

# BENEFITS AND COSTS OF CONFIDENTIAL INFORMATION: AN APPLICATION OF SYSTEMS THEORY AND CATASTROPHE THEORY<sup>1</sup>

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This article concerns confidentiality of information in social systems at the levels of the group, organization, society, and supranational system. It analyses the benefits and costs of confidentiality in terms of actual and potential Pareto optimality. A systems perspective based on the ecological concepts of successional and climax communities is used to analyze both the power and limit of confidential information as a single purpose instrument amid conflicting objectives. A cusp catastrophe is employed to model discontinuity in confidential behavior, which tends to reduce the quality and availability of confidential information and, therefore, increase the cost of obtaining it when confidentiality is violated. Finally, an approach to a selective protection of confidentiality is suggested which achieves both economic efficiency and distributional justice by varying the assignments of rights and burden of proof to different parties depending on their relative gains/losses and relative strength.

**KEY WORDS:** social systems, group, organization, society, supranational system, information flows, confidentiality, Pareto optimality, single purpose instruments, catastrophic discontinuity, system slacks.

**T**HIS ARTICLE concerns the confidentiality of information in social systems at the levels of the group, organization, society, and supranational system. Any information can be regarded as confidential if its leakage to unintended parties is perceived to be harmful to the confider. This confidentiality is governed by an explicit or implicit trust between the confider and the confidee that such information would not be disclosed to any antagonistic parties without the explicit consent of the confider. Very often this relation of trust is bound by ethics rather than by law.

For my present purpose, I shall define confiding broadly to include the mere commitment of an act in the presence of sympathetic parties. I shall be concerned only with information on confidential behavior. That is, behavior that, if revealed to antagonistic parties, is subject to negative sanctions or could lead to some loss of autonomy and competitive advantage. I shall not be

concerned with technical and scientific information which could be copyrighted, patented, and embodied in a physical product. Nor shall I be concerned directly with information provided by informants who obtain it in a nonconfidential or antagonistic relationship.

Protection of confidentiality involves the denial of unintended parties' right to force the disclosure of information generated in a confidential relationship. Confidentiality, when it is protected, encourages trust, autonomy, behavioral stability, interest articulation, and exchanges of help which would not otherwise exist or not exist to the same extent. And if the confidential relationship produces little or no negative external effects, protection of confidentiality will increase total welfare.

Protection of confidentiality is controversial only when there are significant negative external effects. These may be a result of antisocial behavior covered up by the confidential relationship, wrong decisions adversely affecting the welfare of parties outside the relationship because the needed information is kept confidential, etc. Then the potential gains have to be balanced against the potential losses. The question is

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not so much whether confidentiality should or should not be protected as when, how, and how much confidentiality should be protected. To do this balancing act properly, a better understanding of the benefits and costs of confidentiality and better criteria for a selective protection of confidentiality which ensures both economic efficiency and distributional justice are needed.

This paper attempts to satisfy these needs. The benefits and costs of confidentiality will be analyzed in terms of actual and potential Pareto optimality. A systems perspective based on the ecological concepts of successional community and climax community will be used to analyze both the power and the limit of confidential information. Catastrophe theory will be employed to model the discontinuity of confidential behavior. Finally, an approach to a selective protection of confidentiality will be suggested which achieves both economic efficiency and distributional justice by varying the assignment of rights and burden of proof to different parties depending on their relative gains/losses and relative strength.

#### EXTERNAL EFFECTS OF CONFIDENTIALITY AND PARETO OPTIMALITY

We can distinguish four parties whose interests are differentially affected by a confidential relationship. The first party is the confider. The second party is the confidee. These two parties can be called the intended parties with respect to the confidential information generated in the relationship. The third party consists of people who are outside the confidential relationship but whose interests are directly affected by it. The fourth party consists of people who are outside of the relationship but whose interests are only indirectly affected by it. The third and fourth parties can be called the unintended parties with respect to the confidential information generated in the relationship. Their interests are external to the intended parties. And effects on their interests generated by the confidential relationship between the intended parties can be called external effects. Together, these four parties occupy

the entire universe known as society.

The first party confides to the second party because the latter is sympathetic to its interests and can help to achieve its desired objectives. The first party, however, wants the revealed information to be kept confidential because it is afraid that an unsympathetic third party may harm its interests if the information is disclosed. The third party may or may not be sympathetic to the interest of the intended parties depending on which way and how much their interests are affected. For a given confidential information, the individual interests of these three parties are greatly affected whether the information is kept confidential or disclosed. On the other hand, the individual members' interests of the fourth party are only slightly affected, although their combined interests may sometimes exceed those of the first three parties combined. Unlike the first three parties, members of the fourth party are unlikely to take an active part in deciding the fate of the information, although they may be persuaded by the first three parties to support their respective interests.

