Computer Ethics - Thoughts to Consider

Computer Ethics
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Thought #1 - Why are the policy vacuums arising from computer and information technology sometimes difficult to fill?

When it comes to figuring out what the policies should be, we find ourselves confronted with complex issues and conceptual muddles that make it difficult to figure out which way to go. As we begin to sort out the conceptual muddles, we often find a moral landscape that is fluid and sometimes controversial.

Thought #2 - Why isn't law sufficient to fill all the policy vacuums?

Filling policy vacuums is not a simple process of applying known laws and principles to entities that can be subsumed under them. A good deal of negotiation is required to get the technology and the law or principle to fit. Our understanding of the Internet also illustrates the fluid rather than mechanical way that traditional norms and laws are extended to computer and information technology. To fill policy vacuums created by computer and information technology with traditional norms may prevent the creation of new ways of doing things. Filling policy vacuums is not only a matter of mechanically applying traditional norms and principles. Conceptual muddles have to be cleared up, often a synthetic process in which normative decisions are invisibly made. Moreover, as a normative account , the traditionalist position runs the risk of not taking advantage of the new features of, and new opportunities created by, computer and information technology. Hence, we need to move beyond the traditionalist account.

Thought #3 - What aspects of computing and computers support the claim that computer ethical issues are unique?

Computer technology has brought about the creation of new entities, which include programs, software, microchips, Web sites, video games and so on. Computer and information technology has changed the scale of many activities, arrangements, and operations. This includes the scale of data collection, calculations, and statistical analysis, as well as the scale of communication. The increased scale of calculations has facilitated the creation of more sophisticated machines such as robots, spaceships, and medical imaging equipment. Also, connected to increased scale is the inherent unreliability of computer and information technology. Another would be focusing on the power and pervasiveness of computer technology. While it has features in common with other technologies and while it may be

thought of as an extension of earlier calculating machines, nothing with the power and capabilities of computer and information technology ever existed before.

Thought #4 - Explain Deborah Johnson's (author of the text) claim that computer ethical issues are new species of generic moral issues?

The idea is that the ethical issues surrounding computer and information technology can be understood as variations of traditional ethical problems or issues. They involve familiar moral concepts such as privacy, harm, taking responsibility for the consequences of one's actions, putting people at risk, and so on. At the same time, the presence of computer and information technology often means that the issue arises with a new twist – a new feature, a new possibility. The presence of this new feature or new possibility makes it difficult to draw on traditional moral concepts without some interpretation, modification, or qualification.

Thought #5 - When human action is instrumented with computer and information technology, how is human action changed?

They physical events that occur when an individual acts in a computerized environment are different from those that occur when an individual makes the same movements in an environment with no computers. Computer technology creates a new instrumentation for human action, both for individual action and for institutional arrangements. The new instrumentation changes the character of some actions and enhances and facilitates others. It creates the possibility of actions and arrangements that weren't possible before.

Thought #6 - How do descriptive (empirical) claims and prescriptive (normative) claims differ? Give examples of each kind of claim.

Descriptive statements are statements that describe a state of affairs in the world. For example, "The car is in the driveway." And "Georgia is south of Tennessee." In addressing ethical issues and especially the ethical issues surrounding computer and information technology, it is quite common to hear seemingly factual statements about human beings. The following are descriptive statements: "Such and such percentage of people surveyed admitted to having made at least one illegal copy of computer software." "The majority of individuals who access pornographic Web sites are males between the ages of 14 and 35." "Such and such percentages of U.S. citizens use the Internet to obtain information on political candidates." "In all human societies, there are some areas of life that are considered private." These statements describe what human beings think and do. They are empirical claims in the sense that they are statements that can be verified or proven false by examining the state of affairs described. To be sure, it may not be easy to verify or disconfirm claims like these, but in principle it is possible. Observations can be made, surveys can be administered, and people can be asked, and so on.

