Computer Scientists and Ethics (Part II)

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Topic to be considered:

1. Business ethics;
2. Intellectual Property ethics;
3. Patents;
4. Evolution of IP laws;
5. Workplace ethics;
6. University and Plagiarism;
7. Conclusion.
The heart pacemaker: A device that has a timer that resets itself every time the patient's heart beats. If the heart does not beat on schedule (say, within 1.2 seconds), the pacemaker gives a stimulus that causes a heartbeat.

It's 1975, and you are on the board of directors of a company that makes transistors. Among the many companies with whom you have a contract is one that makes heart pacemakers.

Pacemaker technology is in its infancy. When doctors implant a pacemaker, the patient relies on the device. If it fails, the patient's heart stops. Doctors are not very adept at installing the pacemakers, which are extremely delicate; there is even a story of a person yawning deeply, pulling the pacemaker wire in his chest, and dying.

After that and many similar incidents, the board begins to reconsider whether your company should sell to the pacemaker company. Members of the board feel this situation is a major lawsuit just waiting to happen and your company, as well as the company you supply, will be liable. In addition, you feel the specs the pacemaker company uses to test the transistors are not very strong.
The Case of the Sole Remaining Supplier

- You and the board decide to get out of the business before it’s too late. You tell the pacemaker company representatives about your conclusion, and they respond, "You can't stop selling us the transistors. You are the sole remaining supplier for us. Everyone else has backed out for the same reasons you're giving. If you don't sell us the product, we'll go out of business. Pretty soon, no one will be making heart pacemakers, and many people need them. Without the pacemaker, people don't even have a chance."

- You take that information back to the board. People around the table have different opinions.

- One person says, "This is a bad deal, and it isn't our problem. We don't make enough on this sale to make the risk worthwhile."

- Another person says, "We don't know how other companies use the transistors we sell them; why should we be concerned about this one? What about that baby who died when the transistor in the incubator failed? We didn't know how that company was using the transistor."

- Another person says, "I think we're missing the real issue here. Don't we have an ethical obligation to sell the product to the pacemaker company? What will happen if we don't sell to them?"

- Another person says, "Give me a break. Our only obligation is to our shareholders. And how did we get so stupid that we're the last source? I'm telling you, we don't need this." Finally, the chair of the board says, "OK. Let's make a decision."

What do you do?
The Case of the Sole Remaining Supplier

- They took seriously their responsibility and duty to protect the rights of people who needed pacemakers.
- At the same time they balanced their fiduciary responsibility to the current company.

**HOW?**

- They continued to sell to the pacemaker company.
- But they also instructed their engineers to develop more rigorous testing and technical standards they could hold the other company to.
- They reserved the right to stop selling if the other company did not improve its technical standards.

They took steps to be sure they did not have a legal liability down the line and then turned it over to the other company to improve the quality of its products.
The Case of the Sole Remaining Supplier

- They felt it was unfair to single out the industry because it was new and standards were developing.

- They felt they were showing compassion without sacrificing business. In this way they felt that they were serving the common good, protecting people's rights to a promising new medical technology, the pacemaker.

- They understood that "doing the right thing" did not have to be stupid, and that they could both do the right thing and do well for the company ("DO RIGHT" AND "DO WELL," rather than having to choose one or the other.)
(2) Intellectual Property

- World Intellectual Property Organization’s guidelines (June 2000)
- Intellectual property (or also called IP) is a form of intangible property that comes from the creative endeavors of the mind.

- Items considered to be intellectual property are:
  - inventions
  - literary and artistic works - books, plays, films, musical works, drawings, paintings, photographs, sculptures
  - trademarks such as symbols, names, images, and designs used in commerce
Intellectual Property

- Those who have created intellectual property are viewed as possessing legal ownership of this property and their rights are protected by copyright. Some of these rights are highlighted here:
  - For a specific time, which can be the author's life time plus 70 years, the laws give the creator the exclusive privilege to make copies, perform, broadcast, or record for publication and sale.
  - These privileges can be sold or transferred to other people or corporations.
  - If you infringe on a copyright by stealing information, the holder of the copyright can sue you.
Main kinds of intellectual property: **patents, copyrights, trademarks**

- **A patent** is an exclusive right to make, use, and sell a new and useful process machine, composition of matter. Patents last 20 years and cannot be renewed. Once they lapse, the invention enters the public domain and then anyone can make, use, or sell it. As an employee, you need to make sure that you protect your company's patented materials.

- **A copyright** gives the owner of a work the ability to block unauthorized copying or public performance of the work. Use of copyrighted material requires permission from the owner, proper citation, and reference. A basic understanding of copyright is necessary because you use information from a variety of sources whether digital, written, or in other forms to do your job. Likewise, you may create copyrighted materials for our employer or be in a position to protect copyrighted information that belongs to the company. As an employee, you are expected to obey copyright laws and to protect the copyrighted works of the company.