The intended parties and the third party are primarily interested in maximizing their respective gains and minimizing their respective losses. The intended parties would want to keep information confidential if they can gain from confidentiality, even though the gain may be much smaller than the loss suffered by the third party from such an arrangement. Conversely, the third party would want to expose confidential information if they can gain from exposure, even though the gain may again be much smaller than the loss suffered by the intended parties from such an arrangement.

From society's viewpoint, confidentiality should never be violated unless total gains from exposure (i.e., gains to the four parties combined) greatly exceed total losses from exposure (i.e., losses to the four parties combined). Otherwise, total welfare to society would be reduced. In other words, society's policy toward confidentiality should be based on Pareto optimality. If one party's gain from confidentiality does not decrease other parties' welfare, such optimality always is attained. If one party's gain decreases other parties' welfare, but

the gain greatly exceeds the loss in welfare, potential Pareto optimality results. The gain may be enough to compensate the loss adequately so that no party needs to suffer if the compensation is actually paid. In both cases, total welfare increases (see the section on selective protection of confidentiality).

#### BENEFITS OF CONFIDENTIALITY

Protection of confidentiality involves the denial of unintended parties' right to force the disclosure of information generated within a confidential relationship. To facilitate the discussion of benefits arising from the protection of confidentiality, I shall assume in this section that the relationship concerned represents legitimate interests with little or no negative external effects. These benefits include the following.

#### Trust

Protection of confidentiality boils down to protecting the trust between the confider and the confidee. Violation of confidentiality is therefore a violation of the trust relationship. This relationship implies that the confider's behavior will not be judged harshly. In this supportive environment, the confider is free to seek help, to experiment, and to grow. The interest of the confidee is identified with the interest of the confider. And the confidee is interested in promoting the interest of the confider.

Confidential relationships can be formal such as that existing between the doctor and patient, lawyer and client, priest and penitent, etc., or informal such as between friends, relatives, etc. The degree of explicitness of the relationship varies with the degree of trust. If the degree of trust is perceived to be tenuous, some kind of contractual promise is usually required before the process of confiding occurs.

A contract always implies some degree of distrust. And the more specific the contractual provisions, the greater the degree of distrust is implied. Ultimately, fulfillment of a contract depends on an additional element of trust which cannot be specified. And no matter how specific the contractual provisions are, they cannot be enforced without great costs. It is hoped that this

additional element of trust may make such enforcement costs unnecessary.

It is therefore not difficult to perceive that modern democratic societies whose operations depend so much on contractual relationships may not survive if this element of trust is undermined. And nothing undermines it quicker than the violation of confidentiality.

#### Confidential information as single-purpose instruments

Protection of confidentiality necessitates the separate generation of information for each different purpose. This, at first sight, may appear to be unnecessarily wasteful. But this arrangement is no different from the creation of specialized machines to perform special production operations. In each case, the separate instruments are more powerful because they serve only single objectives. An equality between the number of objectives and the number of instruments is also a necessary condition for the objectives to be compatible (Tinbergen, 1970). There are numerous examples to show that if one set of information is used to serve two genuinely different purposes, these two purposes must necessarily conflict.

Take the example of faculty evaluation data. Faculty evaluation can be used to help the instructor to improve teaching or to help the administration in its personnel decisions. If it is to be used for the former purpose, then the information would be useful only if the identity of the students who participate in the evaluation is protected and the anonymous evaluation results are not disclosed to the administration who may possibly use them to penalize the teacher. Protecting the identity of the evaluating students should not be construed to mean that the information about the teacher's performance on which the evaluation is based was obtained in an antagonistic or nonconfidential relationship. In fact, the evaluation results should be regarded as a feedback to the confider (the teacher) from the confidee (the students). As such, evaluation data are confidential information and should not be disclosed to any unintended parties without the

teacher's explicit consent. Protecting the identity of the students is simply a device to ensure a truthful feedback.

On the other hand, if faculty evaluation is to be used to help the administration in its personnel decisions, the students are essentially being asked to inform on their teacher. In other words, they are asked to violate the confidential relationship between the teacher (the confider) and the student (the confidee). This in effect turns a confidential or at least nonantagonistic relationship between the teacher and the students into an antagonistic or at least nonconfidential one. A natural defensive strategy of the teacher is not to be a good teacher, but to be a popular teacher. Favorable evaluation results may win a promotion or a big salary increase for the teacher, but would certainly not help him to be a good teacher. Instead, it helps him to be a popular teacher. Thus, if only one evaluation can be done to serve two conflicting objectives, neither of them would be well served.

