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# Ethical Concepts and Information Technology

**Why we should be  
concerned about  
computer privacy**

*The fundamental aspects of classical and contemporary ethics, particularly as they apply to the use of IT, offer valuable lessons of professional conduct.*

Despite the explosion in information technology (IT) in the last 20 years, scholars, students, and practitioners would be hard-pressed to claim similar progress in ethical thinking about information technology. There is an ethical vacuum in cyberspace [1]. There have of course been pioneers who have explored the outer fringes of the territory called IT ethics [3, 5, 12, 17, 20, 21], but no systematic literature has emerged as one finds, for instance, in business ethics [4], and in medical and legal ethics [24].

There are four difficulties with the existing IT literature. First, with some exceptions, the nascent and early IT ethics literature is not well grounded in the classical or contemporary theories and language of ethics (the exception here is Johnson, [12]). Some fundamental concepts of ethical behavior and description are therefore missing. Second, the early literature is often a response to pressing social problems and there is a resulting social crisis mentality calling for immediate, often legal, action. The attention paid to software theft, system failures, "hacking," security lapses, and the like give the IT ethics literature a disorganized topology. Often, the literature reflects a particular bias toward the problems of powerful groups, such as the concern for IT worker moral choice as opposed to concern about management and organizational ethical choices [13]. As a result, we have no map of the IT ethics domain that identifies major land masses, compass directions, levels of analysis, or recommended pathways to get from point A to

point B. We need such a map to guide practitioners and researchers and to illustrate for our students the issues they will surely face in the near future.

Third, the literature has a highly atomistic and individual orientation, which focuses on what individual IT employees, managers, and system designers should do. There is little in the literature about the qualities of a “good” or “ethical” information systems group or organization or about the political uses of IT or consideration of an ethical IT-intensive society. Last, the existing literature is neither normative nor prescriptive. There are few answers offered to the questions “What should I do? What should we as an organization do? What laws should we have? What social norms should we encourage?” Instead the literature often merely catalogs situations and offers up situational ethics without any general principles to guide us, and without suggesting a methodology. Often practitioners are advised to consult some professional code, of which there are at least four, and which often give contrary advice [20, 21].

In this article we cannot thoroughly address all these issues. Therefore we focus on identifying key dimensions and concepts in the classical and con-

tions are: phenomenology vs. positivism; rules vs. consequences; and individuals vs. collectivities.

- *Phenomenology vs. Positivism.* In answer to the question “What should I do?” the ethical literature is divided between the ideas of “givenness” and empirical observation and discovery. For ethicists who can be called phenomenologists, what is good is given in the situation, derived from the logic and language of the situation or from dialog and debate about “goodness” per se. Positivists, on the other hand, argue that we should observe the real world and inductively derive ethical principles.
- *Rules vs. Consequences.*<sup>1</sup> Ethicists who are in the “rules” camp believe good actions result from following the correct rules of behavior, which generally are thought to be universal and applicable to all. These rules are based on religious beliefs, intuition, or aesthetic belief. Ethicists who focus on consequences, in contrast, believe general rules are not specific enough to guide action and feel instead that we must look to the consequences of our actions, and take the actions that produce the

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temporary ethics literature. We then identify a small group of ethical concerns that have great relevance to IT ethics.

#### **Ethical Concepts That Define A Moral Space**

Ethics is about the decision making and actions of free human beings. When faced with alternative courses of action or alternative goals to pursue, ethics helps us to make the correct decision. Ethics helps provide answers to questions like “What should I do? What should we do? What goals should we pursue? What laws should we have? What collective behavior should we all pursue?” Ethics is concerned with practical decision making and human behavior in the broadest context. Ethics is the premier social science, encompassing sociology, economics, psychology, anthropology, and history. Ethics is, above all, about what is good and what is evil, and how we come to make such judgments [11].