In contrast, philosophical ethics is normative. The task of philosophical ethics is to explore what human beings ought to do, or more accurately, to evaluate the arguments, reasons, and theories that are proffered to justify accounts of morality. Ethical theories are prescriptive. They try to provide an account of why certain types of behavior are good or bad, right or wrong. Descriptive statements may come into play in the dialectic about philosophical ethics, but normative issues cannot be resolved just by pointing to the facts about what people do or say or believe. For example, the fact (if it were true) that many individuals viewed copying proprietary software as morally acceptable would not make it so. The fact that individuals hold such a belief is not an argument for the claim that it is morally permissible to copy proprietary software. You might wish to explore why individuals believe this to see if they have good reason for the belief. Or you might wish to find out what experiences have led individuals to draw this conclusion

Thought #7 - What is ethical relativism? What is its positive claim? What is its negative claim?

Ethical Relativism - Ethical relativism is the position that there are no moral absolutes, no moral right and wrongs. Instead, right and wrong are based on social norms. Some have heard of the term situational ethics which is a category of ethical relativism. At any rate, ethical relativism would mean that our morals have evolved, that they have changed over time, and that they are not absolute.

Positive Claim – Something asserted. The positive claim of relativism is that right and wrong are relative to your society.

Negative Claim – Something denied. The negative claim of relativism is that there are no universal moral norms.

Thought #8 - What is utilitarianism?

Utilitarianism is an ethical theory claiming that what makes behavior right or wrong depends wholly on the consequences. In putting the emphasis on consequences, utilitarianism affirms that what is important about human behavior is the outcome or results of the behavior and not the intention a person has when he or she acts.

Thought #9- Why can't happiness be the highest good for humans according to deontologists?

The fact that we are rational beings, capable of reasoning about what we want to do and then deciding and acting, suggest that our end (our highest good) is something other than happiness.

Thought #10 - How can rights be based on deontological theory? How can rights be based on utility theory?

Based on deontological theory, the categorical imperative requires that each person be treated as an end in himself or herself, and it is possible to express this idea by saying that individuals have "A right to" the kind of treatment that is implied in being treated as an end. The utility theory argues to create or recognize legal right. They do not argue to the effect that human beings have a natural right.

Thought #11 - What is special about acting in a professional role?

Professional roles often carry with them special rights and special responsibilities. Sometimes professional rights and responsibilities are so special that they are exceptions or additions to ordinary morality.

Thought #12 - What is meant by the "efficacy" of professionals?

The power to affect the world! Professionals are able to do things that others do not have the capacity to do. Knowledge and skill are important parts of the efficacy of professionals, but they are not all of it, for mere possession of skill and knowledge is not enough to produce an effect. You must exercise the skill and use the knowledge, and in most professions this cannot be done in isolation. So, individuals acting in professional/occupational roles affect the world (they are efficacious) when they exercise their skills and knowledge in a context in which their actions have an effect. Because professionals have this efficacy, they bear special responsibility.

Thought #13 - What characteristics are usually associated with professionals?

- Mastery of an Esoteric Body of Knowledge
- Autonomy
- Formal Organization
- Code of Ethics
- Social Function

Thought #14 - Is computing a profession? What are the arguments for? What are the arguments against?

Computing is a profession with a number of sub fields. Whether or not computing is actually based on mastery of an esoteric body of knowledge is a matter of contention. Some argue that computer science does not yet have its own body of knowledge; it relies on other fields (e.g., mathematics, engineering, and physics). Others argue that computing does not really rely on a systematic or abstract body of knowledge and in this sense the body of knowledge on which it draws is not esoteric; rather computing relies on knowing how to do things. It is more application than science.

Thought #15 - What is valuable about loyalty? What is problematic about loyalty?

Loyalty is a good thing insofar as it allows us to have special relationships that are extremely valuable. The problems with loyalty are that it invites unfairness, it eschews reliance on good reasons, and it invites irresponsibility.

Thought #16 - What are the three categories of problematic behavior on the Internet according to the author?

1. Hacking. For example, gaining unauthorized access to computer systems.
2. Criminal Behavior. Stalking and Extortion are good examples.
3. Netiquette. For example, informal conversations that promote effective, civil, or pleasant interaction online.

Thought #17 - What are the four arguments that can be given in defense of hacking?