If the information gatherer thinks that the information source may have provided more useful information for his purpose to another information gatherer for another purpose, but covering more or less the same topics, this simply means that there is a tradeoff between the two different purposes. This tradeoff cannot be eliminated or improved no matter how low the instrumental cost of violating confidentiality could be. (See the section on catastrophic discontinuity.) Therefore, unless the information collector is willing to accept the consequences of lower information quality for other purposes, he should not resort to the expediency of violating confidentiality for one particular purpose. But since this is often an external cost to the violator, he is quite prepared to violate confidentiality unless forbidden to do so by law.

Once this tradeoff is recognized and accepted, we find that the quality of information gathered for nonantagonistic purposes actually improves if confidentiality is guaranteed. In fact, this is exactly what the U.S. Census Bureau does when it conducts its population censuses. Since some of the information it requires is also of interest to

other government agencies which may have antagonistic interests to the census respondents, such as the IRS and the Immigration Service, the accuracy of these information obtained in the population census would be greatly reduced if their confidentiality is not guaranteed.

### Catastrophic discontinuity

In our earlier discussion of confidential information as a single-purpose instrument, we mentioned the possibility of lower information quality if one set of information is required to serve two or more conflicting objectives. This lower information quality was attributed to an unproductive modification of behavior to satisfy two conflicting objectives. But it is also possible that leakage to parties with antagonistic interests may lead to reduced availability due to a generally reduced willingness to provide information for fear of possible exposure. We will explore this possibility with the help of a model from catastrophe theory.

In a democratic society, while it may be legally required and practically necessary to give some information to some authorities, there is information which is often given on the understanding (explicit or implicit) that it will not be used to harm the information source. Suppose the individual's willingness to confide is influenced by a desire to maximize his expected net benefit:

$$E(B) = E(G) - E(L),$$

where  $E(B)$  is expected net benefit,  $E(G)$  is expected gain, and  $E(L)$  is expected loss.  $E(G)$  and  $E(L)$  can be formulated as follows:

$$\begin{aligned} E(G) &= G(1 - P) \\ E(L) &= L(P), \end{aligned}$$

where  $G$  is gain from confidentiality,  $L$  is loss from leakage, and  $P$  is the likelihood of leakage. An individual's behavior regarding confidential information can be modeled by the following hypotheses:

*Hypothesis 1.* When the gain from confidentiality ( $G$ ) is low, the willingness to confide ( $X$ ) decreases smoothly as the likelihood of leakage ( $P$ ) increases (Fig. 1A).

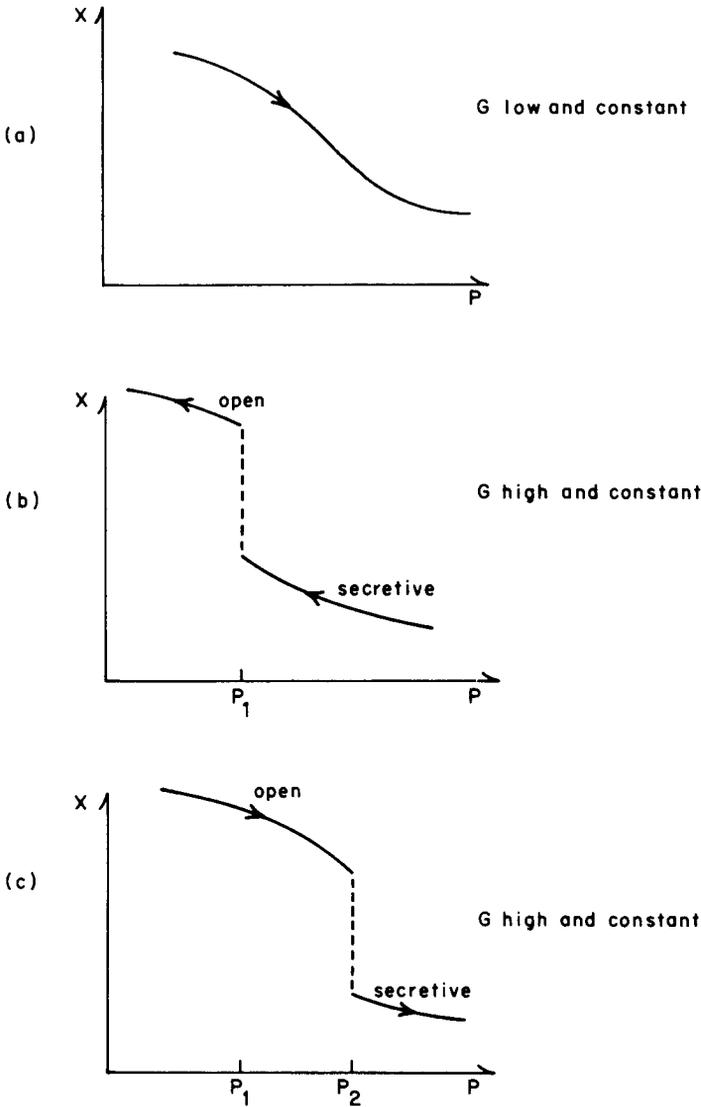


Figure 1 Leakage-willingness graphs at various levels of gain from confidentiality