There are approximately 2,000 years of organized literature concerned with ethics, and it would be presumptuous to attempt a review. Nevertheless, there are at least three critical distinctions in the literature that can be used to organize the literature, and to situate one’s analysis in that literature, and of which IT ethicists should therefore be aware. These distinc-

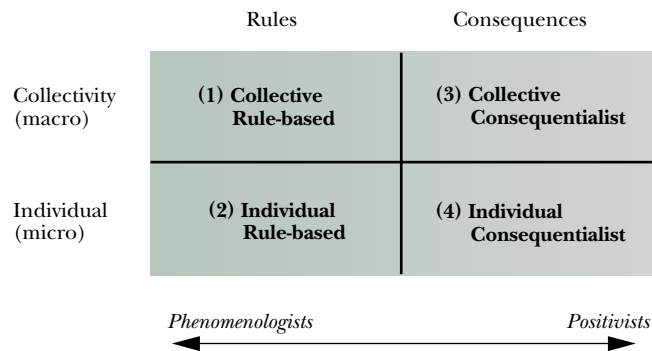
best results or consequences.

- *Individuals vs. Collectivities (micro vs. macro levels).* Ethicists differ on the locus of moral authority even as they agree individual decision making is the proper subject of ethics. Some argue that moral authority is located in the individual, who through self-analysis and reflection comes to develop a set of rules, or engages in an analysis of self-interest. Others argue that moral authority must be located in larger collectivities—the organization, society, or polity. Both positions carry risks. The former allows individuals to set their own rules, their own ethics, regardless of society. The latter introduces a potential moral relativism of a different sort: Whatever the group believes is best becomes the rule.

#### **Major Schools of Classical and Contemporary Ethics**

We argue here that much of classical and contemporary ethical thought can be arranged in the space created by the intersection of two of these dimensions: rules/consequences and collective/individual. Four distinct schools of ethical thinking can be derived (see Figure 1).

<sup>1</sup> In the ethics literature, rule-based philosophers are called “deontologists,” while those who focus on consequences are called “consequentialists.”



**Figure 1.** A typology of ethical theories

The third distinction previously described—phenomenology/positivism—remains useful for making fine-grained distinctions among ethical arguments. In general, but not always, ethicists who focus on rules typically adopt a phenomenological position: The rules are “given” in the situation. And in general, but not always, those who focus on consequences typically argue that we should empirically observe consequences and then make judgements. I have retained this distinction in Figure 1 as a continuum line. We describe each of the major ethical schools and illustrate their relevance to ethical reasoning about IT issues in the following subsections.

**School 1: Collective Rule-based Ethics**

This school argues that we should follow rules of ethical behavior and that these rules can be derived or do in fact derive from the logic of the situation. These rules are species-wide and apply universally. Socrates and Plato began the debate by positing that “goodness” itself was a form or concept—just like “chair” or “table”—that could be described and approached by humans even though it could never be perfectly grasped. The point of ethics was to discover, through dialogue, literature, and language, the nature of goodness, and, once understood, to base actions and goals upon it. Kant, and many others to follow, followed a similar line. For Kant, the world of “phenomena” was entirely based on species-wide categories of human understanding—categories of pure reason, like cause and effect, time, and order. The “real,” or noumenal world could never be directly observed without invoking the categories of human understanding. Kant believed the right course of action would be consistent with pure reason and the wrong course of action a violation of reason, a contradiction. For instance, for Kant, the answer to the question “Should I throw beer cans on the road as I drive along?” would obviously be “No,” because if everyone did this it would be impossible for anyone to drive along the road. It would lead to a *reductio ad absurdum*. This reasoning forms the basis for categorical imperatives or rules, such as, “Thou shalt not throw beer cans (or any cans) on the road.” For both Plato and Kant, the rules of good behavior were collective, species-wide, and invariant to conse-

quences. The cynic’s response to this school is “So what?” Just because I throw cans on the road does not mean, empirically speaking, that everyone will throw cans on the road.