1. The argument to the effect that all information should be free.
2. Break-ins illustrate security problems to those who can do something about them.
3. The argument used in defense of gaining unauthorized access to computer systems, is that breaking into a computer system does no harm as long as the hacker changes nothing. And, if the hacker learns something about how computer systems operate, then, something is gained at no loss to anyone.
4. Finally, hackers used to argue that they would help Big Brother at bay. The thrust of this argument is that computers and information technology are being used to collect information about individuals and to do things to individuals that they don't want done. Hackers have the computer savvy to find out what is going on and tell us about it. Hackers are good vigilantes.

Thought #18- Is there a morally significant difference between crimes committed on the Internet that can also be committed without the Internet?

Online crimes involve physical movements different from their offline equivalents. The Internet creates a new instrumentation for familiar or common crimes. This is not all it does, but it does not exactly thrust us into entirely unfamiliar moral territory; rather the new instrumentation allows us to do things in new ways and calls on us to think about what the new capabilities mean for our moral ideas, our moral values, and principles.

Thought #19 - What is Netiquette?

It is the "dos and don'ts of online communication" or "informal rules of the road", or "common courtesy online".

Thought #20 - What is flaming and spamming?

Flaming is to send inflammatory or insulting messages via e-mail or in other forms of online communication such as chat rooms. Spamming is to send unsolicited bulk e-mail.

Thought #21 - How has computer and information technology changed information gathering practices?

Because computerized information is electronic, it is easy to copy and distribute. Now that computers are connected via telecommunication lines, information can go anywhere in the world where there are telephone lines. Hence, the extent to which information can be exchanged is now practically limitless. Once information about an individual is recorded in a machine or on a disk, it can be easily transferred to another machine or disk. It can be bought and sold, given away, traded, and even stolen. The information can spread instantaneously from one company to another, from one sector to another, and from one country to another.

Thought #22 - Why is information about individuals so important to organizations? Give examples of the uses of personal information by private and public organizations.

Information is created, collected, and exchanged because organizations can use it to further their interests and activities. Information about individuals is used to make decisions about those individuals, and often the decisions profoundly affect the lives of those individuals whom the information is about. Information about you, stored in a database, may be used to decide whether or not you will be given a loan; whether or not you will be called to the police station for interrogation, arrest, or prosecution; whether or not you will receive education, housing, social security, unemployment, compensation, and so on. In general, those who want information about individuals want it because they believe that it will help them to make better decisions. For example, banks believe that the more information they have about an individual, the better they will be able to make judgments about that individual's ability to pay back a loan or about the size of the credit line the individual can handle. The FBI's National Crime Information Center (NCIC) provides criminal histories of individuals to all states. Law enforcement agencies justify the existence of this database on the grounds that the more information they have about individuals, the better they will be able to identify and capture criminals. Also, the NCIC lists the names of all individuals who are prohibited to own firearms. This is very handy for companies who sell guns for hunting. The name of the individual, who is trying to purchase a gun, must be run through the NCIC before the sale can be completed. This is the law's way of keeping guns out of the hands of those who may use them for the wrong reasons.

Thought #23 - What arguments can be given for the importance of personal privacy?

The most important arguments on behalf of privacy as an instrumental good have focused either on its being necessary for special relationships or on its being necessary for democracy. People need to control information about themselves in order to maintain a diversity of relationships. Privacy is important because it allows us to maintain a diversity of relationships. We control relationships by controlling the information that others have about us.

Thought #24 - Why does the author claim that current information gathering practices makes personal privacy too costly to individuals?

Because we are building a panopticon in which everything we do is observed and could come back to haunt us. Also, information can be tampered with, identity can be stolen, and what you do in your past can limit what you will be able to do in your future.

Thought #25 - Describe the difference between hardware and software.

Hardware refers to the machine, a malleable machine with practically infinite possible configurations. Software refers, essentially, to a set of instructions for the machine. Software controls and configures the machine.

Thought #26 - Explain the kind of protection offered by copyright, trade secrecy, and patents. What are the advantages and disadvantages of each for developers of computer software?