$X$  willingness to confide  
 $G$  gain from confidentiality  
 $P$  likelihood of leakage

*Hypothesis 2.* When the prior willingness to confide is low and the gain from confidentiality is high, a decrease in the likelihood of leakage will not lead to a marked increase in the willingness to confide until a (threshold) point is reached where a small further decrease in the likelihood of leakage

results in a significant increase in the willingness to confide (Fig. 1B).

*Hypothesis 3.* When the prior willingness to confide is high and the gain from confidentiality is high, an increase in the likelihood of leakage will not lead to a marked decrease in the willingness to confide until

a (threshold) point is reached where a small further increase in the likelihood of leakage results in a significant decrease in the willingness to confide (Fig. 1C).

*Hypothesis 4.* The higher the gain from confidentiality, the larger the delays and changes in the willingness to confide with changes in the likelihood of leakage.

If we superimpose Fig. 1B on Fig. 1C and join the overlapping upper and lower curves smoothly by a dotted line into a single fold, then Fig. 1A, the superimposed Figs. 1B and 1C with the dotted fold plus another similar figure with a bigger fold (following hypothesis 4) would represent the cross-sections of the cusp catastrophe in Fig. 2 (Isnard & Zeeman, 1976). Unlike the con-

ventional economic model of optimizing behavior which postulates a continuous adjustment of the behavior variable to changes in the control variables and a continuous reversibility of behavior, the catastrophe model postulates a discontinuous adjustment and reversibility of behavior due to changes in the control variables.

If we accept this model, we can see that in a democratic society in which full exposure is not compulsory or enforced, it is cheaper to obtain information when the willingness to confide is high. But as confidentiality is increasingly violated, the short-term gain will be offset by a possible long-term catastrophic decline in the willingness to confide. And the discontinuous

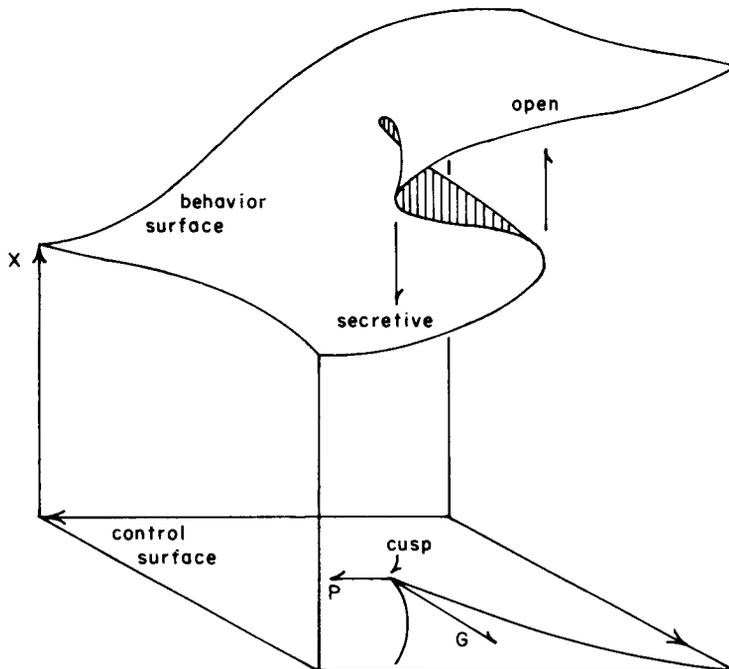


Figure 2 Cusp catastrophe of confidentiality

- P likelihood of leakage
- G gain from confidentiality
- X willingness to confide

reversibility of behavior implies that once the basic trust is lost, it is difficult to make people revert to their old open attitude. This is certainly not Pareto optimal, as both private and social benefits are reduced.

### Permissible and creative deviations

It is well known that behavior cannot adequately be evaluated merely by inspecting its external features. We must know what rules the social behavior is following and where the actors are in the interaction sequence. For example, minor noncompliance of social or institutional norms is widespread and is tacitly ignored if committed in one's own privacy. Such minor deviance can be unfavorably interpreted if viewed out of its proper context. Privacy allows these deviations to be ignored and preserves the confidentiality of the information relating to these behaviors.