In the IT arena, the collective, rule-based argument is often used to support software antipiracy and anti-copying policies. The argument is “If everyone copied software, there would be no software industry because there would be no incentive to produce software.”

**School 2: Individual Rule-based Ethics**

This school argues that individuals shall come to know what is right by looking inward to universal and timeless rules derived from their religious belief, intuitions about “rightness,” and self-analysis. For this group, ethics is based on universal duties applicable to all [23], religious precepts such as Jewish, Christian, or Islamic ethics, intuition [23], and self-analysis [9]. Many forms of religious ethics, although collective in intent, nevertheless involve the individual’s perceiving a relationship to a god and are therefore individualistic in practice. For Ross, for instance, in answer to the question “Should I steal this software from my employer’s office to use at home,” the answer is “No” because of a universal human duty to protect the possessions of others, without which no organized society is possible. Jewish and Christian ethicists would also argue that theft violates the commandment “Thou shalt not steal.” Cynics respond, “So what?” Not everyone shares the same religion, and universal human duties do not exist.

**School 3: Collective Consequentialists**

Schools 3 and 4 differ from schools 1 and 2 in that they tell us to look about in the real world to discover empirically what is right and wrong rather than rely on rules supposedly “given” in the situation. Writers in both of these schools tend to be positivists: Look to the empirical effects of one’s actions, they argue.

The collective consequentialist school begins with Aristotle, who argued that we should study the actions, laws, and mores of different peoples and cultures and inductively arrive at a universal database of good actions, laws, and mores. The most powerful positivist position is that of the utilitarian John Stuart Mill, an

Eighteenth century writer. Utilitarianism advised us to take the actions that provided the greatest pleasure for the greatest number. Utilitarianism is based on empirical observation (what does in fact work and lead to the greatest pleasure), on consequences rather than absolute rules, and on the broader collectivity or community—what is good for everyone. Utilitarianism tells us not to follow rules blindly, but to maximize the pleasure or welfare of all.

A great deal of contemporary ethics of the last 20 years can be found in this portion of ethical space—the union of positivism, consequentialism, and macro (collective) analysis. Contemporary theorists have extended classical utilitarianism by moving away from hedonism and pleasure, instead focusing on social contracts and communities. Contractarians like Rawls [22] and Donaldson and Dunfee [4] argue that society could be seen as originating in a social contract in which free individuals chose principles of justice behind a “veil of ignorance” that prevented them from knowing their own position in society.<sup>2</sup> Under these circumstances, free people would create a society in which, to protect themselves against worst outcomes, they would insist on (a) the maximum amount of liberty consistent with like liberty for others, and (b) a distribution of wealth in which the worst off would be as well off as possible (the maximin principle). Based on these assumptions about the origin of society, Rawls argued for actions that empirically were consistent with the origins of society, e.g., maximized liberty for all and distributed wealth (and other good things) according to the maximin principle. The consequences of actions for the collectivity are decisive for Rawls and others in the contract tradition.

**O**ther theorists in this category are communitarians, who ask us to take actions that satisfy the preferences of all [10], and stakeholder analysts [6], who ask us to act impartially by taking into account the perspectives and interests of all, balancing those interests, and ultimately satisfying all interests to at least a minimal degree. Most commentators who have focused on ethics in various professions, such as law, medicine, and IT, and who recommend that professionals follow a collectively derived code of ethics fall into this school as well, because the collectivity—the profession—is the source of ethical advice and direction. The Hippocratic oath, which, among other recommendations, argues that

<sup>2</sup>Contractarianism illustrates the utility of retaining the phenomenology/positivism distinction. While the early collective consequentialists—the Utilitarians like Bentham and Mills—were definitely empirical, the more contemporary writers—contractarians—do not argue we should actually measure empirically the consequences of our acts. Instead they tend to argue it is in the very nature of the concept “society” that certain actions should be taken. They are drifting, in other words, into a phenomenological position.

doctors should at least do no harm, is a kind of stakeholder analysis in which the key stakeholder is the patient, and according to which the right action depends on an empirical analysis of the situation.