Copyright – This protection is rooted in the United States Constitution where article I section 8, clause 8 specifies that Congress shall have the power "To promote the Progress of Science and useful Arts, by securing for limited times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." The Copyright Act protects "original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device." (17 U.S.C. Section 102 (a) (1995)

- **Advantage** – Others are not permitted to reproduce a copyrighted work, distribute copies of it, or display or perform the copyrighted work publicly, without first obtaining permission from the author (copyright owner). Copyright protection extends the term of coverage to the life of the author plus 70 years.
- **Disadvantage** – Copyright protection is limited and poses complex issues of interpretation when it comes to computer software. The problem seems to be that the distinction between idea and expression is not suitable for software. Software is like literary works in being expressive, but is unlike literary works in that it is also useful

(functional). Software behaves; it performs a task in a determinate way. The behavior of software is valuable and that value is not protected by copyright.

Trade Secrecy – These laws vary from jurisdiction to jurisdiction but in general what they do is give companies the right to keep certain kinds of information secret.

- **Advantage** – Trade secrecy offers a strong form of protection insofar as it allows the owner to keep software out of the public realm
- **Disadvantage** – Software has to be put into the public realm in order to be sold or licensed, therefore causing the software not to be a secret anymore. Once this happens it is not possible to use trade secrecy.

Patents – Patents offer the strongest form of protection for software because a patent gives the inventor a monopoly on the use of the invention. It gives the patent holder the both the right to exclude others from making, using, or selling the invention and the right to license others to make, use, or sell it.

- **Advantage** – Even if someone else invents the same thing independently, without any knowledge of the patent holder's invention, the secondary inventor is excluded from use of the patented device without permission of the patent holder. A patent is a legitimate monopoly.
- **Disadvantage** – Patent protection does not guarantee that individuals will be rewarded for their inventions. It provides a form of protection that is a precondition of reward. In other words, if you have a monopoly and if your invention has commercial value, then you (and no one else) will be in a position to market the invention. By assuring the possibility of reaping rewards, patent protection encourages invention and innovation. Allowing inventors to profit from their inventions is a means, not an end.

Thought #27 - What is Locke's labor theory or property? Why doesn't it necessarily apply to ownership of computer software?

According to Locke, a person acquires a right of ownership in something by mixing his or her labor with it. This has several flaws when it comes to computer software. The argument is careless in the way in connects ownership to labor. Also, we have to distinguish tangible and nontangible property. Even if the labor theory applies to tangible property, it does not apply to intellectual or nontangible things. Software is a new species of nontangible, reproducible entity.

Thought #28 - What are the consequential arguments for and against ownership of software?

Against – Some of the early legal literature and several early court cases concerning the ownership of software focused on the idea that a patent on a program might violate "the doctrine of mental steps". This doctrine states that a series of mental operations, like addition or subtraction, cannot be owned. Concern was expressed by lawyers that ownership of software might violate this doctrine because computers perform, or at least duplicate, mental steps. The fear was that as patent holders used their patents to stop infringements, the effect might be that the patent holder would come to be seen as the owner of the performance of certain mental steps.

For – If you take away ownership, companies will not invest their time, energy, and resources to develop and market software. Innovation and development will be impeded, even brought to a standstill. Software will not be developed unless there is an incentive to create it, and it presumes that the only incentive to develop software is to make money. If there is no potential to make money from software development, there sill be no software developed. The argument for the good consequences of ownership is that giving the protection of copyright, trade secrecy and patents will encourage invention, innovation, new products and creative expression.

Thought #29 - What arguments support the claim that software copying is immoral? What arguments support the claim that software copying is not immoral?

Immoral – It is illegal!!! It is prima facie wrong to make an illegal copy of proprietary software because to do so is to deprive the owner of their legal right, and this is harm to them.

Not Immoral – It may be justified, namely when some serious harm can only be prevented by making an illegal copy of a piece of proprietary software and using it. The case for the moral permissibility of software copying would be stronger if the system of software ownership were shown to be unjust or if all property rights were shown to be unjust.

Thought #30 - Identify and describe the four different meanings of responsibility.

1. **Role-responsibility** – Here responsibility is interchangeable with duty and refers to what individuals are expected to do in virtue of one of their social roles.
2. **Casual responsibility** – Sometimes when we say that an individual is responsible for an untoward event, we mean that the individual did something (or failed to do something) that caused the untoward event. The person is responsible here simply in the sense of being the cause.

