy in Economics and Politics

The enormous increase in interest in privacy in our society is evident in the public press and in the statute books. In some respects this interest in privacy is paradoxical, for the average citizen has more privacy -- more areas of his life in which his behavior is not known by his fellows -- than ever before. He lives in a large city, where no one is his keeper; in the small towns of former times privacy was won only by the cleverest people. He works in large organizations, and indeed he (or more likely, some self-appointed spokesman) laments his alienation. He can shake off most of his past simply by moving -- to the South, the West -- and no earlier generation except the immigrant waves before World War I was as mobile.

If then the privacy issue is a real issue, and not one of those contrived issues that march across the headlines for a time, it probably exists because of the vast growth of government. Governments (at all levels) are now collecting information of a quantity and a personal detail unknown in history. Consider: it would have been quite impossible for a public official to learn anything of the income of a citizen chosen at random without leaving Washington, D.C. in 1860. Today the files of Social Security, the IRS, the S.E.C., the microfilms of banking transactions, and other sources are potentially available to answer the question, to say nothing of the fact that perhaps one family in three or four receives payments directly

or indirectly from the federal government. In addition the government has become the major instrument by which the information-collecting and information-using practices of private citizens are controlled. Technology has enormously changed the mechanics of gathering and disseminating information, but it is politics and economics that direct the uses of the machinery. Three topics in this large subject are explored here: the nature of privacy in economic behavior; the economic effects of contemporary privacy policies; and the reasons for the appearance of privacy legislation.

## 1. What is Privacy?

Privacy as a subject of public policy refers to the possession and acquisition of knowledge about people and implicitly or explicitly also knowledge about associations. A highly miscellaneous variety of laws, which are still increasing in number, restrict possession or dissemination of information about individuals, or conversely compel its dissemination. Three major examples of such legislation will illustrate the variety of public policies in the privacy area:

> The Privacy Act of 1974 controls the collection and access to information about individuals by the Federal Government. Extensive rights are given to the concerned individual to examine and challenge the accuracy of such records.[1]

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[1] Most inquiries are by government employees. The President's Report (mandated by the Act) for 1976 said only the Justice Department had numerous requests (35,723) for access to files in that year. The Privacy Act of 1974: An Assessment (Appendix 4 of The Report of The Privacy Protection Study Commission), p. 32.

The Fair Credit Reporting Act (1970) gives the individual the right to examine and correct the credit rating given to him by a credit rating agency. Old information (more than 7 years in general; 14 years for bankruptcy) must be destroyed.

A number of fair employment practices laws prohibit the collection or use in employment of information on past arrests (and often convictions) as well as sex, race, or physical handicaps.

These are comparatively recent pieces of legislation and they may convey the quite misleading impression that public concern with information about individuals is a new concern. The history of taxation, and above all of income taxation, is replete with laws and regulations compelling personal disclosure (anti-privacy?) and often prohibiting public disclosure. The regulatory arms of government have been given steadily increasing powers, -- a modern example is the Bank Secrecy Act (1970) which compels reporting by banks to the Federal Government of various financial transactions. The S.E.C. has greatly enlarged the disclosure obligations of corporate officials and even of market advisory services. The Bureau of the Census and its predecessor bodies have been collecting information on individuals and businesses for almost two centuries, maintaining a relatively austere posture toward other governmental agencies with respect to access to information about individuals and enterprises. Much of the information the Census collects about individuals, however, is of no immediate or direct relevance to government operations:

the individual is compelled to reveal information useful to the research community.

"Privacy" connotes the restriction of the collection or use of information about a person or corporation: the information in question "belongs" to the individual. The primary peculiarity of information as a property right is commonly held to be its public goods character: if A gives (sells) information to B, there is usually no efficient way to insure that B does not disseminate the information to C (while still retaining possession of the information). The view popular among economists that the production of information is costly but its dissemination is almost free is supported by no known empirical study. The storage and retrieval of information, and its accurate dissemination, are often extremely expensive, and in a vast number of situations it is much cheaper to produce the information anew rather than to seek it out. (For some elaboration, see Appendix A.) There may be special difficulties in contriving or enforcing contracts for the ownership of knowledge, but at present they are assumed rather than ascertained.

Information about persons is also frequently alleged to be inaccurate or misused:

1. Information about individuals is often mistaken, and there is inadequate care in verifying and updating it.
2. Information derogatory to a person may be used excessively (vindictively?), as when a stale criminal record is erroneously treated as informative.
3. Information of improper sorts (e.g., race or sex) may be taken into account in decisions in which the legislature does not wish it to enter.

The first alleged problem -- insufficient accuracy of information -- presumably represents a market failure: it may be worth more to me (or to a merchant) to correct an error in (e.g.) my credit history than it would cost the credit-rating agency to make the correction. The second misuse (use of obsolete information) asserts that people are systematically mistaken in their calculation of the informative value of old information. The third misuse (use of "bad" information) presents a conflict between social (majority) and individual preferences or knowledge, often with the implication that it is empirically inefficient as well as legally wrong to take the designated characteristic into account.

The efficient use of a resource is normally achieved by assigning ownership of it to some particular person or enterprise, so that the maximizing of the returns from that resource (= optimum use) is the incentive to its proper allocation. The production of information might seem not to lend itself to this rule of ownership. An individual's credit record, for example, is the outcome of transactions with other people, and they may have invested as much or more resources than the individual in question in learning about him.

Yet if all credit history information, for example, were "owned" by the debtor, and there were not a special difficulty in enforcing this ownership because of the public good character of information, this inherent partnership in producing information would create no special problems. I would have an established credit record with the merchant with whom I customarily dealt, and be charged for credit according to the cost of dealing with me (including the cost of learning my payment habits).