More interesting is information relating to behavior, the norms governing which are changing in the process of interaction. Not infrequently, in interactions from which withdrawal of participation is difficult, individuals may unilaterally change the rules or the rules may, by group interaction, be shifted to a new ground. Behavior which is unacceptable under the old rules (deviations) is normalized under the new rules. Normalizations will continue as long as the satisfactions from the interaction are higher than those sacrificed by continued normalization. Normalization under such constitutive norms takes place between persons who "trust" one another, or who are bonded together by mutual claims, such as family, friendships, reciprocal business and professional relationships, or by informal ties which grow up within formal organizations (Lemert, 1967).

Such normalizations serve to accommodate deviations from formal or legal norms. They allow radically new behavior to emerge and develop without necessitating any premature changes in the formal or legal norms. They are particularly useful under changing circumstances when strict adherence to conventional norms may impose unnecessary hardships and when creative behavior is most likely to emerge.

Such hardships are not avoidable and such creativity would not have been possible if confidentiality is not protected.

Deviations are not always normalized. They may be negatively sanctioned if discovered by sympathetic parties. Unlike official sanctions imposed by law enforcement agencies which become easily accessible public records, these informal sanctions are likely to remain confidential. And without the social stigma often accompanying official sanctions which can permanently alter the cost structure of first offenders, secondary deviations induced by society's hostile reactions to first offenses (Lemert, 1967) are less likely to occur.

### Interest articulation

Individuals and groups often have to articulate their interests through competition or negotiation during which the opposing parties attempt to obtain the largest possible share of the total benefits. The success of these attempts depends on the ability to keep certain information confidential. Healthy competition and negotiation are necessary not only to determine distribution but also to increase the size of the total benefits to be distributed.

In politics, we can also demonstrate the indispensability of confidentiality to the vitality of democracy. For example, in democratic societies, a legal right to privacy for membership lists and officers' names has been given to labor unions, religious and political bodies, and civil rights organizations, especially when these groups were facing hostile community pressures. To the extent that these voluntary groups are primary units of group conflict, their formation to articulate legitimate special interests serves to release pressure when and where it is created. In communist societies, such as China, the complete replacement of all kinds of private ethic by a universalistic ethic through full exposure of private activities preempts and expropriates the formation of these voluntary groups and their interest articulation. As a result, the permanent and growing quantity of unreleased pressure in totalitarian states imbues their latent social and political conflicts with an intensity unknown in free societies (Dahrendorf, 1959, p. 315).

The dominance of a universalistic ethic in the totalitarian states also means that the power structure and the structure of social control are monistic. The effectiveness of these monistic structures depends to a large extent on the unity of an exemplary centralized decider subsystem. Any division among the central elite would greatly disrupt national unity and heighten conflict (Liu, 1976, p. 10).

Therefore, although the rationale for monistic power structures is their supposed ability to maintain unity and reduce conflict, their suppression of voluntary groups through full exposure induces greater instability through the preemption of alternative means of conflict resolution and social control. On the other hand, the pluralistic structures of power and social control resulting from the respect of confidentiality in the democratic societies permit greater stability as conflict resolution and social control are decentralized.

### Autonomy

To be autonomous, individuals must have the freedom from constant outside interference. They must be allowed to develop, to reflect, to drop their guard, to take risks, and to make choices. They must have the freedom to choose what they want to reveal, when they want to reveal it, and to whom they want to reveal it. Constant invasion of their privacy would discourage creativity and emotional release for fear of ridicule or negative sanctions (Westin, 1967, p. 33). To protect autonomy, information on individuals' private lives must be kept confidential.

### COSTS OF CONFIDENTIALITY

In order analytically to separate the costs of confidentiality from the benefits of full exposure, which I will deal with in the next section, I shall again assume in this section that the confidential relation concerned produces little or no negative external effects. Under this assumption, the costs of confidentiality include the following.

#### Ignorance

It is conceivable that sometimes the problem of the confider can be better solved

if the confidential information is deliberately leaked to some third parties whose interests are wrongly perceived by the confider as antagonistic but are in fact compatible. Under this circumstance, protection of confidentiality would simply encourage unnecessary defenses on the part of the confider.

#### Hypocrisy

People may also be afraid to reveal some behavior which falls short of the ideal social or legal norms but which is in itself not objectively harmful to anyone. If this behavior is in fact quite common, protection of confidentiality does not serve any useful purpose. Instead, it only encourages hypocrisy. The solution is obviously to adjust the unreasonable norms. The so-called gay movement can be viewed as a deliberate attempt by gay persons to expose the extent of homosexual behavior in society so as to force an adjustment of the social norm which has been penalizing it. Also, by artificially imposing negative sanctions, hypocrisy inadvertently creates room for blackmail threats.

#### Jealousy

Very often, information is kept confidential presumably to avoid jealousy. In fact, jealousy is often caused by too little rather than too much information. Salary figures are a good case in point. If salary figures are revealed together with the evaluation criteria and job performance records, a lot of jealousy can be eliminated provided that the salaries have been awarded fairly.

