



# Crossing Privacy, Information, and Ethics

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## ABSTRACT

This paper introduces a theoretical exploration of an interdisciplinary field that integrates principles of ethics, privacy and information. Ethics has already been interwoven with information in the field of information ethics. We show that information ethics does not provide sufficient notions to handle ethical analysis that involves private information. Private information ethics gives moral consideration to the well-being of private information based on moral considerations regarding the welfare of its proprietor (the 'owner' of the information).

## INTRODUCTION

"Information Ethics" (IE) can provide an important conceptual framework within which to understand a multitude of ethical issues that are emerging as a result of new information technologies (Mathiesen, 2004). According to Floridi (1998), IE refers to the philosophical foundation that provides the basis for the moral principles that will then guide the problem-solving procedures in computer ethics. In IE, all objects are "information objects" and all information objects have inherent moral value. A human being as a private information entity has an intrinsic value that should regulate a moral action affecting it. "[A] person, a free and responsible agent, is after all a packet of information... We are our information and when an information entity is a human being at the receiving end of an action, we can speak of a me-hood. ... What kind of moral rights does a me-hood enjoy? Privacy is certainly one of them, for personal information is a constitutive part of a me-hood" (Floridi, 1998).

Mathiesen (2004) criticized such a theory of IE since "a theory of information ethics will need to specify the relation between persons and information such that information can be of ethical import." Why does IE lack the specification of "the relation between persons and information such that information can be of ethical import?" We claim the reason is that IE does not provide sufficient definition of the types of information necessary for ethical analysis. Simply put, "*private* information," not just "information," is the "centre of ethical worth" of our information sphere because it is based on the highest possible characterization of intrinsic volubility, *a human person*, while the worth of abstract information is built on the lowest possible common attribute of such a worth.

## THE PROBLEM

Consider the difference between the idea of a human being as an information entity and as a *private* information entity. Suppose that a husband, "John," reads the diary of his wife, "Alice," without her permission. What is wrong with such an act? (Floridi, 1998). According to IE, the source of the wrongness is "a lack of care and respect for the individual, who is also her information" (Floridi, 1998). We should ask agents "to realise that when they treat personal and private information, they are treating human beings themselves, and should therefore exercise the same care and show the same ethical respect they would exercise and show when dealing with other people, living bodies or environmental elements" (Floridi, 1998). Nevertheless, in this example, the "ethical consideration" conferred on the patient (the recipient of the consequences, i.e., the wife) is not because she is an

information entity, but rather because she is a "private information entity."

Suppose that the diary does not include any private information, but contains nothing other than comparisons between scientific materials related to the wife's profession. It is not clear whether IE considers such materials "private" (since they are privately owned) and thereby considers treating it as treating human beings themselves. If IE considers the materials to be private information, then this seems to mix possession of non-private information with information about a person. We show later that non-informational privacy intrusion is different than informational privacy intrusion. If IE does not consider such material to be private information, then the given ethical justification (treating it as treating human beings themselves) needs examination. It seems that the assumption here is that since the information is in a diary, it is personal information. We can raise the question, what if the diary contains other people's personal information that is in the wife's possession? In this case, does "treating human beings themselves" refer to the wife, the other people or both?

Suppose the diary includes only private information regarding the wife's friend, "Jane." For simplicity, assume it includes only the information, "*Jane is broke*," and that this is Jane's private information that is in Alice's possession. An IE justification may lead to the interpretation that the husband's intrusion is wrong because it is an intrusion on Jane as an information entity (since it is difficult to think of this information as a constitutive part of the wife). The wife's position as a patient in this ethical discourse is unclear. She is an information entity that possesses the personal information of another information entity. Also, suppose that, in the last case, the husband read the diary with the permission of his wife. Does IE consider his act (or his wife's act of granting permission) to be wrong? Suppose that what the husband found in his wife's diary is information about himself, for instance that his mother confidentially told his wife that he once had a psychological disturbance when he was a boy and that – according to his doctor's advice – he should not be reminded of it. Where are the agent and the patient in such a scenario? Do we consider the husband an agent who stumbled on "a constitute part" of his-hood (the patient). In the alternative, is the wife the agent who has no right to hide a constitutive part of her husband's informational "ontology" while, at the same time, she is the patient who is affected by the husband's violation of her diary.