Another merchant, to whom I denied access to my regular merchant's information, would charge for credit appropriately to his ignorance of my creditworthiness, so in general it would pay me to ask the regular merchant to supply the credit record to others. This would be true even if I were a poor credit risk: the new merchant would extend credit only at high charges to those who refused to reveal their previous records. In the long run -- in a sequence of many repetitive transactions, -- even a poor credit risk can do no better than to deal with informed creditors. (This is similar to the fact that poor students must sign waivers of their right to see letters of recommendation, under the Buckley law, in order not to label themselves as even more different from good students.) The economy of the multiple use of the same information should be accommodated no matter how the ownership of the information is assigned. The failure of contracts to emerge which specify that the creditor may not sell the consumer credit information is in the interest of debtors, for whom credit would otherwise be more expensive.[1]

The possibility of large error in a person's record (whether as debtor, employee, or whatever) always plays a prominent role in the hearings on privacy legislation -- instances are given of a clerical error which has led to demands for multiple payment of a debt or which plagued a person's search for employment. Error is of course unavoidable (also in the direction of failing to report recent transgressions) but there are substantial incentives of information agencies to keep the error in

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[1]Of course in the case of involuntary transactions, such as crime, an efficient market in the dissemination was in principle one function of the criminal law.

reasonable bounds: the rejection of a sound debtor or acceptance of a deadbeat are clearly costly to a merchant. If many of us had in our records errors whose removal was worth $X to each of us, and these errors were not removed by an information agency even though the cost of the removal would be less than $X, the market would again be failing to allow a mutually profitable transaction to take place. One may surmise that the number of such transactions would be too small to allow the review procedure to appear.

Again, when it is said that creditors or employers will retain and be influenced by episodes in a person's past so remote as to be uninformative, non-maximizing behavior is alleged: the creditor or employer does not know how to use information correctly. There is no known evidence on the matter; we will offer a different explanation for why the age of information has been controlled by recent statutes. The utilization of "improper" information (e.g. race) is parallel, and will also be discussed below.

Finally, let us return to the "rightful" ownership of knowledge about a person. If knowledge did not arise out of, and normally get used in, transactions, there would be little interest in the subject: indeed the common state of man is that others are not interested in listening to what he wishes to recount of himself. Only an idle curiosity could exist concerning information about a person that has no implications for his behavior in dealing with others.

Of course most people would like their public reputations to be high, and the conduct of people under observation is usually of a

somewhat different style than their private conduct. This may be viewed as the useful effect of social norms of proper behavior, and, to repeat, the public conduct of a person is more important to others than his private conduct. Private conduct is indeed of interest primarily because it has predictive value with respect to public conduct. This subject is elaborated in an appendix note (B) on reputation and privacy. It is argued there, what will be unnecessary to argue to economists, that in voluntary transactions there is no reason to interfere to protect one party provided the usual conditions of competition prevail: the efficient amount of information will be provided in transactions, given the tastes of the parties for knowledge and privacy.

We have been discussing real or alleged peculiarities of the ownership and use of information in the context of voluntary transactions between individuals. Much of the modern interest in privacy has arisen in a different context: the state demands large amounts of information about its members, amounts that grow with the rapid growth of public expenditures, regulations, and data-collecting programs. This information is usually provided under compulsion, and information supplied under one public program often provides important aid in the administration of other programs.

When the state enters into a voluntary relationship with an individual, the role of information will not differ from that in private transactions. Thus if the state makes highly intrusive investigations of its employees, it will pay for this burden through higher wage rates or lower quality employees. But if coercion enters the relationship, how do we proceed?

The discussion of coercive disclosure soon takes one of two turns. First, a doctrine of fairness or justice may be invoked. Thus it is said to be unfair to maintain in later life the criminal records of a teen-ager, or unfair to have an anti-nepotism rule in employment, or to have (or not to have) an affirmative action program in employment. Economists are, even in their own opinion, not shy to enter into the discussion of subjects that do not appear to be part of their professional knowledge, but they will generally admit that they have no comparative advantage in striking the balance of justice. Or second, the private possession of knowledge about oneself is postulated to be a fundamental value, and each incursion by the state must meet a test of essentiality for the performance of governmental functions. Since the legislature and the executive must determine both state functions and the behavior of the public information gatherers, the effective implication of this view is that any information the state collects should be collected.

This need not be so. It would usually be a perfectly operative rule to ask that the benefit of an information demand of the state be shown to be worth as much as it cost to be fulfilled. In principle this criterion is now imposed by the federal data-collecting agencies and by the OMB but one is entitled to hold reservations about its success, and for two reasons:

i. Usually a very small part of the cost of information gathering is borne by the collecting agency, and the remainder is borne by the individuals or enterprises being

canvassed. Their costs are often and probably usually given less weight.

ii. When the information is held to be essential for governmental action (e.g., taxation or regulation), there is virtually no control over what is called for. If the ICC asks a trucker for any information about his operations, there will be no review of the cost-benefit ratio of the information.

But there is something strange and singularly uninformative about talking of the state's demands for information for itself or of its interventions in the dealings among private parties with respect to disclosure. If it is fatuous to identify the state with "the people", it is equally obfuscatory to treat the state as an alien and inscrutable entity. The state enters into the information business for the same reason that it enters any other activity: because some group important to the government wishes it. It may well be that each of the immensely varied and numerous groups possessing governmental influence will be limited by general rules on information if these rules can be given specific content and wide political support: this is perhaps the most important social question about privacy. We shall seek to uncover some of the political forces behind the present legislation in section 3.

## 2. Economic Effects of Privacy Policies

The common element of all privacy statutes is that the amount of information about a person that is available to other persons is reduced. If information about a person is forbidden to others, substitute (and inferior) information sources will be utilized by parties dealing with that person. Procedures which ostensibly serve only to increase the accuracy or completeness of information will in general have the same effect: unless they employ previously unavailable technologies, the mandated procedures compel use of methods previously spurned as unnecessary (= more costly).

How much information should economic actors have about the goods in which they deal? Exhaustive information costs more than it is worth; complete ignorance would make rational conduct impossible. Hence in all economic and social life we resort to classification: it is enough to know to which class a good belongs.