### BENEFITS OF FULL EXPOSURE

The opposite of confidentiality is full exposure. It implies that no information, no matter how intimate and private, can be treated as confidential. And coercive power can legitimately be brought to bear if the confider or confidee refuses to disclose the relevant information. To facilitate the discussion of benefits arising from full exposure, I shall assume in this section that the confidential relation concerned produces significant negative external effects.

#### Type I and type II errors

Full exposure reduces type I and type II

errors. In law enforcement, type I errors result if an innocent man is condemned (innocence is rejected). Type II errors result if a guilty man is set free (innocence is accepted). Type I errors can only be reduced by increasing the chance of type II errors unless crime detection is improved. Full exposure will serve to improve crime detection and thereby reduce type I and type II errors simultaneously.

### Information costs

In the short run, full exposure reduces the cost of relevant information. One set of information, once generated, will be used for all conceivable purposes. For example, if a criminal confesses to a priest about his crimes, this information will be available to law enforcement agencies without any restriction. Or data gathered by a census bureau will be used by the IRS to detect tax evasions. The duplication of resources to gather data for separate purposes from the same set of respondents can then be avoided. And with the help of high-speed database computer technology, potentially confidential information can be obtained at very low costs. The inefficiency of social programs due to duplication and misallocation of resources can be reduced.

### Behavior modification

Full exposure not only reduces the cost of obtaining information about deviant behavior, it may also modify behavior by reducing deviance in the first place. This, of course, depends on how full exposure is made to be. Where full exposure is expected and enforced, a universalistic ethic can become so dominant in governing all aspects of social behavior that conformity to it may be the only viable alternative, as any deviation from it will be quickly discovered and sanctioned. In communist China this is achieved by a system of compulsory mutual reporting of all activities down to the most detailed matter of daily lives by acquaintances, friends, and relatives to the grass-roots authorities, particularly during the frequent periodic political campaigns. Such a complete elimination of confidentiality in all social relationships in China is instrumental in reducing the threats to political

control and in bringing about a new basis of personal relationships which makes it possible for people of different social backgrounds, from different geographical areas, with different personal tastes to have a workable relationship in modernizing society undergoing rapid social change and reorganization (Vogel, 1965).

### LIMITS OF CONFIDENTIALITY IN A CLOSED SYSTEM

Since the power of confidentiality lies in its creation of confidential information as a single purpose instrument to satisfy specific objectives, the number of relevant objectives must be no more than the number of confidential information units if this power is to be realized (Tinbergen, 1970). But the fact that some information must be kept confidential indicates that it is potentially useful for other conflicting purposes. Although relevant information for these conflicting purposes can sometimes also be obtained through antagonistic informants, such intelligence activities must again be based on the protection of secondary confidentiality (see the section on primary vs. secondary confidentiality).

As long as the interests represented by these other conflicting purposes remain unprotected, such as the privacy rights of students with respect to their academic grades before the Privacy Act and the interests of those subject to sex and race discrimination before affirmative action, they can be treated as irrelevant and their values can be residually determined. Irrelevant interests thus act much as slacks in an open system in which some of its variables have not been functionally looped. The concept of an open system as used here is analogous to a successional ecosystem in which gross production is greater than total respiration. The surplus net ecosystem production is analogous to the slacks in our interaction system. This net production provides energy for a rapid expansion of new species with little restraint from existing species (Woodwell, 1970). The existence of these slacks makes it possible to keep the number of instruments more or less equal to the number of objectives. Under this circumstance, the right to confidential-

ity tends to be unchallenged and confers the greatest amount of advantage.

However, as soon as these unprotected interests become protected, the slacks are exhausted and the freedom of the formerly relevant variables to choose their own values is limited by the newly added relevant variables to the agenda. The disappearance of slacks indicates that the system is closing. Since all variables have been functionally looped, it is impossible to distinguish between objectives and instruments in such a closed system. The concept of a closed system as used here is analogous to a climax ecosystem in which gross production is equal to total respiration. Net ecosystem production is zero, analogous to the exhaustion of slacks in our interaction system (Woodwell, 1970). The objectives in one instance become the instruments of another. And the instruments in one instance become the objectives of another (Fung & DeSerpa, 1978). Under this circumstance, the right to confidentiality must be balanced against other conflicting interests and confidential information can no longer remain a single-purpose instrument.

#### SELECTIVE PROTECTION OF CONFIDENTIALITY

Since confidential information generally contains information relevant to third-party interests, the protection of confidentiality must necessarily be selective. It is more a question of when, how, and how much confidentiality should be protected rather than whether confidentiality should or should not be protected.