3. **Blameworthy** – This is generally connected to doing something wrong or being at fault. That is, the attribution of responsibility is made on the basis of a judgment that a person did something wrong and his or her wrong doing led to an untoward event or circumstance.
4. **Liability** – This is most often used to refer to the way certain situations are treated legally. To be legally liable is to be the person who, according to law, must pay damages

Thought #31 - Give examples (hypothetical and real) of dishonesty in selling software.

Coercing the buyer by lying about what the software is capable of, treating the buyer merely as a means, and manipulation.

Thought #32 - Explain Prince's argument for treating mass-market software as a product and the sale of customized software as provision of service.

A customer can go to a computer store and buy a mass-marketed software package. The software is not supposed to be modified. It may be designed to give the user options, but the user is not expected or allowed to change the underlying code making the software do what it does. A person or company can hire a person or company to design and produce a computer system specifically for his or her use. The system will be designed and made to do precisely what the customer specifies, to meet the customer's special needs. A person or company can buy a software system and hire someone or a company to modify it to fit his or her special needs and circumstances. Prince's suggestion means that the mixed case should then be treated as mixed. If there is a defect in the mass-marketed part, product law should be brought to bear; if an error is made in the process of modification, law dealing with services should be brought to bear.

Thought #33 - How did time come into play in responsibility for the Y2K problem?

The time factor comes into play because the original inventors of computers don't seem to have done anything worthy of blame. At the time, they had no idea of the extent to which computers would come to be used. They were concerned with conserving space and their initial calculation seems reasonable. In other words, it would be hard to show that they were negligent in the decisions they made.

Thought #34 - How do computers diffuse accountability?

The scale and complexity of some computer systems, the "many hands" involved in developing, distributing, and using them, and the way in which computer systems sometimes mediate human decision making .

Thought #35 - Identify and explain at least three broad issues about technology and social change that often underlie discussions of the social implications of computer and information technology.

1. Social Revolution – The social changes taking place today that are contributed to computers and information technology and the Internet are often compared to the Industrial Revolution or to other times in history when very comprehensive and fundamental changes occurred. For many, social revolution means a change in political structure or a change in the distribution of power. For others, a social revolution means a change in how individuals think about themselves (e.g., what it means to be a human being). Yet for others, it has to do with the economic base of society.

2. Status Quo – This issue has to do with when and to what extent technological change entrenches social patterns that already exist rather than causing social change. This issue is related to the question of revolutionary versus ordinary change in pushing us to identify and make explicit what is and isn't changing.

3. Technology - Another issue that is likely to arise in discussions of the social changes being wrought by computer and information technology is whether technology is good or bad. Technology may be seen by some to be the panacea, the solution to all of our problems, while others are more distrustful of technology.

Thought #36 - Describe the three arguments that support the claim that the Internet is a democratic technology.

1. Unmediated, Many to Many Interaction – The novelty and power of the Internet is that any individual (who has access) can, in principle, talk directly to any and every other individual (who has access).

2. Information is Power – This argument plays on the idea of power moving to the many, but here the Internet is seen as democratic because it gives power to the many.

3. More Power to the less Powerful – The Internet is democratic because it gives power to the less powerful and takes power away from the more powerful.

Thought #37 - For the three arguments that support the claim that the Internet is a democratic technology, explain why the author is reluctant to support the arguments.

The arguments are problematic because of what they fail to acknowledge (not in what they affirm). While the Internet facilitates the patterns of behavior described in the arguments, it also facilitates other patterns of behavior. Some of these other patterns of behavior are neutral to democracy and yet others are undemocratic.

Thought #38 - Why is access to the internet important for democracy?

 Unequal access poses a serious threat to democracy. Democracy is a form of government that recognizes individuals as an ends in themselves insofar as it gives individuals a significant degree of freedom and control over their own lives. Moreover, it gives individuals a say (even if indirect) in decisions that lead to laws and

Thought #39 - Why do computers affect the relationship between haves and have-nots? Explain.

Because it is a powerful resource for achieving knowledge and widening the gap between them.