The determinants of the optimal degree of classification of productive services has apparently received little attention from economists. In classifying a laborer or a machine, we are governed by the precision of the task to be performed -- obviously requiring more specialized (precisely defined) factors for more specialized tasks -- and the precision of the tasks (and products) in turn depend upon availability of specialized inputs (of materials as well as labor and capital). A superb statistician with ample technological assistance could carry the definition of even simple-appearing goods (say, corn flakes) to levels that we would find astonishing before encountering the limits of

accuracy of his instruments of measurement. Even if we cannot go much beyond the statement of the usual marginal conditions for the optimal classification of factors, however, we can be confident that this information plays an important role in the efficient conduct of economic life.

Privacy legislation in general increases the cost of achieving a given level of classification (by which we mean the number of classes and the accuracy with which they are filled). When distinguishing marks that would serve to divide a group of people into more homogeneous classes are suppressed, there are several consequences to be observed.

Whatever the distinguishing mark that is suppressed, some other methods of distinguishing members will exist. If the employment history of a worker is not known, his work can be more closely watched during a trial period. If the criminal tendencies of a worker are not known, the very frequency of previous job changes is a clue. If a debtor is wont to elude repayment of debt, a new debtor can be held to a period of low credit limits. But these methods of distinguishing individuals are less efficient (= more costly) than the method that has been suppressed, or they would have been relied upon before the suppression. Hence the classification will be less accurate: the classes will be wider (and hence the membership of the class more heterogeneous) and the errors of classification larger.[1]

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[1]The statistical procedure of assigning objects to various classes on the basis of observed characteristics is called discriminant analysis. Attributes of known and experienced workers constituting two or more classes are measured, and these measurements used to assign new workers among the classes. The classification system will in general contain fewer errors, the more complete the set of measurements employed in the discriminant analysis to classify the workers.

Resources will be used less efficiently when they are less finely and accurately classified. In extreme cases this would be obtrusively apparent: if the pilot of an airplane were chosen at random from passengers and crew, at least the first flight would be perilous. (Because people are able to learn, the second flight would have only crew: the passengers would have found a new designation, perhaps as baggage.) It is often said of a distinguishing characteristic that is to be suppressed that it is irrelevant to the proper use of resources, a direct or indirect expression of prejudice. (Thus continuity of employment is required, perhaps, to exclude women who alternate between household and market.) The validity of this argument has not been assessed in convincing fashion. One interesting test would be to see whether the distinguishing characteristic in question survives when the employer (or creditor, etc.) employs the characteristic when prejudice, if it exists at all, runs the other way. Do banks that are run by women ignore marital status of women in making loans? In principle a direct test of the relevance of any disputed information would be feasible: compare performance with the screening characteristic and measure its predictive value. (I predict that if the study supported the use of the characteristic in hiring or extending credit, the test would be widely impugned.)[1]

There is a redistribution of income within a class when classes are made less homogeneous. When it becomes more difficult to measure differences among individuals, their treatment becomes more uniform. Lower and higher risk credit are treated as average risk credit, and

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[1]See Michael Rothschild, "Social Effects of Employment Testing," August 1979; unpublished.

similarly with the traits of workers, students, and others. It has become a little easier to default on consumer credit, to embezzle funds, and to shirk duties. A redistribution of income takes place within the enlarged class.

Customers of the industry with less well classified inputs are affected through the increase in cost of the service or product. Let us look at this latter, allocational effects, more closely, using a simple example in which two types of laborer are employed by a firm. When workers are classified as superior (S) and inferior (I), they will be assigned to appropriate tasks and equipment, with marginal products $D_S$ and $D_I$ (see Figure 2.1). If the workers are mixed in one class, the marginal product curve will not become D' (the appropriate average of $D_S$ and $D_M$) but some lower curve $D_M$, because the gains of better matching of workers and tasks is lost. The loss of product (2xSRJT) will be larger, the greater the differences between the two classes of workers and the more equal they are in numbers.[1]

The reduced knowledge of the qualities of units of a factor of production thus reduces the productivity of that factor. Almost necessarily the total income to that factor will be reduced: if, as seems reasonable, capital and entrepreneurial abilities are highly versatile in use, the supply of cooperating factors will be elastic to the occupations in which privacy legislation is influential.

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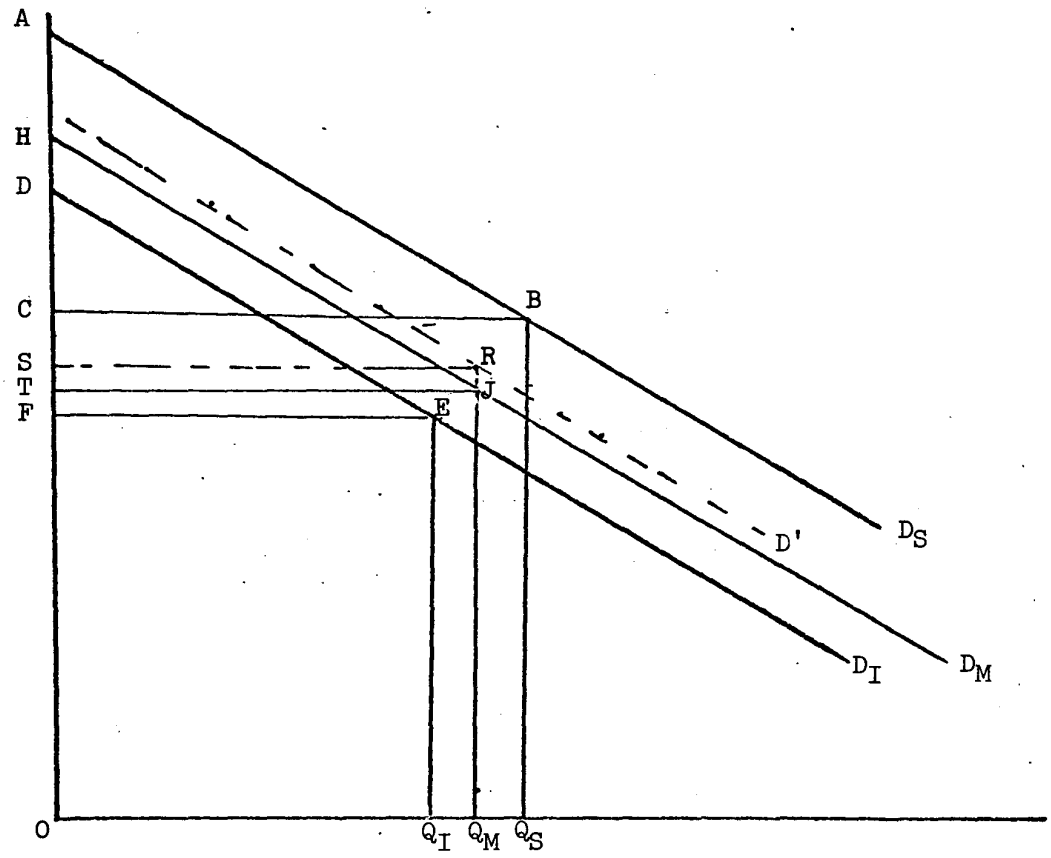
[1]Of course if the cooperating productive factors are ordinary capital goods, they will be utilized in such quantities that the marginal product of capital will be equal in both employments of labor. Hence the situation with two classes of labor in Figure 2.1 can be an equilibrium only if where this condition is met (i.e., either at the original position or at the new position).