Whether this selectivity is biased toward confidentiality or full exposure depends on the general conditions of society. In a decaying society which fails to cope with its social, economic, and political environments, or one that just emerges from a decaying society and is in the process of building a new one, the old values of its members are likely to be incompatible with the new values and the energy of most of its members is likely to be unproductively channeled. Under these conditions, it is potentially Pareto optimal to emphasize full exposure. Therefore, full exposure should be insisted upon unless there is convincing

evidence to warrant confidentiality.

On the other hand, in a well-ordered society in which the energy of most people are productively channeled and the values of its members are generally constructive, it is potentially Pareto optimal to emphasize confidentiality. Therefore, confidentiality should be protected unless there is convincing evidence to warrant full exposure.

The present discussion will be limited to an optimistic world view and assume that decay is only a transition to health. In a healthy society, the best arrangement seems to be to grant conditional protection to confidentiality. This conditional protection should take into account both the efficiency and distribution effects. Specifically, both the right to know of the unintended third party and the right to confidentiality of the intended parties are recognized. But these rights and the burden of proof are to be assigned to different parties according to their relative gains/losses and relative strength.

If the intended parties (i.e., the confider and the confidee) have less resources at their disposal than the unintended third party, the right to confidentiality would be granted to the former and the burden of proof for disclosure would be assigned to the latter. In order to successfully obtain disclosure, the unintended third party must prove to the satisfaction of the court or some mutually agreed upon arbitrator that:

(1) the confidential information contains information relevant for the unintended third party;

(2) there are no alternative sources for the information that do not violate confidentiality, or these alternative sources are too expensive for the unintended third party to obtain; and

(3) the total benefits of disclosure to all parties are greater than the total costs of disclosure to all parties (Cf. Wigmore, 1940).

This assignment of the burden of proof to the stronger unintended third party not only emphasizes confidentiality, but also ensures that if the above conditions are true, a potentially Pareto optimal result could be more easily brought about by the

stronger party. This arrangement is therefore both potentially Pareto optimal and distributionally just (Calabresi & Melamed, 1972).

On the other hand, if the unintended third parties have less resources at their disposal than the intended parties, the right to know would be granted to the former and the burden of proof against disclosure would be assigned to the latter. In order to successfully resist disclosure, the intended parties must prove to the satisfaction of the court or some mutually agreed upon arbitrator that:

(1) they do not possess information that adversely affects the interests of the unintended third party; or

(2) the information can be obtained from alternative sources at little cost; and

(3) the total costs of disclosure to all parties are greater than the total benefits of disclosure to all parties.

Again this assignment of the burden of proof to the stronger parties ensures that, if the above conditions are true, a potentially Pareto optimal result could be more easily brought about. Finally, where the two conflicting parties are of equal strength, the intended parties would be granted the right to confidentiality and the unintended party would be assigned the burden of proof for disclosure.

With the exception of the second arrangement, the first and the third arrangements are broadly consistent with our current judicial position which assumes innocence unless proven guilty. Also, like our current protection against self-incrimination, they grant protection to confidentiality regardless of what kind of confidential relationship it is and who are involved in it. Moreover, taken together, these three arrangements represent a coherent approach to the issue of confidentiality which ensures both potential Pareto optimality and distributional justice.

In contrast, the U.S. legislation and judicial practice regarding the issue of confidentiality are largely incoherent. The intended parties are not always assumed innocent unless proven guilty. And when innocence is not assumed, the decision is not based on anything more than custom. For example, traditionally, the claim to confi-

deniality is more readily respected for the doctor-patient relationship, lawyer-client relationship, and priest-penitent relationship without any reference to the relative strength of the intended or unintended parties. The burden of proof for disclosure always falls on the unintended third party. If the two conflicting parties are of equal strength, this arrangement is consistent with the suggested approach. But if the parties claiming confidentiality are the stronger party, e.g., a corporate client from a big corporation in a lawyer-client relationship, and the parties desiring disclosure are the weaker party, e.g., a private individual of meager means, then this automatic granting of the confidentiality right to the lawyer-client relationship may be inappropriate according to the suggested approach. In any case, the traditional preference for some confidential relationships over other confidential relationships is not consistent with the current judicial positions on assumed innocence and freedom from self-incrimination.

However, this is not to say that none of our judicial practice or legislation is consistent with the suggested approach here. For example, the provisions in the Fair Credit Reporting Act, which guarantees credit users' access to their personal credit files maintained by credit bureaus, and those in the Privacy Act that guarantee citizens' access to their personal data files maintained by government agencies are entirely consistent with the suggested approach here. First, the right to know is granted to the weaker parties, i.e., the credit users and the private citizens. Second, the three conditions for disclosure are clearly satisfied. Specifically, these files do contain information directly relevant for the private citizens and credit users. The question as to whether these information can be obtained from alternative sources is irrelevant since these files should not contain anything which the file subjects themselves do not already know. The confidentiality here involves only the identity of the informants and not the information content itself, i.e., secondary confidentiality (see section on primary vs. secondary confidentiality). And since the purpose of disclosure is to check whether the information in the files are

correct, disclosure serves both the interests of the organizations maintaining the files (assuming that they are interested in correct information) and the file subjects.

