

Ethics of New Technologies

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INTRODUCTION

Information processing has been done through telling stories, drawing on cave walls, writing on parchment, printing books, talking on telephones, sending messages via telegraphs, broadcasting on radio and television, processing data in computers, and now by instantaneous network dissemination. Since the mid-1990's, personal computers have been the instrument of choice for sending and receiving information, and for processing much of it. The technology is the latest in a long series, but social issues involved have not really changed. Issues of content (is it true? obscene?), ownership (whose picture/text/idea? whose parchment/telephone system/computer?), and impact (anti-government, anti-social, harmful to children) appear today just as they did hundreds or thousands of years ago.

BACKGROUND

New technologies enable people to do new things (send 20 copies of a memo at once) or to do old things in new ways, such as storing files (Freeman & Soete, 1997). Improvements in technology that are incremental do not usually introduce major social issues, but radical innovations frequently present new kinds of social opportunities and threats (Brown, 1997). Ethics is the branch of philosophy that studies interpersonal or social values and the rules of conduct that follow from them. Ethics deals with questions of how people should treat each other on a basic level (Berlin, 2000). It considers such issues as rights and duties and fairness or justice. Because ethics concerns itself with fundamental rules, its applications to specific new technologies might require both knowledge of the new technology and reasoning about its possible applications based on established principles of ethics (Burn & Loch, 2001; Halbert & Ingulli, 2002).

Philosophers have pondered and written about issues of ethics for thousands of years. Some of their writings on this subject continue to be read and debated generation after generation (LaFollette, 2000). Three basic approaches have been most common and most accepted in discussions of ethics.

- Utilitarianism maintains that the ethical act is the one that creates the greatest good for the greatest number of people.

- Rights and duties maintain that the ethical act is the one that acknowledges the rights of others and the duties which those rights impose on the actor.
- Fairness and justice hold that the ethical act is the one that treats similarly situated people in similar ways with regard to both process and outcome.

ETHICS AND TECHNOLOGY

John Stuart Mill and Jeremy Bentham are the two philosophers most closely associated with utilitarianism. This view of ethics puts a high value on results, and holds that we must consider whether and to what degree our actions will bring pain or pleasure not only to ourselves but to all others who will be impacted by what we do (Frey, 2000; Mill & Bentham, 1987). A utilitarian would argue that the harm done to many individuals and businesses by viruses and worms far outweighs any happiness brought to their authors, and thus creating and disseminating such code is unethical. Similarly, a utilitarian analysis of music file-sharing would consider whether widespread free file-sharing might result in composers and artists deciding that it is not in their financial interest to continue writing and performing music. If this result occurred, not only the composers and artists but also their listeners would end up suffering harm that might outweigh the good that they enjoy from free file-sharing. Finally, a utilitarian analysis would favor products and policies that increase the spread of computer literacy and availability, since the Internet can bring great good to its users and computer literacy and availability makes such use possible.

Many philosophers have written about rights and duties (Sumner, 1987). The basic idea of this approach is that individuals do have rights, and that these rights are, practically speaking, worthless unless someone or some group has a corresponding duty. Thus, if I have a right to privacy, you have a duty not to monitor my every move (Kelly & Rowland, 2000). There are four basic sources of rights, and we will consider each in turn.

Human rights are possessed by every human, simply by virtue of being human. Among these rights are the right to live (not to be randomly killed), to be told the truth, to own property, and to basic dignity (Ignatieff, 2001). Among these, the one that most often causes confusion is the right to be

told the truth. Humans could not interact with each other in any meaningful way if lying and truth-telling were equally valid. Promises, contracts, and interpersonal relations all depend on the fact that the default setting for conversation is truth-telling. This does not mean that everyone always will or even should tell the whole truth all the time. It does, however, mean that we can and do start with an assumption of truth-telling (Bok, 1999). A right to property, whether physical or intellectual, means that others have a duty not to take or use my goods without compensating me.