Figure 2.1




Product with classified workers:

$$ABQ_S O + DEQ_I O$$

Product with mixed workers:

$$2 \times HJQ_M O$$

The reduction in the knowledge of and rewards for superior productivity will lead the owners of resources to invest less in improving their quality. Ignorance of ability by buyers is a tax upon the production of increases in that ability, and this traditional argument is applicable equally to human capacities and to capital goods. In the long run the ability as well as the incentive to invest in improving resources is reduced if the measurement of their quality becomes less accurate: in a school where all students get "pass" it becomes difficult for a student to measure his own knowledge.

The compulsion of disclosure by individuals has this familiar effect upon output: it leads to underinvestment in information. The SEC rules that compel the free disclosure by market analysts of private information accumulated on enterprises in effect separate the private and social marginal products of more accurate information, -- a contrived externality is created. Unusually high and low marginal rates of return are less quickly discovered because they are less profitable to discover and the signals to new capital investment given by high and low security prices are retarded and reduced. Thus the compulsory disclosure of valuable information has the same effect as a rule which renders it unattainable.

The decrease in information that results from privacy or disclosure laws has probably been of small quantitative importance to date, -- at least that is the testimony of employers and creditors with whom I have discussed recent policies. That is not the same thing, however, as saying that the information problem is an easy (cheap)

one to solve. Indeed perhaps no theme in current price theory has been more pervasive than the variety and complexity and importance of the influence on economic life of the information collecting and distributing systems in our economy.

If the public control of information flows expands substantially, we shall expect to see responses in economic organization calculated to offset this control. The following are a few tentative hypotheses on these responses:

(1) Formal information systems are essential to large scale organizations, whether public or private, and these organizations are especially susceptible to the enforcement of information regulatory policies, so such policies will reduce the comparative advantage of large scale organizations in dealings with outsiders.

(2) But conversely, regulation of the information flows <u>within</u> an enterprise is difficult because of the very intangibility of many forms of information flows.[1] This serves as a force, although probably a lesser one, working in the opposite direction.

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[1] One would watch with interest the workings of the proposed decree in the Eastmen Kodak-Berkey Photo case which prohibits the research arm of Eastman Kodak from revealing its new films, cameras and processes to the commercial branches of the firm before they are revealed to outside firms. This portion of the district court decree has been reversed by the Court of Appeals.

(3) Information control can take place at any level, but its potential scope is largest in dealing with unskilled labor, small borrowers, and the like.[1] Even if the grades of law school graduates have been suppressed, it is worth a considerable expenditure by a prospective employer to learn about the graduates, and obviously the same argument holds for large borrowers. (Apprenticeship systems are an obvious method of learning -- in both directions.) If the information policies have this differential effect, they will act as a differential tax on less skilled labor and small scale borrowers.

(4) The more costly the acquisition of knowledge, the more expensive it becomes to enter into transactions with new parties. We should expect less mobility of laborers, creditors, etc., and some increase in the dispersion of prices.

The extent to which developments such as these actually occur will depend upon how far, and in what directions, the privacy and disclosure movements extend. We make an exploratory study of that difficult question in the next section.

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[1] A political reason for this pattern is suggested in section 3 of this paper.

## 3. The Origins of Privacy Legislation

Before we begin the search for an explanation for the surge of privacy laws in the last ten or twelve years, we should notice that the legislative concern with privacy has been international. Thus the Swedish Data Act of 1973 requires registration and approval of every non-governmental computer-based file of information on individuals, and most governmental files are partially covered. Strict controls are put on even company files, dating bureaus, and exportation of data. The Data Inspection Board which administers this act also licenses operations under the Credit Information Act and the Debt Recovery Act. Similar though less far-reaching laws have been passed in Norway, Germany, Canada, France and Denmark and one is pending in the U.K. These laws differ from ours primarily in showing an extreme sensitivity to, and in the case of the Data Act only to, the information about individuals that is stored in computers. This international concern with privacy instructs us that we should not expect to explain this class of legislation by conditions peculiar to the United States.

Students of economic legislation have long been familiar with the legislation favorable to politically powerful groups in the community. The statute books are full of favors to veterans of the armed forces, homeowners, agricultural blocs, and, at various times, to majority or minority races and to men or to women. We explain such policies as responsive to the pressures from groups that are large in number or cohesive in action or otherwise able to make their influence effective in the legislature.

