

"That which is accepted as knowledge today is sometimes discarded tomorrow"

Consider knowledge issues raised by this statement in two areas of knowledge.

Ulcers are caused by stress, cholera is caused by a poisonous form of bad air, homosexuality is wrong, there is nothing immoral about slavery, and there is a God. The first four statements were socially accepted as knowledge in the past. The latter statement was my personal belief. However, all were eventually discarded. Because we have generally accepted methods of proof, and clear outcomes in the shape of technological applications, in the modern world, we (perhaps mistakenly, but nevertheless) take scientific knowledge as the benchmark for knowledge in every area. Knowledge in ethics is inevitably more subjective than in the natural sciences. This is because there are issues to do with differences of opinions in ethics due to cultural relativism and individual paradigms, and the lack of an equivalent process to the scientific methodology in determining knowledge. However, we can still aim to establish some sort of ethical knowledge. The differences in which we obtain knowledge or facts in these two areas of knowledge, lead us, but thrown into focus to the main knowledge issue encompassing all areas of knowledge: Given that our current knowledge may be proven wrong, how do we know what to believe in ethics and the natural science? Considering the fact that our knowledge is developed and modified over time.

To establish knowledge in the natural sciences, we use the scientific method, which consists of a cyclical process of establishing a theory based on observation, testing the particular theory through experimental trials, and obtaining results that are either disproving or supporting the theory. The weak aspect of the scientific theory is that

although the proof for the theory may not presently be disproven, it may be mistaken and what we consider to be true may only be temporary. However, this is the only way to establish knowledge in the natural sciences. For example, 30 years ago doctors believed that gastric ulcers were either caused by a psychosomatic condition caused by stress or that they occurred as a consequence of eating a diet rich in spicy food. However, Marshall and Koch disproved the theory by discovering that the real cause of gastric ulcers was bacterial infection (Hadley). Here, therefore, knowledge that was once accepted was disproved. The scientific method has a flaw; therefore we have to accept the fact that what may be considered true today may not be considered true tomorrow. Despite this, scientific research these days is a very complicated process and everything is verified, well, should be verified before it enters the accepted body of scientific knowledge and hence shared with the general public. For example, after the case with thalidomide, now the development of drugs and the clinical trials can take up to twelve years, which should give us some certainty (*Thalidomide chemistry*). There may be flaws in science, like there were with thalidomide, but the scientists were never wrong about the sedative properties of the drug. In this manner, the flaws in the scientific method describe how science develops. Our flaws are what lead us to our improvements. We need to be proven wrong in order to expand our knowledge. However, in various cases, we tend not to fully discard a belief. This belief is developed. Some aspects are discarded or modified, and some remain the same and become active contributors of what we regard as knowledge today. In this way, discarding and accepting knowledge are closely linked. In order to accept knowledge we must discard what we consider to be false and what we are left with, is what we consider to be true, in other words what we accept as knowledge.

Due to ethical knowledge being more subjective in nature than scientific knowledge, these two areas of knowledge might initially appear to have no overlap. However, despite these differences, the natural sciences converge with ethics in the way that knowledge is obtained. Ethical beliefs can be disproven, but in a different way to how they are in science. Ethical beliefs are not justified by experiments as in the classic scientific method, but tend to nevertheless be justified with reason. However, in ethics, reason is often combined with emotion. For example, if we look at how a person might justify their belief that homosexuality is wrong, their reasoning behind it might be that it is unnatural or that according to the bible 'a man shall not lie beside another man'. This person might then add an emotional aspect to their reasoning by saying that it is disgusting. However, is homosexuality really unnatural? There are many animals including cats and dogs that demonstrate homosexual behavior in nature (*1,500 Animal Species Practice Homosexuality*). To me, a book that was written thousands of years ago, in a very different social context (in terms of behavior, morality and interaction between individuals) doesn't seem enough to justify our ethical belief. Likewise, disgust, an emotion that we feel on a daily basis when we eat food we don't like or when we see an infected blister, doesn't seem enough to justify our ethical beliefs. What distinguishes ethics from science, as clearly demonstrated in the example, is that there is a role for emotions in ethics, when providing evidence for our beliefs. However, the logical consistency employed in evaluating whether a belief should be discarded is the same as in the natural sciences. This allows us to disprove ethical beliefs and therefore to make some progress in our pursuit of ethical knowledge. Similarly to the natural sciences, ethical beliefs are more 'right' to a certain degree when they have evidence and applicable reasoning, to justify them.