In answer to the question “Should an employer monitor the email of his/her employees using company equipment?” the answer would probably be “No,” because such actions are inconsistent with the principle of maximizing liberty for all and because it does not take into account the interests of the employee in having private communications even while on the job. Cynics would respond with the usual “So what?” They would argue that “maximizing liberty for all” is not the business of employers and that corporate interests must—under most circumstances—take precedence over individual interests.

Writers and scholars who focus on IT ethics typically fall into the school of collective consequentialists when they take ethical stands at all. The strong bias in the IT ethics literature is the following: When faced with an ethical decision, the individual should consult some larger collectivity—the person’s firm or professional society—for advice and should follow that advice [12, 14].

#### School 4: Individual Consequentialists

A very different kind of positivism is rooted in individual levels of analysis. Theories of institutional economists, such as Adam Smith, state that social welfare—at least in an economic sense—is best served if each individual, through analysis and experience, discovers his or her best selfish interest and then pursues that interest to the full. Here, good acts of individuals in any specific situation are those which have good consequences, like contributing to social welfare, and these good acts are found by empirically examining one’s situation, calculating one’s options for maximizing personal wealth, and pursuing the best option. The competitive market—the “invisible hand”—with its price mechanism, enters *deus ex machina* to resolve individual competition into collective maximum social welfare that benefits all [9]. Cynics would respond that the collective social welfare requires much more than rational self-interested individuals and would include moral understandings about property, commerce, and honesty, without which markets break down.

Among Internet aficionados, there is a strong libertarian ethic that argues that individuals should be able to “do what they want, when they want” and that the collective social welfare is advanced by the pursuit of a kind of minimally organized anarchy. In its moderate form this libertarian argument is a market-based, individual consequentialist position, but when carried to an extreme this argument may fall out of the ethical space we have described and turn into an amoral free-for-all with no connection to the collective social welfare.

In answer to the question “Should online services monitor the contents of discussion groups and censor

unruly members using inappropriate language?” the answer for this school would most likely be “No—as long as the behavior in question does not threaten to destroy the discussion group.” Any such regulatory actions interfere with individuals pursuing their self-interest, and regulating would lead to a decline in social welfare. Best to rely, they would argue, on self-regulation and peer pressure.

### Unifying Themes and Underlying Tensions

While there are many differences among ethicists, there are also unifying themes. Most classical and contemporary ethicists argue, for instance, that ethics involves the choices of free people who are informed and rational. All agree that under these

### Ethical Tensions Between Individual and Collective

In the ethics literature and in IT literature, there is a continuing tension between the individual and the collective. This tension can be seen in two areas: individual responsibility and the role of the individual in an evil society.

Regarding individual responsibility, ethicists do not admit the argument of “just following orders” as an excuse for unethical individual acts performed in the name of some larger organizational entity. Neither do they admit “forces of history” or other exceptions to accountability. There is no ethical “invisible hand” in the moral marketplace that relieves individuals of responsibility for their actions, and all action must be attributed to human agents. For IT ethics,

## *Is it possible for people to be ethical and good in an evil society or an evil organization?*

conditions, individuals are responsible, accountable, and liable, and that a good society is one in which due process obtains, that is, an impartial process exists for determining responsibility, accountability, and liability. These are not empirical matters to be discovered, but rather the logical conditions required for there to be any ethics, or debate about ethics, whatsoever [12, chapter 7].