It is possible, of course, that the various laws reducing the availability of information originate in the endeavors of effective political groups to use political means to improve their market positions. We can test this hypothesis fairly directly for one law, which could be viewed as designed for the benefit of black and Spanish-speaking people -- namely the law that discourages financial institutions from making location an explicit basis for lending or insuring decisions (the anti-redlining law) by requiring reports on loans by location. On the self-interest view, the law could reflect the direct political power of a strong minority, rather than a general social desire that the merits of individuals be judged independently of race, sex, location, and other such characteristics. To test this alternative hypothesis we have regressed the votes of individual congressmen on this bill against several economic and social characteristics of their constituents:

$$\begin{aligned} \text{Vote} = \text{Constant} &+ .0273\ (\text{Per Capita Income}) \\ &(t = 5.9) \\ &+ .231\ (\text{Percent Black or Spanish speaking}) \\ &\ (t = 1.2) \\ &- .189\ (\text{Percent high school graduates}) \\ &\ (t = .49) \end{aligned}$$

and, replacing income by urbanization,

$$\begin{aligned} \text{Vote} = \text{Constant} &+ 1.051\ (\text{Percent Urban}) \\ &(t = 7.8) \\ &- .500\ (\text{Percent Black or Spanish speaking}) \\ &\ (t = 2.3) \\ &- .264\ (\text{Percent high school graduates}) \\ &\ (t = .8) \end{aligned}$$

On neither version do we find that congressmen from districts containing relatively many blacks and Spanish-speaking people voted systematically for the anti-redlining law, and the relationship is negative when income

is replaced by urbanization. There is no support here for the special-interest theory for this law.[1] Indeed we could interpret the negative relationship in the second equation as evidence that the ethnic groups themselves realize that on balance these laws are costly to them, and thus that our test of self-interest has weak support!

The alternative explanation we examine is that the policies in this area represent social altruism. For a variety of possible reasons, such as rising wealth or education, the members of a society wish to reduce the hardships borne by various individuals in the society. The number of people improperly denied credit, or misleadingly labelled with a former transgression, or erroneously convicted of an offense, or burdened by catastrophes beyond their control, are in each instance presumably relatively small, and they invite compassionate assistance. This assistance will never be free (indeed free assistance could hardly be deemed benevolent, for it would only be non-sadistic): if fewer honorable debtors are misclassified as deadbeats, fewer deadbeats will also be correctly classified, and this same argument holds in essence for all ameliorative schemes.

The explanation for altruistic behavior has only recently attracted the attention of theoretical economists. Income is well established as a determinant of altruistic contributions (with a prediction the income elasticities will exceed unity), and price (e.g., tax deductibility) plays its invariable role.[2] The brevity of this list

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[1] If the more appropriate but less easily interpreted probit analysis is used, the conclusions are not modified.

[2] See G.S. Becker, "A Theory of Social Interactions," Journal of Political Economy, Dec. 1974; and M. Feldstein and C. Clotfelter, "Tax incentives and charitable contributions in the United States", Journal of Public Economics, Jan-Feb. 1976.

of confidently known determinants of altruism is not reassuring. Our difficulties are increased by the need to explain why political (that is, coercive) measures are used to deal with privacy, or for that matter with such issues as aid to handicapped workers or foreign disaster assistance (to be discussed below).[1] Some partial explanation for the political treatment may be in the desire to force everyone to act non-discriminatingly or pro-discriminatingly toward citizens in depressed areas (anti-redlining) or handicapped persons. It is difficult to translate such explanations into testable hypotheses. For example, would we expect a resort to politically administered altruism if the income per family of a community differed little across families -- with the purpose of making families which are similarly situated contribute equally to the cost of a program -- or if family income differed greatly -- with the purpose of putting a larger proportion of the costs on the rich.[2]

Even when altruism is dominant, we expect special support or opposition from groups that are especially affected by a policy. The workers with unblemished records will bear a large share of the cost of suppressing information.[3] Until the precise beneficiaries and losers under any altrustic program are determined -- and no analysis

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[1]And, further, why national laws are used to deal with traditional local concerns such as child abuse and aid to policemen's widows?

[2]With few exceptions, one being privacy, the votes on the benevolent laws to be examined in this section are significantly negatively correlated with income inequality of the constituents.

[3]This type of argument would explain our earlier finding that Congressmen from districts with many black or Spanish-speaking constituents opposed the anti-redlining statute.

of this sort has ever been undertaken -- we are poorly equipped to sift out the self-interest elements of its support and opposition.

Nevertheless, we shall investigate the similarity in the support for various public policies, some of which are directed to privacy and others of which are more evidently altruistic in motive, in order to make at least a preliminary test of this explanation for privacy laws. We must omit a variety of laws (the Privacy Act of 1974, the Truth in Lending Act) because they were passed by essentially unanimous votes.

Consider the following policies, which we may label "privacy" since they are intended to control the possession or relevance of information:

1. A privacy proposal (the Erlenborn amendment to the Privacy Act of 1974) which would have exempted governmental agencies from disclosing sources of certain types of information in personnel files.
2. Laws against "red-lining" in insurance or mortgage industries assert the inequity of treating all the residents of an area as if they were homogeneous. If the practice was sensible, and a large majority of the residents of such areas are similar with respect to the attribute being regulated, then the effect of public policy, if successful, is to protect a small fraction of a

group from improper treatment. The 1975 federal law we analyse requires banks in metropolitan areas to disclose their loans by area.

We shall assume that these "economic" laws and privacy laws are responsive to the same general forces which have led to a variety of benevolent or altruistic social legislation, including -- as a quite varied sample -- the following policy actions undertaken in the same period.

3. The Parole Reorganization Act (1975) changes parole procedures to increase the protection of persons on or eligible for parole.
4. The Speedy Trials Act (1974) specifies time limits on the delays in bringing to trial people charged with criminal acts.
5. Physically handicapped persons are now provided special and costly facilities and various anti-discrimination protections. The affected number is unknown but even if it is on the order of five percent of the population, one would think that it is a widely dispersed, uncohesive class (the benefits to one, say the blind, bear little relationship to those of another class, say the disabled). The vote we analyze was on the Landgrebe amendment to the Vocational Rehabilitation Act of 1973, restricting funds to assist disabled persons.