Assume that the husband found a plan to kill a person, "Jane," in his wife's diary. Is the plan Alice's private information? Does Jane have any claim to this information? We observe that ethical analysis related to private information needs a well-defined notion of what private information really is. What is needed here is a theory of private information that provides a framework for organizing private (personal) information issues. Utilizing the definition of private information proposed by Al-Fedaghi (2005a) and the basic premise of IE that information has intrinsic moral value, we will construct a foundation for private information ethics.

## PRIVATE INFORMATION

Private information theory includes a universal set of private information agents,  $Z = V \cup N$ , of two fundamental types: *Individual* and

*Nonindividual*. *Individual* represents the set of natural persons  $V$ ; *Nonindividual* represents the set of non-persons  $N$  in  $Z$ .

**Definition:** Private information is any linguistic expression that has referent(s) of type *Individual*. Assume that  $p(X)$  is a sentence such that  $X$  is the set of its referents. There are two types of private information:

- (1)  $p(X)$  is atomic private information if  $X \cap V$  is the singleton set  $\{x\}$ , i.e., atomic private information is an expression that has a single human referent.
- (2)  $p(X)$  is compound private information if  $|X \cap V| > 1$ , i.e., compound private information is an expression that has more than one human referent.

In Al-Fedaghi (2005a), the relationship between individuals and their own atomic private information is called *proprietaryship*. If  $p$  is a piece of atomic private information of  $v \in V$ , then  $v$  is its *proprietor*. A *possessor* refers to any agent in  $Z$  that knows stores or owns the information. Any compound private assertion is privacy-reducible to a set of atomic private assertions. The familiar notation “.” is used to define the informational entity *Individual* such as *Individual.Proprietary.Known*, as shown in Figure 1.

Figure 1 includes the following sets:

1. *Proprietary* is the set of pieces of atomic private information of an individual. *Proprietary* has two components:
  - (a) *Known*: The set of pieces of atomic private information that is in possession of others.
  - (b) *Notknown*: The set of pieces of atomic private information that is only known by the proprietor.
2. *NProprietary* is the set of pieces of private information of the other individuals that is in the possession of a different individual; however, the individual in possession is not the proprietor.

## PRIVATE INFORMATION ETHICS

In Al-Fedaghi (2005a), it is proposed to adopt Floridi’s notion of moral value of information to private information such that private information ethics (PIE) recognizes private information itself has an intrinsic moral value. Recognition of the intrinsic ethical value of private information does not imply prohibiting acting upon the information. Rather, it means that, while others may have a right to utilize private information for legitimate needs and purposes, it should not be done in such a way that devalues private information as an object of respect. Private information consists of “human parts” with intrinsic value that precludes misuse. “Human parts,” as used here, does not imply a kind of sacredness; rather, it expresses relationship to humaneness that may be as valuable as a brain or as insignificant as some parts of the hair or nails. For example, the ontology of the person’s genome is on the border between material and informational forms being. A person can collect pieces of hairs to know the sequences the DNA; hence, in this case, private information is literally, in Floridi’s words, “part of me-hood”.

The human-centered significance aspect of private information also derives from its value to a human being as something that hides his/her secrets, feelings, embarrassing facts, etc., and something that gives him/her a sense of identity, security and, of course, privacy. There are many conceptualizations of human beings as information processors, information seekers, information consumers, information designers, and as “packets of information.” On the other hand, privacy has always been

promoted as a human trait and hence, information and privacy in combination result in a unique human notion that is vital and valued: private information.

Floridi introduced the notion of infosphere:

*“The task is to formulate an information ethics that can treat the world of data, information, knowledge and communication as a new environment: the infosphere” (Floridi, 2001).*

Similarly, we propose the private information infosphere as a new environment for private information, as defined previously. Private information infosphere conceptualizes human beings as information referents. PIE is concerned with the “moral consideration” of private information because private information’s “well-being” is a manifestation of the proprietor’s welfare. The moral aspect of being a piece of private assertion means that, before acting on such information, thought should be given to its “being private,” in addition to other considerations (e.g., its significance/insignificance). This extension of ethical concern is a kind of infosphere/biosphere mixture since the *patient* is an informational “beingness” of a person.