Current judicial practice and legislation which deny unintended parties' access to juvenile arrest records and student academic records are also consistent with the suggested approach here. First, the right to confidentiality is granted to the weaker parties, i.e., the juveniles and students. Second, it is difficult to demonstrate, except in the case of chronic, serious juvenile offenders, why keeping these records confidential should harm the unintended parties.

The fact still remains that our current practices toward the issue of confidentiality will remain incoherent or inconsistent unless some variants of the suggested approach here is followed. In addition to being potentially Pareto optimal and distributionally just, the suggested approach to a selective protection of confidentiality will help eliminate a lot of abuses that could be perpetrated under either a regime of absolute confidentiality or a regime of full exposure. Without an absolute protection of confidentiality, the confidant may have to be more careful about accepting confidants that they cannot be expected to cover up or assist in any prospective crimes (Hipler, 1976; Roth & Meisel, 1977). Interpersonal relations may have to be more clearly and formally defined in terms of confidentiality. In other words, a confidential relationship should be clearly distinguished from a nonantagonistic relationship or an antagonistic relationship. However, since due process governs and restricts the violation of confidentiality, there is no danger of a wholesale destruction of trust among the people.

#### SOME REMAINING ISSUES

##### Litigation vs. legislation

The suggested approach depends on a reinterpretation and alternative application of existing laws governing rights and burden of proof. Under this approach, all problems involving confidentiality are resolved only through more or less prolonged litigation, the costs of which must also be taken into account. However, some problems of con-

fidentiality such as those involving ignorance and hypocrisy can be better resolved through new legislation. In fact, the food labeling law and sunshine law deal at least partly with problems involving ignorance whereby the intended parties misjudge the harm of disclosure to themselves. The impending legislation on used car information also deals with the same problem. When hypocrisy is involved, decriminalization may be more appropriate.

##### Disclosure vs. compensation

In some cases, the purpose of disclosure can be achieved without actually disclosing the relevant information to the third party. The only other party that the information needs to be disclosed to is the judge or the arbitrator. This is so because disclosure to the third party often means disclosure to everybody else. Under this circumstance, the costs to the intended parties may greatly exceed the benefits to the third party. Instead of disclosure, the third party can be awarded compensation. Even if disclosure to the third party is deemed necessary, it should be limited to only the subset of information that is directly relevant.

##### Primary vs. secondary confidentiality

Protection of confidentiality in cases where the information is primarily concerned with the confidants (i.e., primary confidentiality) should be distinguished from the protection of confidentiality in cases where the information is primarily concerned with parties other than the confidants (i.e., secondary confidentiality). Not all protection against forced disclosure protects primary confidentiality. The protection of information sources to law enforcement agencies and newspaper reporters, for example, may undermine primary confidentiality if the information to be disclosed is obtained in a confidential relationship by the informants. Under this circumstance, the compulsory disclosure of information sources who inform on other people may in fact encourage primary confidentiality. The relationship between primary and secondary confidentiality as well as the issue of secondary confidentiality require separate attention as they raise additional problems not covered in this paper.

### Confidentiality vs. privacy

While confidentiality always involves privacy, privacy may not involve confidentiality. Information with a private component can be generated in a nonconfidential relation. For example, police records and personnel records are usually not generated in a confidential relation. But they relate to the record subjects concerned. If these information are released to parties unintended by the record subjects, privacy is violated but confidentiality is not. In fact, the issue of privacy is involved even if these records are released to parties which perform the same functions as the parties which send the records, e.g., when personnel records are sent without the record subjects' approval from one employer to another employer. The recent surge of employee suits against their employers often stems from the issue of privacy (*Business Week*, 1979). While our analysis certainly applies to the issue of privacy, privacy also raises additional problems which require separate attention.

### CONCLUSIONS

Confidential information is a powerful instrument to achieve specific objectives in an open system where there are slacks to ensure an equality in the number of objectives and instruments. But, in a closed system with no slacks, protection of confidentiality can only create insurmountable conflicts because objectives and instruments are no longer distinguishable. In such a system, confidentiality should only be selectively protected to ensure economic efficiency and distributional justice by assigning rights and burden of proof to different interested parties according to their relative gains/losses and relative strength. Where confidentiality involves problems of ignorance and hypocrisy, new legislation to

mandate disclosure of some information or to decriminalize some activities may be more appropriate than costly litigation.

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