### Bounded Ethical Rationality

Can good people take bad actions? Can good organizations commit unethical acts? How can these events happen if the correct process and method of ethical analysis are in place and used? Scholars have begun to recognize empirical limits to moral behavior. Among these limitations are (1) a bounded moral rationality, which limits the precision of calculating “best outcomes” [4], (2) uncertainty in new situations that require different responses from past ones, (3) situational specificity in which each situation is unique, so that the existing set of rules is inapplicable, and (4) opportunism caused by other actors “gaming” the situation, taking extreme positions that do not reflect their expected outcomes (especially harmful to consequentialist positions). Many of these limitations are the same as those posited in transaction economics [25], and the similarities are deliberate insofar as the moral contractor faces the same limitations as the economic contractor.

For an IT ethics, these are important considerations. They suggest, for instance, that good people and good organizations, following good procedures, will nevertheless make mistakes—perhaps more as technological environments become uncertain and new situations so commonplace. Nevertheless, individuals and collectivities remain accountable, and damages may be assessed for mistakes under these conditions.

these unifying themes are very important, for they mean that it is morally unacceptable to claim you acted, or something happened, “because the computer did it” or “the computer told me to do it.”

The tension between the individual and the collective can also be seen in situations where society (or other social activity) is immoral or amoral. Is it possible for people to be ethical and good in an evil society or an evil organization? What is the ethical meaning of the statement “He [She] was a good Nazi” or “She [He] is a good chess player?” Should a person follow “bad” or “evil” laws? Are all Americans now living responsible for the atrocities committed by American forces in Vietnam? Should individual white males pay reparations to individual white females in the form of jobs and wages to compensate for past discrimination against white females as a group? If society did something terrible, immoral, and wrong, what is the responsibility of the individual person, or his or her descendants?

Each of these difficult questions reflects the tension in all ethical thinking between the individual and the larger collectivity—the group, the organization, the society. For the most part, the ethics literature uses a language appropriate to biological, living, individual human beings. This language is not easily transferred to larger collectivities. For some ethicists, like Ladd and Friedman, all rational “formal organizations are not moral persons, and have no moral responsibilities, they have no moral rights” [14] and “there is one and only one responsibility of business...to increase its profits” [8]. The language of ethics in this view does not apply to organizations any more than it applies to, say, the game of chess and its players. For others, formal organizations are moral persons not merely because they are the subject of rights but because formal organizations act with intention and in accor-

dance with a formal, corporate decision structure [7]. Any organizations that meet the criteria of what is known as a “Davidsonian agent”—an intentionally acting entity—are therefore moral entities, which can be held responsible and accountable. Mobs and statistical groups, in this theory, are not moral agents. In this view, the statistical aggregate “white males”, may not be held responsible, accountable or liable for past discrimination against another statistical aggregate, “white females.” In contrast, an entity like the United States government could be held responsible for the actions of its agents now or in the past, because it fits the criteria for a Davidsonian agent [2].

The tension between individuals and groups is especially challenging for School 3—the collective consequentialists. This school is critically dependent

response of all industrial societies to vast increases in productivity brought about by modern technology has been to reduce the work week from over 60 hours in 1900 to less than 40 hours in 1986 [16]. Broadcast technology was tamed and regulated by the Communications Act of 1934. Technology, in other words, does not stand “outside” of society, acting upon it, but instead, technology—its manufacturers, benefactors, users—is a social phenomenon itself, subject to all the constraints of other social actors. Among these constraints is the notion of social responsibility: You can and will be held accountable for your actions.

Critical to our ethical understanding is the realization that IT does not have its impact on society like an iceberg colliding with a ship at sea on a stormy night [15]. Rather, more than 20 years of research on the

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on the larger collectivity providing guidance to individuals. But if the collectivity is evil, how then should individuals proceed? Reliance on “professional codes of conduct,” which may themselves be corrupted by professional self-interest, pose significant problems.

### Rejection of Technological Determinism

What is the moral significance of such statements as “Computers flatten hierarchies” or “Computers eliminate the need for middle managers,” or statements of the form “Computers do X” where X is any social consequent? From an ethical point of view, these statements are amoral, because they substitute impersonal forces—technology—for human agency. This way of thinking and speaking removes human agency from the events described. The actor in such sentences and thinking becomes an impersonal, nonmoral force, which acts on society presumably without human intervention. But are such assessments empirically correct? If so, we have a difficult situation: a real empirical world that is inherently amoral. But as it turns out, there is little support for these assessments in the area of IT or any other technology in human history.