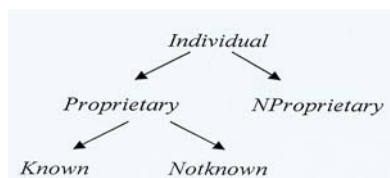
The private information infosphere includes entities in  $Z = V \cup N$  that deal with private information. Individuals (humans) in  $V$  and non-individuals (non-humans) in  $N$  act as agents. Also, in PIE, the informational ontology of a human being is limited to his/her proprietary private information, i.e., private information that refers to him/herself. A human being may possess non-private information or private information about others, but these types of private information are not “a constitutive part” of that human being.

Private information is considered to have a higher intrinsic moral value than non-private information. From the privacy side, the moral worth of private information is based on the assumption that the proper “beneficiary” of the moral action is the proprietor of the private information. Thus, the intrinsic moral status of private information comes from the intrinsic moral status of its proprietor. To phrase it more accurately, the “moral considerability” of private information by agents stems from the proprietor’s right to “privacy”.

The individual’s role as patient comes indirectly through having his/her proprietary private information affected by the agents’ activities on that private information. Consider the act of possessing private information that is not one’s own, against the proprietor’s will, whose consent is not unreasonably withheld. What is wrong with such an act is not the possession of information, hardly valued in itself as an anonymized piece of information, but the possession of information with a particular quality - namely, that of being not the proprietary information of the possessor. Thus, the proprietor of the possessed information is the patient toward whom the act is aimed, and it is the patient who is affected. The sensitivity of the private information is incidental; whether it is information of minor significance or vital health information does not affect the fundamental character of the act as morally wrong. Thus, possession of private information - against the proprietor’s will - amounts, morally, to theft, where the wrong is not acting on the stolen thing, but taking the thing which is not one’s own.

According to PIE, a human being, as a private information entity, has an intrinsic value that should regulate a moral action affecting him/her. Information about the human-information entity (proprietary private information) has an intrinsic value because it is a constitutive part of that entity. Privacy is assumed to be property of human beings. Thus, “Book DS559.46.H35 is out of print,” is not private information; consequently, it has no PIE intrinsic value. Also, if the person under consideration is Einstein, then  $E=mc^2$  is not a constitutive part of Einstein, while, “I am convinced that He does not play dice,” is because it contains the identification, “I,” that refers uniquely to Einstein. A fundamental premise in PIE is that proprietary private information about individuals is a constitutive part of the individuals. The implication here is that private information has a value because a person values it in the same way he/she values aspects or parts of his/herself.

Figure 1. Proprietary information and non-proprietary information



We claim that the very nature of atomic private information gives it more significance than comparable non-private information. Suppose that we have the two assertions:

1. p (non-private assertion): *Students in this class threatened one of their teachers.*
2. q (atomic private assertion): *Students in this class threatened their teacher, Mrs. Jones.*

We claim that q deserves more ethical consideration (e.g., is more bad) than p. The reason is that the assertion p has many possibilities of actions by the principal of the school. Ethical judgment motivates acts. The significance of the assertion is reflected in terms of its specificity in regard to performing an act. We can notice this in all aspects of life. A salesman immediately serves the customer who knows what he/she wants because this conserves the salesman's energy. Courts have recognized the significance of this; thus, they specifically require professionals to act (e.g., warning victims) only when there is an overt threat of violence toward a specifically-identifiable victim. To put it simply, q deserves more ethical consideration than p because it deserves more acting consideration. Alternatively (and according to IE), we can observe that p has "less information" than q and hence, it is less valuable.

The general objective in IE is to minimize any kind of decay in the information system, or information entropy. In information theory, entropy is usually viewed as a measure of the level of disorganization in any part of the universe. In this sense, information counteracts decay. In PIE, a condition in which there is no private information refers to complete "publicness" (decay) of informational privacy where every possessor has all private information in the environment, assuming  $|Z| > 1$  and  $|V| > 0$ . The other extreme state occurs when there is no possession of non-proprietary private information. We can assume a model of a finite and closed system with ideal state of distribution of private information where "good" acts are those acts that bring the system closer to this ideal state.

PIE is unique in terms of its entropy-related properties. For example, randomization increases the information entropy of the system. Nevertheless, the techniques of randomization and anonymization are used to protect private information. Both techniques increase the information entropy. A hospital that k-anonymizes its health records makes every k records indistinguishable from each other, thus increasing the level of entropy. The opposite is true in PIE, where randomization and anonymization halt the "spread" of private information, thus increasing informational privacy and the "privacy order" of the environment.