Since property rights are human, they apply whether a given country's laws regarding such things as copyright and intellectual property are specific on a given issue or not. Music companies and movie studios, on behalf of individual artists, have a right to control and charge for distribution of their products. This right imposes a duty on individuals not to take such property without paying for it and recognizing the terms of distribution. Similarly, software companies have a right to charge for and control the distribution of their intellectual property. They paid programmers to develop a software product; others have a duty to respect the rights to this intellectual property.

Some rights are given to individuals by law. These citizen rights come by reason of membership in a community (nation, state, county, etc.). The right of citizens of the United States to free speech is not recognized by some other countries. Typically, dictatorships grant few citizen rights to those under their rule. These rights often coincide with human rights (right to live, to property, etc.) but frequently go beyond basic human rights. Copyright, as it exists in the United States, is not recognized equally in all countries. This is why it is important that the basic right to own property is a human right—it is valid whatever the laws of a particular jurisdiction.

A third source of rights is position. Policemen may apprehend and incarcerate suspected criminals. CEO's can speak for their companies on many issues. Purchasing agents can spend a company's money on goods or services within some limits. Managers can set rules for computer usage at work. People have these rights not just because they are human, or because they are particularly wise or knowledgeable, but because of the position they occupy. Since individuals have these rights, others have duties to respect the rights and follow their direction.

The fourth and final basic source of rights is by contract. Individuals or organizations can agree to contractual relations that create rights and impose duties that would not otherwise exist. If I agree to pay a certain amount of money each month in order to use an online service, I have a duty to pay and the service provider has a duty to make the service available to me under the terms of the contract.

The third basic approach to ethics is fairness and justice: it is ethical to be fair and unethical to be unfair. It is not fair that some individuals should purchase software and others obtain

it free through sharing or piracy. It is fair for those who invest time, talent and money in producing software to be paid for the products resulting from their efforts and investments by all of those who use them, not just by some. Issues of fairness sometimes arise in the area of using computer technology for purposes of employee monitoring (Alder, 1998). In general terms, fairness involves treating similarly situated people in similar ways with regard to both process and outcome. However, justice is sometimes defined as equality, and at other times, as based on contribution, on needs and abilities, or on maximum freedom (Velasquez, 2002).

An issue that often arises in considering fairness and justice is the question of which individuals or groups are similarly situated. In the sense that all who access the Internet can view unrestricted sites, all who access the Internet are similarly situated. In the sense that some who access the Internet may choose to view pornography and others may choose not to (even inadvertently), we have at least two groups that are not similarly situated. Using this approach, one might argue against unrestricted availability of pornography on the Internet, but in favor of restricted access to Internet pornography. All who receive e-mail might be viewed as similarly situated. Spam reaching all e-mail accounts thus reaches similarly situated people. However, if most individuals who receive e-mail do not wish to receive spam, then this group (the unwilling) might be seen as not similarly situated with those who do wish to receive it. Such an argument could serve as the basis for something like an e-mail equivalent of the do-not-call list recently introduced for telemarketing.

The different approaches to ethics often produce the same result. If we consider the issue of hacking or gaining unauthorized access to another's system, utilitarianism concludes that more harm than good results from this activity. Those whose system is wrongfully accessed are faced with revising controls, checking to see what harm if any has been done, and correcting any problems caused by the hacking. Only the hacker gains. Those who have created or purchased the system have a right to limit access; the hacker has a duty to respect this right. It is not fair or just that some people go through the appropriate authorization to access or use a system while others hack into it. Thus from all three perspectives, hacking as defined can be judged unethical. If one does not accept the basic premises of the prevailing capitalist system, however, a defense of hacking can be devised (Halbert, 1994).

When the three approaches provide different results, rights and duties usually prevails as a way of determining whether an act is ethical, because rights are so basic. However, this is not always the case. In American copyright law, there is a "fair use" provision that allows an individual to make one copy for personal use of a copyrighted article without obtaining permission of the copyright holder. Whether this copy is made from a printed article on a photocopy machine

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