6. Foreign disaster aid (PL 93-333), granting aid to victims of disasters in Pakistan, Nicaragua, Ethiopia, and the Sahelian nations of Africa (1974).
7. Prevention of child abuse (PL 93-247), making appropriations for several programs for prevention and treatment of child abuse (1974).
8. Animal welfare (PL 94-279), controlling treatment of animals in interstate commerce (1976).
9. Public safety officers' benefits (PL 94-430), whereby widows of policemen are given $50,000 if their husbands are killed in line of duty (1976).

Our measure of the similarity of support for these various policies is the correlation of the respective votes for these acts by the members of the House of Representatives. We report, as a measure of concordance in Table 3-1, Kendall's Tau B.

The general concordance of the voting practices of identical representatives is obvious in Table 3.1: every Kendall-Tau coefficient except one (handicapped workers v. animal welfare) is significant at conventional levels, and we have denoted by the letter "b" the six coefficients which could have arisen by chance with a probability greater than .001.

Nevertheless there are ambiguities in these similarities that are not easily resolved. Our selection of legislative acts is not random: in fact we have been forced to omit numerous statutes (Privacy, Freedom of Information) where the "aye" votes approached 100 percent.

Table 3.1

Correlation (Kendall's Tau) between Votes of Congressmen for Various Policies

| | (2)Red-lining | (3)Parole reorg-anization | (4)Speedy trials | (5)Handi-capped persons | (6)Foreign disaster aid | (7)Child abuse | (8)Animal welfare | (9)Public safety officers |
|---|---|---|---|---|---|---|---|---|
| (1)Privacy: Erlenborn amend. to Privacy Act of 1974*: τ | - | .449[a] | .404[a] | .383 | .528 | .376 | .492 | .181[a,b] | .180[a,b] |
| (2)Red-lining: Banking Regulation Act of 1975: τ | | - | .548 | .369[a] | .470[a] | .469[a] | .511[a] | .394 | .240 |
| (3)Parole Reorganization Act of 1975: τ | | | - | .379[a] | .482[a] | .468[a] | .434[a] | .236 | .242 |
| (4)Speedy Trials Act of 1974: τ | | | | - | .543 | .542 | .434 | .204[a,b] | .237[a] |
| (5)Handicapped persons: Landgrebe amend. to Vocat. Rehab. Act of 1973*: τ | | | | | - | .529 | .524 | .084[a,b] | .172[a,b] |
| (6)Foreign Disaster Aid Act of 1974: τ | | | | | | - | .502 | .261[a] | .227[a] |
| (7)Child Abuse Act of 1974: τ | | | | | | | - | .319[a] | .326[a] |
| (8)Animal Welfare Act of 1976: τ | | | | | | | | - | .155[b] |

Footnotes to Table 3.1

a - Comparison of 93rd. with 94th Congress; excludes districts that were redrawn between 93rd. and 94th. Congresses.

b - Not significant at .001 level.

* - "No" votes were relabeled as "yes" votes for anti-privacy or anti-benevolence amendments so that "yes" can be interpreted throughout to mean favoring benevolence or privacy.

Again, no one has sought to determine the precise class or constituency benefits of each of these actions to determine the extent to which altruism was a disguise for self-interest. (Thus, even the pensions for widows of policemen may have been concentrated in a few cities.) Moreover, the Kendall-Tau coefficient is sensitive to the difference in the margins with which different measure are approved, although this has only a moderate effect upon our results.[1]

Finally, and most crucially, the test of similarity of support should not be compared with Tau-values of zero: perhaps two bills drawn at random have similar degrees of association. To test this latter we have compared the privacy votes with the votes on "key votes" in the same Congress chosen by Congressional Quarterly.[2] The results may be summarized:

| | Average Tau Value, Votes in same Congress (disregarding sign) | |
|---|---|---|
| | Benevolent Legislation | Key Votes |
| Privacy (Erlenborn amend., 93rd. Congress) | .445 | .439 |
| Anti-redlining (94th. Congress) | .394 | .541 |

[1] If measure A is supported by 90% and B by 60%, the maximum value of Tau would be .408. One measure (animal welfare) had an unusually high level of support (81.6%) and its tau coefficients with the other variables are relatively low.

[2] Eighteen key votes in the 93rd. Congress and 27 in the 94th. We excluded votes that did not fall within the range of 1/3 to 1/2 for the losing side. The acts are reported in Congressional Quarterly, Congress and the Nation, Vol. IV, 1977. They include extension of wage and price controls, foreign aid, Alaskan pipeline, urban mass transit, minimum wages, etc.; some acts are at least remotely concerned with the benevolent element we are investigating.

These results on their face say that the association of the support for privacy laws with that for benevolent legislation is no better than the association of the former with legislation in general! That is too harsh a verdict: key votes will involve unusual party loyalty, and our practice of ignoring signs in averaging the key votes is mildly biased against our hypothesis. Still the hypothesis of an altruistic motive for privacy legislation must be labelled "unproved".

Finally, we report in Table 3.2 the votes of congressmen on the class of benevolent legislation in relation to the income, education, and urbanization of their constituents:

(1) The support for these laws is always positively correlated with income, but it is almost without exception vastly better correlated with urbanization.[1] Urbanization clearly dominates income in the equations in Table 3-2. (The correlation between per capita income and urbanization across congressional districts is .669.)

(2) The educational level of the population consistently is <u>negatively</u> related to the support for these laws, although the relationship is seldom significant.

If we accept this last finding despite its uncertain statistical base, we could interpret it as showing that the better educated constituencies

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[1]The income elasticities, calculated from ordinary least square regressions on income alone (or with education and ethnic variables) is seldom so large as unity in these area cross-sectional regressions.