PIE's evaluating moral criteria is that "publicness of private information" is, in general, evil because it causes the degradation of privacy. "Publicness" of private information refers to any transaction that results in moving private information:

- (a) from *Proprietary.Notknown* to *Proprietary.Known*,
- (b) to more possessors in *Proprietary.Known*.

"Publicness" is "dis-privatizing" the individual and can be viewed as the disorder (entropy) of the structure of private information; consequently, minimizing it benefits the privacy environment and allows the proprietors of private information to flourish.

The ethical principles regarding private information regulate the behavior of any agent. Individuals have proprietary rights to their private information. Agents have the duty to treat private information, when it is put in the role of patient, as an informational manifestation of its proprietor. Generally, any action on a piece of private information is evaluated in terms of its contribution to the welfare of the privacy information sphere, which implies the welfare of proprietors. This focus on welfare seems to have some universality, as suggested by the development of agreed-upon principles of private-information protection and other privacy-protection rules.

## PRIVACY INTRUSION

Returning to the example of a husband who reads his wife's diary without her permission, the husband's act is wrong because he then possessed private information without the consent of its proprietor. There are several types of interference or intrusion in PIE. Also, there is a difference between the act of intruding on a person and intruding on that person's private information.

**Non-informational privacy intrusion:** In this situation, the wife's diary includes no information or non-private information. Notice that the "patient" in PIE is private information.

**Informational privacy intrusion:** In this case, the agent's intrusion is on the private information of a proprietor, i.e., the diary includes private information.

Figure 2 shows possible categories of this type of private information that can be found by the husband.

Accordingly, informational privacy intrusion on each type of these pieces of private information carries different ethical weight:

**Intrusion on *Proprietary.Known*:** As in (1): This piece of atomic private information is a shared secret between Alice and her mother, Mary. The intrusion in this case is an intrusion on Alice's right to control the sharing of her private information with others.

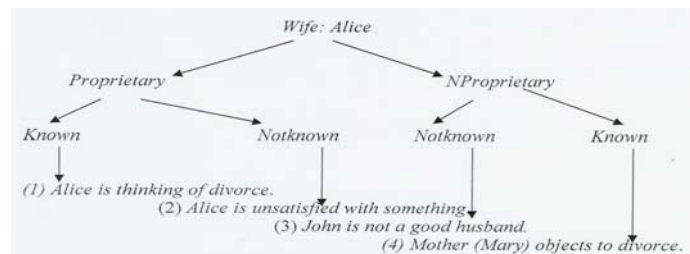
**Intrusion on *Proprietary.Notknown*:** As in (2): Only Alice knows this piece of atomic private information. She has not even mentioned it to her mother. This intrusion is a violation of Alice's right to have her private information remain in her mind.

**Intrusion on *NProprietary.Notknown*:** As in (3): Alice knows this piece of atomic private information about John and she does not tell anyone about it. This intrusion is an intrusion on Alice's right to generate private information about others in her mind.

**Intrusion on *NProprietary.Known*:** As in (4): This piece of atomic private information about Mary is known by Alice and others. We assume that John is not among the people who know this about Mary. This intrusion is an intrusion on the confidentiality of private information in possession of a person.

As we see here, the husband's act is an informational privacy related act if it involves private information. If it does not, its moral status is equivalent to intrusion on things that the wife owns, such as logging onto her computer without consent. Such an act may have privacy-significance but it is not an intrusion on "me-hood." It is analogous to stealing my pencil, in contrast to stealing, for instance, pieces of my hair for whatever purpose. If the act does involve private information, then the moral seriousness of such an act depends on the type of private information involved.

Figure 2. Possible categories of informational privacy intrusion



## CONCLUSION

The intertwining of privacy, ethics and information generates many new ways to revisit theories and issues from these three realms of inquiry. An example is developing moral justification for lying about private information. Privacy provides a universal requirement that supports lying about private information in order to avoid harm (Al-Fedaghi, 2005b). PIE is also applied to study the dilemma whether to breach confidentiality in the case of the risk of harming identifiable individuals (Al-Fedaghi, 2005c). It is argued that the *right* of the third-party person to his/her private information outweighs maintaining patient confidentiality. The argument is that the private information involved is "compound" information that identifies several individuals and hence it is "owned" by all of its proprietors. Further work in this direction includes applying PIE to rules of fair information practices, personal defamation, personal misinformation, etc.

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