However, individuals can sometimes disregard reasoning in both the pursuit of new knowledge or modified knowledge in both the areas of ethics and the natural sciences. This leads us to ask the following knowledge issue: How do we make progress and discard knowledge? Progress can either be individual or societal. In science, for example, it was believed that a poisonous form of bad air caused cholera (*Cholera in Westminster*). This belief was then discarded due to the discovery of bacteria establishing the germ theory (*Germ Theory*). In the mid-1600's, Anton Van Leeuwenhoek, inspired by being an apprentice in a store where magnifying glasses were used to count the threads in cloth, started making magnifying glasses with increasingly greater magnifications. This allowed him to discover and see bacteria in a drop of water. He presented his findings to the Royal Society of England who initially rejected them. Here, reasoning took a back seat, seeing as Van Leeuwenhoek was a mere apprentice. However, due to factual evidence supporting the theory, it was eventually accepted and presented to the general public. This is an example of a conformity bias in which knowledge was only accepted when the majority (those in authority) approved of it. Before the scientific knowledge could be presented to the public and hence be accepted by the society, it had to be justified in terms of evidence and reasoning. Because of this, it can be generalized that progress in the sciences tends to be initiated by people with authority in that particular field before it can be accepted by the society.

Similarly to the natural sciences, there seems to be a more social progress in ethical beliefs initiated by groups rather than individuals. For example, William Pitt the Younger started the antislavery movement that led to the abolition of the slave trade, twenty years later (*The Abolition of Slavery Project*). This movement eventually

spread across the world with the formation of the first abolition society in North America: Pennsylvania Abolition Society (*Abolition of Slavery Timeline*). In this way, ethics, like the natural sciences, is subject to a conformity bias. For example, I was not raised to believe in God, but I was raised to be good. However, one year I attended a Christian summer camp. It was similar to a normal camp, but with the added bonus of having lectures about God, analyzing passages from the Bible and singing religious songs. In this micro society, it was perceived wrong to not believe in God. Because of this, I was inevitably subject to a conformity bias. I left the camp with a gifted Bible in my hand, certain that God existed because I saw how everyone genuinely believed in his existence and it seemed to dampen down all the doubts that I previously had. In contrast to the natural sciences, the conformity bias in ethics is more about fitting into society and not being perceived as an outcast, than it is about believing in what has the most justification in terms of evidence and reasoning, like it is in the natural sciences.

In conclusion, the way in which we achieve and make progress in our knowledge differs slightly in both the areas of the natural sciences and ethics but overlaps in using reason as a way of obtaining knowledge. What is accepted as knowledge or as a belief is justified by reason and evidence that both seem to be indisputable. However, simultaneously these two have flaws, which initiate the ongoing progress of knowledge. The progress in knowledge tends to be a social movement that takes time because the more people agree, the stronger the conformity bias is and the more minute doubts become. However, there will always be a natural tendency, despite progress in knowledge, to disregard evidence and go back to our initial beliefs and what we perceive as knowledge in both the areas of natural sciences and ethics.

Works Cited

"Abolition of Slavery Timeline." *Wikipedia*. Wikimedia Foundation, 18 Jan. 2014.

Web. 19 Jan. 2014.

<http://en.wikipedia.org/wiki/Abolition_of_slavery_timeline>.

"Cholera in Westminster." *Cholera in Westminster*. Westminster City Archives, n.d.

Web. 17 Jan. 2014. <<http://www.choleraandthethames.co.uk/cholera-in-london/cholera-in-westminster/>>.

"Germ Theory." *Science Museum. Brought to Life: Exploring the History of*

Medicine. N.p., n.d. Web. 17 Jan. 2014.

<http://www.sciencemuseum.org.uk/broughttolife/techniques/~link.aspx?_id=4F4EA526F9064ABF9587BDAF7BA6489B>.

Hadley, Caroline. "The Infection Connection." *US National*

Library of Medicine National Institutes of Health. EMBO

Reports, May 2006. Web. 17 Jan. 2014.

<<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1479565/>>

"Thalidomide chemistry." *Encyclopedia Britannica Online*. Encyclopedia

Britannica, n.d. Web. 20 Jan. 2014.

<<http://www.britannica.com/EBchecked/topic/589836/thalidomide>>.

"The Abolition of Slavery Project." *The 1807 Act and Its Effects: The Abolition of Slavery Project*. N.p., 2009. Web. 17 Jan. 2014.

<http://abolition.e2bn.org/slavery_113.html>.

"1,500 Animal Species Practice Homosexuality." *1,500 Animal Species Practice Homosexuality*. N.p., 23 Oct. 2006. Web. 20 Jan. 2014. <[http://www.news-](http://www.news-medical.net/news/2006/10/23/20718.aspx)

[medical.net/news/2006/10/23/20718.aspx](http://www.news-medical.net/news/2006/10/23/20718.aspx)>.