Table 3.2

Votes of Congressmen for Selected Measures;
Regressions on Selected Variables*

| | Privacy | Red-lining | Parole reorg-anization | Speedy trials | Handi-capped persons | Foreign disaster aid | Child abuse | Animal Welfare | Public safety officers |
|---|---|---|---|---|---|---|---|---|---|
| Variables: | | | | | | | | | |
| Constant | .617 | -.189 | .114 | .673 | .446 | .386 | .161 | .268 | .631 |
| Income per capita | .00355 (t=0.68) | .0124 (t=2.28) | .00762 (t=1.35) | .00607 (t=1.12) | .000588 (t=0.03) | .00450 (t=0.90) | .00672 (t=1.32) | .00805 (t=1.67) | .00324 (t=0.52) |
| Percent Urban | .822 (t=6.13) | .700 (t=4.99) | .489 (t=3.31) | .219 (t=1.59) | .664 (t=4.62) | .468 (t=3.72) | .646 (t=5.07) | .245 (t=1.98) | .380 (t=2.37) |
| Percent high school graduates | -1.626 (t=5.01) | -.210 (t=0.63) | -.119 (t=0.34) | -.498 (t=1.53) | -.735 (t=2.12) | -.343 (t=1.11) | -.404 (t=1.31) | .245 (t=0.85) | -.565 (t=1.42) |
| $R^2$ | .163 | .204 | .096 | .026 | .082 | .063 | .117 | .098 | .042 |
| N | 368 | 323 | 334 | 290 | 378 | 407 | 405 | 309 | 245 |
| Percent supporting | 48.1% | 57.0% | 48.3% | 76.2% | 56.4% | 68.6% | 63.2% | 81.6% | 71.0% |

* Ordinary least squares regression coefficients multiplied by 100.

realize that many of these laws are inefficient or conceivably perverse in achieving their announced goals.

The support for the privacy laws remains opaque: neither simple (minded?) self-interest nor altruism finds ready support. We have shown that some things are not true, a conclusion which would be more gratifying if most things were true.

## Appendix Note A

### Production vs. Dissemination of Knowledge

Economists have come to view the production of knowledge as an expensive (resource-consuming) activity but the dissemination of this knowledge as virtually free. Kenneth Arrow has been an influential exponent of this view:

> "... any information obtained, say a new method of production, should, from the welfare point of view, be available free of charge (apart from the cost of transmitting information). This insures optimal utilization of the information but of course provides no incentive for investment in research."[1]

The proviso that dissemination costs be small is not felt to be an important restriction: "The cost of transmitting a given body of information is frequently very low."[2]

The prototype of the disharmony is the discovery of a mathematical theorem. It may be the product of a most laborious undertaking by able scholars; but once discovered, it is available at negligible cost to everyone and no amount of use of the theorem reduces its availability to others. But as Arthur de Vany has urged in discussion, the fact is that dissemination of such knowledge is often enormously more expensive than its production. Consider the highly useful solution of the quadratic equation ($x = (-b \pm \sqrt{b^2-4ac}) / 2a$). It was discovered

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[1] "Economic Welfare and the Allocation of Resources for Invention," in The Rate and Direction of Inventive Activity: Economic and Social Factors (National Bureau of Economic Research, 1962), pp. 616-17.

[2] Ibid., p. 614.

by numerous mathematicians, probably at small cost.[1] To make it available to our (American) society, we invest perhaps a day of every high school student's life in instructing them in its use. The social costs of non-recovery of the original discovery are contemptibly negligible compared to any inefficiencies in the dissemination of the theorem.

The fundamental question is rather different: are the production and dissemination of information separable? If I apply to a retail merchant for credit, he will buy (for two or three dollars) my record from a credit-reporting agency, and use this report along with other information solicited from me in determining whether to grant credit. Thereafter my payment record will be the fundamental determinant of my credit worthiness. The sequence of charges and payments will be simultaneously (i) a series of tests of my credit worthiness, -- verification of previous knowledge -- and (ii) the basis for the changes in my future borrowing limits, -- provision of more current information about me. The merchant's credit department would be hard put to allocate the monthly cost of billing and collecting between the production and the utilization of information on my credit status.

What is true of commercial transactions is largely true also of scholarly work. Any scholar who believes that he can pick up the theories of a field (perhaps from a handbook) and apply them usefully reveals a romantic belief. Only if one is an active worker in a subject will he even know the appropriate techniques to use on a new problem, or how to use them. If the technical problem is fairly

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[1] See M. Kline, Mathematical Thought from Ancient to Modern Times (N.Y., Oxford University Press, 1972), pp. 8-9, 19, 76-77, 186-87, 192-93.

special (e.g., will a monopolist practicing price discrimination have a larger output than a single price monopolist, if the two prices can differ only by K?), it is almost invariably much easier to solve the problem anew than it is to search for a solution in the literature.

The distinction between producing and using information is a hypothesis. It has not been shown to possess a large capacity to generate interesting hypotheses about the workings of markets for information. In this undeveloped state it is a poor basis for deducing welfare conclusions.

## Appendix Note B

### Reputation and Privacy

Sir Robert Chiltern. Gertrude, what you tell me may be true, but it happened many years ago. It is best forgotten! Mrs. Cheveley may have changed since then. No one should be judged entirely by his past.

Lady Chiltern (sadly). One's past is what one is. It is the only way by which people should be judged.

Sir Robert Chiltern. That is a hard saying, Gertrude!

Lady Chiltern. It is a true saying, Robert.

(Oscar Wilde, An Ideal Husband, Act I)

A person must deal with other persons all his life: parents, spouse, children, customers, suppliers, policemen, teachers. An enormous number of these dealings are repetitive, some almost infinitely repetitive -- the repetition often being with the same person, but often also being of the same action but with changing persons.

Sensible people enter dealings with others with caution and sometimes apprehension: after all, a small fraction of those people are dishonest, a larger fraction incompetent, perhaps a still larger fraction unreliable. To learn the character of the person one is dealing with is essential in important transactions and desirable even in small transactions: waste and frustration are avoidable with knowledge.

The converse of this desire for knowledge is the desire for reputation: to be known as honest, competent, responsible, perhaps even superlative, is a valuable asset in all reputable dealings (and of real but lesser value to scoundrels!). This reputation is property we begin to construct at birth and conserve or exploit until death. We can fashion some elements of reputation with what economists now call signals -- correct speech, fashionable clothing, a good address -- although each of these signals is more than that: one cannot acquire any of these signals without intelligent expenditure of time and resources. Ultimately our reputation rests squarely on our past conduct: Lady Chiltern is profoundly right.

