

**“That which is accepted as knowledge today is sometimes discarded tomorrow.”
Consider knowledge issues raised by this statement in two areas of knowledge.**

The straightforward scientific method has been used in the Natural Sciences as a way of processing knowledge. However, the issue arises as to how do we know whether or not our knowledge is completely true. Thus, my essay will first investigate how in the Natural sciences we seldom get the complete truth and in fact the Natural Sciences are the process of getting to the truth. Secondly, using a contrastive Area of Knowledge, Ethics, I will explore the how despite having inherently uncontrollable variables we can still show evidence of progress being made. Lastly, I will compare the two Areas of knowledge to demonstrate that although they both use reason to justify the ethical and scientific truth, the knowledge we get from each is based on completely different foundations. The Natural Sciences uses reason as a way of logically justifying our knowledge and hence being able to falsify incorrect predictions. While, Ethics, ironically, the process of using reason is to psychologically engage individuals to justify their knowledge.

In Natural Sciences, we continuously falsify anything that is not true or does not work in our world. All of which is not falsified is tentatively assumed to be true. This is because what we believe currently has been tested through rigorous experiments until we are sure it has a practical purpose. However, this is until under different circumstances the experiment will be falsified. The successful scientific method is a tradition used for any scientific experiment. Using this method, new conclusions are formed that falsify or verify the conclusion. Through the Geiger –

Marsden's experiment, J.J. Thomson's plum-pudding model was discarded.¹ Nevertheless, Rutherford's model was discarded in a matter of two years by the Bohr's model and today we use Schrodinger's atomic model. The plum-pudding model stated that the electrons were placed inside the nucleus and surrounded by a liquid of positive charge. Through the Rutherford's model we realized that this is not possible because of the attractive forces. It falsified the plum – pudding model and made clearer predictions. However, the Rutherford's model still had made false predictions that were cleared by the Bohr's model. Then the Schrodinger's model falsified the predictions made by the Bohr's model. Seeing this process, in the future maybe the Schrodinger's model could be falsified as well. The Schrodinger's model makes all the same correct predictions that the previous models have but also discards the false predictions made by the other models. The Natural Sciences can be seen as a process of getting to the truth rather than being the truth. Getting better and better at matching all the known facts and discarding the false information is what we mean about the process of getting to the truth. Therefore, we can conclude that what is known today is the closest we can get to the truth. Although it is justified, there could be another experiment in the future that defies our current truth.

In contrast, Ethics is almost completely different to the Natural Sciences. In Ethics there is no method in which we can justify or even test our conclusion, as there are too many uncontrolled variables to consider. For instance if there were no variables at all, we would not know what to test, what to conclude, and what to do with the data we get. Ethics is highly dependent on human attitudes and we are inherently uncontrollable variables because there are various ambiguous factors that

¹ Hamper, Chris, and J. K. Ord. *Physics: Standard Level : Developed Specifically for the IB Diploma*. Harlow, Essex: Pearson Education, 2007. Print.

affect our opinions. One view common view is that Ethics is considered *normative* rather than *descriptive*. Ethics is not about facts but rather our attitude towards those facts. If this is right, then perhaps we cannot truly investigate Ethics simply by investigating facts. This is what is the fact-value distinction – that no matter how many facts we consider, it will not determine our ethical judgments. During the Gupta Empire in India, the practice of Sati, where a woman throws herself into the pyre of her husband, was considered normal.² If this example were to go through a scientific experiment, firstly we would not know what variables to chose in order to justify that Sati is wrong. And if we do, for example observe the practice of Sati for a range of rich and poor families, it clearly does not give logical conclusions about Ethics. Although it is possible to do the experiment, however there are no substantial conclusions that can be drawn from this which relate to Ethics. Therefore, our understanding of what we consider true knowledge is different with regards to these two areas of knowledge.

However, mindful of this difference, claims with regards to knowledge can still be made in Ethics. They are not factually based like in Natural Sciences but have still been changed over time. I believe that even though there are cultural differences, we have progress in clarifying our ethical judgments. However, ethical progress is different to the progress we make in Natural Sciences because the foundations of each Area of Knowledge are completely different. Nevertheless, we still use the same tools to justify the progress we are making. Although, they are two contrasting areas of

² Heaphy, Linda. "Life in India: The Practice of Sati or Widow Burning -." *Kashgar Tribal Artifacts - Life for the Modern Nomad | Handmade Jewellery, Ethnic Handicrafts, Antique Furniture*. CDW and Sanscode, 2011. Web. 21 Dec. 2013.
<<http://www.kashgar.com.au/articles/life-in-india-the-practice-of-sati-or-widow-burning>>.

