

Engineering 125CS-01

September 29, 2006

Essay #1

### The Nature of Inventions

Every discovery and invention intended to solve one of society's problems also has some unintended negative consequences. Unfortunately for the people who believe it, the previous statement is quite false. Because of the "every" modifier at the beginning of the sentence, if only one case is otherwise, then the statement is falsified. And it is most certainly not true for every case. There is one case in which it is easy to show that there are, in fact, no unintended negative consequences; that of pasteurization.

Developed in the 1860s by Louis Pasteur, the process known as pasteurization has only helped society. Pasteurization was originally invented to help France solve the troubles that it faced in winemaking. At the time, wines could eventually become bitter or sour, and considering the fame that France held for its wines, this was a problem. Pasteur studied the microorganisms in the wines, to the point that he could determine the quality of the wine without even tasting it. This research allowed him to develop the method of partially sterilizing the wines, or heating them for several minutes at around fifty five degrees Celsius, to kill off the microbes while preserving the taste; the method of pasteurization. Pasteurized wines could be stored indefinitely. Pasteurization has since been modified so as to be beneficial to milk, cheese, beer, and other perishables.

While pasteurization has indeed accomplished its original purpose and more, did its conception have negative consequences? The book Science, Technology and Society doesn't mention any, but can one come to any through logic? Pasteurization is the killing

of harmful microbes through the partial sterilization of the desired consumable. So the real question is this; is there any situation in life in which the killing of microbes through pasteurization is harmful? The answer is no. The only conceivable instance in which the killing of microbes in a consumable would be negative is in the event of attempting to spoil the kind of food which needs said microbes. In this case, accidents must be ruled out; accidents are attributed to human error, and are not the fault of the discovery of pasteurization. So this instance would have to be more sinister in nature; the purposeful poisoning of someone, either as a prank or as an attempt at their life. In either case pasteurization is most certainly not the only, earliest, or easiest, way to do this. The discovery of pasteurization did not lead to the discovery of the ability to poison food; such as the discovery of radium may have lead to the ability to make nuclear war.

In closing, not *every* invention designed to help society has some unintended, negative, consequence. The statement may be true for most inventions, or it may not, but it is not true for all inventions. Some inventions have only a positive side. Pasteurization is one such invention.