Of course we have as many reputations as there are characteristics which are important in our dealings with others. One reputation

may be as a student, another as a salesman, another as a sportsman or politician, and others could be as spouse, debtor, and automobile driver. They need not be closely correlated: vagabonds, a perceptive friend once pointed out to me, are more charming and better company than earnest toilers, -- they have to be!

In fashioning our reputations no one of us is steadfast in his adherence to the behavior appropriate to the reputation: we often fall short, or exceed, the appropriate standard of behavior. Of course most of us do not advertise, and even conceal, deficient behavior: we want a reputation above that to which our average behavior (and its variance) entitles us. The people with whom we deal are of course aware of this tendency, and try to adjust for it -- and in turn seek a favorably censored reputation of their own. But we expect that on average each person learns to make tolerably accurate estimates of the typical behavior of those with whom he deals.

The usual rules of the economics of information apply to the investigation of other parties: more information will be demanded when the transactions individually involve larger values and when they are repetitive rather than unique. More information will be acquired if its cost is small, -- for example, bank lenders acquired more information as a result of the reports of corporations to the SEC.

The adaptation of organizations to the problem of information can take many forms. Partnerships of relatives have the advantage that each partner can readily observe the details of the personal life of the other partners, and hence be well-informed on life styles (a

clue to embezzlement, diligence of work, etc.). Similarly the form of transaction will differ with the amount of information possessed: a seller has no personal interest in a buyer who pays cash, but substantial informational demands are made of a buyer on credit.

Except in two areas to be discussed later, it is difficult to see how any problems of general social concern are raised by the voluntary dealings of individuals. If a prospective employee (or employer) or prospective debtor (or creditor) is asked to provide information, the request will normally involve only information necessary to protect the interests of the bargaining partner. There is a clear inducement to restrict these demands for information to the minimum necessary to protect the (say) employer's interests. Excessive informational demands are expensive to process and reduce the willingness of the prospective employee to comply, with no gain in the better selection of employees. This is not to deny that on occasion an employer has exercised a paternalistic interest in employees quite unrelated to their performance at work, but this practice has a cost which is in effect a consumption expenditure. (The analogy to Becker's "taste for discrimination" is clear.)

There is no specific and unambiguous set of facts which are necessary and sufficient to judge the prospective performance of a party to a transaction. The relevant facts will vary greatly with the type of contract: of a hod carrier I require only strength and regularity; of a diplomatic courier I require intelligence and integrity. Some workers (or debtors or applicants for insurance, etc.) will not be

willing to reveal information some prospective employers (or other parties) demand. The result will be a reshuffling of contracts until suitable trading partners are found.

Those employees who refuse to supply information demanded by the generality of employers, for example, will have to accept positions with lesser demands for attested training or skill or desired personal traits. The reduction in earnings is strictly a price paid for the preservation of a measure of privacy larger than the market normally allows. There is no impropriety in a party withholding information -- whether out of quixotic motives or a desire to conceal a disreputable past -- providing the concealment is not accomplished by falsehoods, and society should have no interest in reducing the cost to the individual of this privacy. In actual fact society is displaying a steadily increasing interest in this question, as we have seen.

There are two areas in which privacy is a serious issue in relationships between private parties, blackmail and espionage, and we deal with them in turn.

Blackmail

The extortion of payments from a person by threatening to disclose discreditable facts concerning him is illegal in most western countries. The most simple explanation for this public policy would be that the investment of resources in discovering such discreditable facts served no useful social purpose, but merely redistributed income.

This explanation is of course incomplete: the threat of future blackmail should serve to reduce the frequency with which discreditable acts were performed. On this ground, blackmail would constitute a private enforcement of the community's moral code, -- against the well-to-do. The deterrence effect of blackmail would often be weak -- for example, against young people who later experienced unpredictable success -- but particularly in the conduct of offices of trust it could be a powerful deterrent of wrong-doing.[1]

Adam Smith would hail this service of blackmail as a most fortuitously desirable fact, for it is precisely the well-to-do that need to be deterred from sin:

> In every civilized society, in every society where the distinction of ranks has once been completely established, there have been always two different schemes or systems of morality current at the same time; of which the one may be called the strict or austere; the other the liberal, or, if you will, the loose system. The former is generally admired and revered by the common people: the latter is commonly more esteemed and adopted by what are called people of fashion. The degree of disapprobation with which we ought to mark the vices of levity, the vices which are apt to arise from great prosperity, and from the excess of gaiety and good humour, seems to constitute the principal distinction between those two opposite schemes or systems. In the liberal or loose system, luxury, wanton and even disorderly mirth, the pursuit of pleasure to some degree of intemperance, the breach of chastity, at least in one of the two sexes, &c. provided they are not accompanied with gross indecency, and do not lead to falsehood or injustice, are generally treated with a good deal of indulgence, and are easily either excused or pardoned altogether. In the austere system, on the contrary, those excesses are regarded with the utmost abhorrence and detestation. The vices of levity are always ruinous to the common people, and a single week's

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[1] If the blackmailer collected information on unsavory behavior that the society did not wish to learn of, there would be no one to heed it if blackmail were not paid -- are laws against blackmail designed to protect us from our own base tastes?

> thoughtlessness and dissipation is often sufficient to undo a poor workman for ever, and to drive him

simply a pathological extreme in the area of protection and acquisition of business knowledge. Almost every enterprise possesses some knowledge that would be useful to others: a new market for the product; a reservation price below the presently quoted price; a pro-

by only one or a few firms are more easily acquired by direct investigation of the subject than by espionage, but some pieces of information are most easily acquired from the firm by purchase or theft (espionage).

The line between the acquisition of special training by an employee and his appropriation of trade secrets is a delicate one. The English have not yet been able to draft a law which outlaws industrial espionage because of the ambiguities of borderline cases.

The main economic problem of espionage is: to what extent is secrecy a necessary supplement of a patent system in order to elicit the optimum rate of discovery and use of new knowledge? We shall not discuss industrial secrecy.