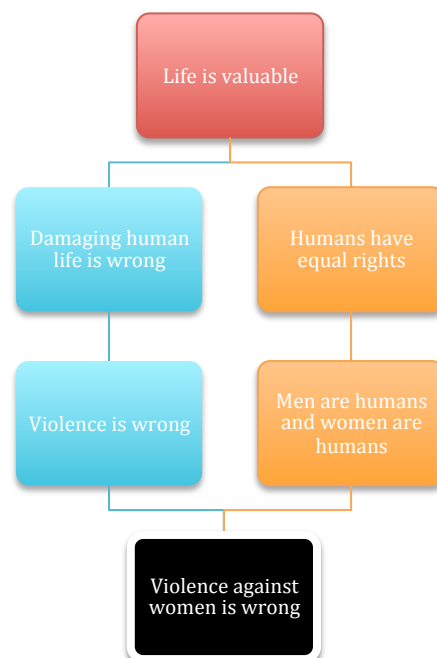
knowledge, there are similarities in the way in which we justify our knowledge in each area.

In Natural Sciences we use reason as a way of concluding our point. We experiment and if the conclusion defies the proposed hypothesis we completely discard the already known knowledge. However, there are some exceptions where we do not discard the theory until we are highly certain that our new conclusion works under almost all circumstances. For example, Einstein disproved Newton's laws of motion in 1905³. Yet today in 2013 I still learn about the laws of motion and we still use them, as they are still applicable in many experiments. It becomes inaccurate when dealing with high-speed objects. This is one of the exceptions where we still have use for our previously known knowledge. We realize that through continuous experiments our known theories become more specific and accurate at making valid and more powerful predictions. As mentioned before there is the element of uncertainty of the truth, which means that there is, always room for improvement. Therefore, falsification in Natural Sciences occurs through reason, however even with reason we still do not get the absolute truth. Our current knowledge in the Natural Sciences is the closest to the truth we can get.

In Ethics, despite the differences noted above, we still can use reason to draw conclusions. We define our truth in Ethics as what we considered morally correct. However, in order to have a possible conclusion in Ethics, we have to accept the premise. If we have to justify our premise, it will become a different argument. Hence, it is essential that the premise is agreed upon. As part of one of my service

³ "History of Old: Sharing the "Story" in History: Albert Einstein's Theory of Relativity." *History of Old: Sharing the "Story" in History: Albert Einstein's Theory of Relativity*. N.p., n.d. Web. 12 Dec. 2013. <<http://www.historyofold.com/2011/08/albert-einsteins-theory-of-relativity.html>>.

projects I went to India to make jewelry with marginalized girls. Some of who have been physically abused. I, being Indian myself, believe that violence against women is definitely wrong. However, there are some cultures and communities in India that believe that violence against women is right. The issue here is that the premise is not agreed upon and therefore, we cannot draw conclusion which premise is ethically correct. Additionally, in order to prove one thing it has to be dependent on something else. After continuously justifying our knowledge, the justifications become self-explanatory. Then we come to the issue as to how to verify if the evidence is self-explanatory or needs further evidence. Hence, what an individual chooses to believe is highly depended on what he or she thinks is morally correct and morally wrong. Thus, in order to logically come to a conclusion, a commonly agreed premise is needed. For example, “life is valuable” is a commonly valued belief. Using this we can begin our reasoning as shown below.



Although factual information is not used, it still gives a logical conclusion that violence against women is wrong. However, ironically it is not the logicity of the

conclusion but the psychological reasoning which forces individuals to engage in the other views. It is predictable that there will be debate on some of the pieces of evidence. This process of thinking about our justifications is valuable psychology because it compels individuals to know how and why they use their knowledge to justify their beliefs. Therefore in Ethics, we need to logically evaluate our knowledge so that its psychological value allows us to modify our knowledge and make ethical progress just like in science.

In conclusion, refining and correcting knowledge is a part of our process of gaining new knowledge and is impossible to avoid in our world. However, we cannot be completely sure about our conclusions, as there are other unaccountable and uncontrollable variables, which affect the knowledge we gain. Definitely, there is a level of certainty that our knowledge is true because of continuously experimenting with the given knowledge. Nevertheless, sometimes it is not the end conclusion that changes our knowledge but the actual process of getting to the conclusion in which we realize the falsity and inaccuracy of our present knowledge.

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