- **A trademark** is a distinctive symbol, work, letter, number, or picture that is adopted and used by a manufacturer to identify his or her goods. Trademarks can be registered with the U.S. Patent and Trademark Office and lasts for 10 years. Trademark protection protects businesses from competitors who try to use the identity, good name, and reputation of that business for their own gain. It also helps prevent the fraudulent marketing of goods or services to appear they are the goods or services of another more reputable businesses.
The Intersection of Copyright and Computers

- It is widely known that producing photocopies of a textbook, for example, and distributing them to others is not lawful.
- But what of computer programs in the form of software? Is software protected, just as literary works, from unlawful distribution? Yes! In fact, computer programs, according to the WIPO Copyright Treaty, are protected exactly as literary works are protected under Article 2 of the Berne Convention for Protection of Artistic and Literary Works.
- This means that the copyright privileges that literary and artistic works enjoy extend to computer programs as well. Therefore, only the owner of the copyright itself enjoys the exclusive right of authorizing the making available to the public of copies of the computer program in question.
Fair Use

- To legally use someone else's intellectual property you must seek, and often pay for, that person's permission.

- However, as an academic community, a part of the copyright law known as "fair use" saves us from being forced to ask every author or company for permission to quote or use small amounts of material.
Fair Use

- The copyright law allows everyone, under certain circumstances, to reproduce parts of copyrighted works. The purposes included are:
  - for criticism and comment,
  - for news reporting,
  - for teaching (including multiple copies for classroom use), scholarship, or research.

- While there is no simple test, and the courts will decide in the end, the law lists four factors to be considered when deciding if part of a copyrighted work can be used fairly. The factors are:
  - (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
  - (2) the nature of the copyrighted work;
  - (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole;
  - (4) the effect of the use upon the potential market for or value of the copyrighted work.

- Copyright Law of the United States. Circular 92. Sec. 107
(3) Patents

- What can you patent?

- Many invention submission companies tell people that they can patent ideas, which is simply legally incorrect and may indicate a scam.

- The Copyright Law, **does not protect ideas**. This means that once work has been made public, nothing in the copyright laws prevents others from developing another work based on similar principles, or ideas. Only devices and processes can be patented. Thus,

  - **copyright** protects expression;
  - **patent** law protects inventions such as devices and processes;
  - **neither** protect ideas. In both cases the idea is the first critical step, but without some identifiable **embodiment of the idea** there can be no intellectual property protection.
You, Copyrights and Patents

- With respect to copyrights, the best thing you can do is simply start writing, drafting or otherwise creating your work. A copyright exists immediately upon the original creation and fixation thereof. You do not need to do anything special to claim a copyright... you can immediately place the c in a circle and call the work copyrighted. Nevertheless, in order to sue for infringement you will need to have a federally registered copyright.

- With respect to patents, many people will have great ideas, but will not be able to put that idea into a package appropriate for a patent because there is no invention, only a concept. Conception is an important concept in patent law because in the United States it is the first person to invent that will ultimately receive the exclusive rights on an invention, but an idea must be converted to an invention through giving it an embodiment.
You, Ideas and Patents

- If you want a low cost solution to starting the patent process you should really consider a **provisional patent application**.
  - Does not require special form, formulated claims, background of the invention, and gives you a chance to file a patent within a year.
- A way to protect your ideas before patenting: get recipients to sign a **Confidentiality Agreement**.
  - Then they will be promising not to use your idea without your permission.
  - You are extracting a promise and if the person breaks that promise you can sue them for breach of contract.
  - Getting folks to enter into such agreements is sometimes quite difficult.
- While manufacturers and suppliers are normally familiar with and willing to sign, those who you approach about funding (i.e., venture capitalists and angel investors) are likely to reject the notion of signing. Similarly, if you approach a company in hopes that they might be interested in acquiring or licensing your invention, they are almost certainly going to refuse to sign a confidentiality agreement. This is because signing a contract that says they need to keep your idea confidential only opens them up to liability.
- Still further, investors and companies that might otherwise be interested in reviewing your invention are likely to be uninterested at least until you have some type of patent application pending, whether it is a **provisional patent application** or a **patent application**.
  - This is true because those who do not file patent applications and just submit ideas are far more likely to wrongfully claim that an investor or company has stolen their idea.
(4) Evolution of IP laws

**EXAMPLE:** Caching

- simply means the copying and storing of web pages. This process can occur at two different levels:
- it can be performed by one's own browser (recently visited web pages are only recalled from memory when visiting them again), or it can be performed by the server of one's Internet Service Provider. Such providers may store the most frequently visited web pages on their servers and make only the copies available to the users. But is caching (which in a sense defies copyright laws) at all legal?

- Well, it might seem so. After all, surfing the Internet is about speed, and caching allows data to be retrieved faster by users. Therefore, from this perspective, it has positive results. But are there any adverse effects?

- Unfortunately, yes. Caching interferes with web sites' analysis of their users, and even worse, users seeking real time information (such as stock market quotes, for example) do not have access to an updated web page, but rather only the cached copy.