An ethics of information systems is impossible without an understanding of how information technologies affect human choice, human action, and human potential. Societies do not stand naked before technological change, swept along before the tide, as some popular journalists intimate. Historically, societies react to technological change by mitigating its influence, civilizing the change, compensating injured individuals, attempting to restore balances struck over centuries. For instance, one major

relationship between organizations and IT has established that there is a two-way relationship between IT and organizations and society [13, 15, 19]. On the one hand, IT confronts individuals, organizations, and societies as an “objective” reality, providing obvious opportunities for action and constraints on its use at a particular moment in history, in a particular society. Organizations must cope, adjust, and adapt to these realities in order to survive. On the other hand, IT is a socially enacted phenomenon, in its design, use, and implementation. There are significant and meaningful voluntaristic—“subjective”—elements of information technology. Social actors make choices—sometimes alone and sometimes in larger macro cultures like trade associations, industry alliances, governments, and professional groups—about what goals the new technology will pursue, what meaning it has, how it will be implemented, and what ethical, social, and political consequences are tolerable, moral, and acceptable.

Empirically, just about anything can happen when computers are added to organizational life. Empirical research finds that computers can become icons or practical tools, can aid the existing workforce or decimate it, can expand the cognitive content of work or shrink it, can decentralize organizations or turn them into well-articulated and micromanaged hierarchies, and can add to productivity or have little impact [15]. Whatever result occurs is empirically the result of the participation of managers and other human beings in a decision-making structure.

Given these basic concepts of classical and contemporary ethics, what can we recommend as a beginning to specific IT ethics?


## Conclusion

What can practicing IT professionals, as well as students and scholars involved in IT affairs, learn from this discussion of basic concepts and schools of thought? What are the lessons for our day-to-day work, our research and teaching?

First, we can learn something from the cynics—those who continually raise the “So what?” question. We learn from them that no set of facts or suppositions, however eloquently stated, is sufficient to support an “ought” statement. This is an old lesson, first taught by the Scottish philosopher David Hume in the Eighteenth century, but worth remembering. Ethical action comes from the decisions of individuals based on personal conviction. We cannot rely on history, logic, empirical analysis, or the marketplace.

Second, as scholars, we must watch carefully the language we use to describe how IT and society interact. It is all too common, in the public press, the business press, and the academic journals, to talk about IT as some force outside of society that causes things to happen all by itself. Empirically there is little support for this proposition, and morally it is unsupportable. We should carefully examine statements on the order of, “Computers solve problems in education.” As scholars, we must strive to be more precise in our descriptions of these IT-society interactions.

Third, we must be prepared to continue struggling with the tension between individuals and collectives, especially for IT professionals employed by organizations. There is no remedy in ethics for this tension. The possibility of being a “good” person in an evil organization is quite real. Many of my students (working IT professionals) in a course on ethics write about situations where they were “forced” by their employer to commit some act they believed wrong. As a profession we should discuss these situations more openly, explore options more forcefully, and be prepared to offer some kind of support for professionals caught in these situations. The existing codes of ethics are just inadequate for this task.

Fourth, we must be more understanding as humans and IT professionals of the boundaries placed on ethical decision making. We should expect organizations and individuals to make mistakes, to do the wrong thing at the wrong time, with some frequency. Why? Because so many ethical situations involving IT are different from those of the past, offering new opportunities for both right and wrong action, and calculating consequences can be so difficult. This is not to say that mistakes should be tolerated or abided, but that individuals and organizations should be allowed to learn over time what is an acceptable and ethical response. Ethics, then, should be seen as a process of human understanding and reasoning, not as a static condition that is achieved. 

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