- Because of these arguments, it is not yet clear whether caching should be allowed under the present copyright laws. Therefore, it remains controversial for now. [Schlachter, Eric "Cache-22." IP Magazine. Summer 1996 (Jun. 1999)]
(5) Workplace Ethics

- As far as workplace ethics goes, employers must do their part to make ethical expectations clear and trust the employee to deliver.

- There should not be a disconnect between the work ethics that employer has and the work ethic of the employee.

- The workplace ethics training is essential. Clarity in ethics training is the key.
  - If the ethical issue is black and white, the employer must leave no room for interpretation.
  - If the issue relies on human judgment, the expectation must be logical and be grounded in principle.

- Common mistakes:
  - some employers cloud expectations in vague concepts to accommodate gray areas,
  - others promote distrust by controlling every aspect of the employee's existence.
Workplace Ethics

- Expectations shouldn't be burdensome, attainable only by saints.

- Having unattainable expectations with regard to ethics in the work of people makes criminals out of perfectly good people.

- The fewer rules the better. People will be more compliant in a work place ethics atmosphere of freedom governed by principle rather than oppressive restrictions.

- The system of dealing with ethical problems must show respect and due process to people involved.
Integrity At Work

Essential values every company must promote:

- **Honesty**: truthfulness, sincerity, or frankness

- **Integrity**: adherence to moral and ethical principles;

- **Responsibility**: Blaming others, claiming victimhood, or passing the buck may solve short-term crises, but refusal to take responsibility erodes respect and cohesion in an organization.
You and Your company’s *Intellectual Property*

- **You are responsible for your company's Intellectual Property Protection.** If you are granted access to sensitive information, you are obligated to protect and maintain its competition intellectual property and should never disclose it unless authorized by the company.

- **You may not access your competition's intellectual property.** The Economic Espionage Act of 1996 criminalized trade secret theft at the federal level.
You and Your company’s confidential material

- Use confidential information only for the purpose for which it was intended.

- Share confidential information only with employees who need it to do their job.

- Clearly identify all email communications with confidential markings.

- Deliver all notes, records, data, and equipment back to the company upon separation from the company.

- Be aware of trade secrets and protect them.
In the fall of 2002 the University of Virginia expelled 45 students and revoked the degrees of three alumni who were found guilty of plagiarism.

Scholarly research and progress are based on the proper use of other people's ideas and written work. Ideas and concepts are built on others' works, but scholars must attribute the proper credit to the person who came up with that idea.

Taking the intellectual property of another person and gaining an unearned benefit without giving credit to them is plagiarism.

Plagiarism is the improper use (stealing) of words, phrases or ideas (intellectual property). The scholars who came before you must be acknowledged and credit must be given to them through references and citations.

Your proper use of references and citations displays your skill as a researcher and depth of knowledge of your subject. Remember creators have to be cited even if the item is hundreds of years old and not covered under copyright law. You need not cite common knowledge, but it is safest if you think of common knowledge as only the most basic facts.
Types of Plagiarism

- The most blatant type of plagiarism is the act of turning in someone else's entire work as your own. If you were to go to the web and download a paper, put your own name on it, and turn it in, you risk dismissal from the University.

- Direct quotations, even if you change a few words, must be identified with indentation or quotation marks and be properly cited. When you copy words, phrases, sentences, or paragraphs from a source you must acknowledge the author with a proper citation.

- Paraphrases, restatements or summaries of the sense of another author's ideas in your own words, must also be properly cited. You may begin the paraphrase with signal phrases such as "according to Smith" or "a recent study has shown" and end with a citation to the original work.

- Images, video and sound clips, or software programs that you download from the Internet must be properly cited. Even though you can easily download them it is still plagiarism to claim them as your own intellectual property by not properly citing the creator.
Avoiding Plagiarism

- Focus on what **you** want to say about the issue. Even if it seems that someone else has said it better, it still matters what you have to say.

- Write in your own words. Put the source aside and concentrate on writing your understanding of the source's information.

- When you do want to stress another scholar's view by using that person's words or phrases use quotation marks and cite where you found those words. Remember, you are not just using that person's views; you're borrowing his or her authority on the issue.

- If you wish to paraphrase another scholar's position or ideas use a signal phrase like, "According to Professor Smith" or "Davis 1996 work proposes" and cite where you found the position or ideas. Use these phrases at the beginning of your reference to a source so that your reader knows that the upcoming material is from someone else.
Avoiding Plagiarism

- Do not attempt to make a few small or cosmetic changes and then claim another's work as your own. Even short phrases taken from the sources need to have quotation marks around them.

- You don't have to cite "common knowledge," but don't assume that everything you want to use is common knowledge; it must be common knowledge to almost everyone.

- Cite whenever you use material gained from another creator.
Conclusion:

• Be aware of ethical and legal issues;

• Do not take law lightly;
  (“They cannot put us all in jail”)

• Ethics is equally important;
  (“Honesty is the best policy“)