

“A skeptic is one who is willing to question any knowledge claim, asking for clarity in definition, consistency in logic and adequacy of evidence” (adopted from Paul Kurtz, 1994). Evaluate this approach in two areas of knowledge.

Often enough, the greatest inventors and inventions of the time is developed from someone who was willing to question even what seemed to be the most basic ideas in a theory, model or belief – they were skeptics. Throughout the history, breakthroughs in Science were often the work of skepticism. Something so simple that we take it for granted nowadays, such as the discovery of the solar system, was the work of skepticism; wondering what was beyond our visible world of Earth. In a way, being skeptical has actually fostered development on knowledge on sciences.

Albert Einstein, one of the world’s most renowned scientists and philosophers of all times, said, “Blind belief in authority is the greatest enemy of truth.”¹. As he attempted to explain in this quote, we may be prone to the lack of access to the complete truth if we are not careful as to forget to question any knowledge claims in detail. Practice of skepticism, questioning or doubting an established belief or notion, may actually be used to clarify in terms of language, reasoning and proof. Perhaps the whole notion that our knowledge expands based on skepticism is true under the circumstances that we have not and will never reach the “complete” truth.

Natural Sciences and Human Sciences on the surface may seem to have a lot in common between them – both Areas of Knowledge tend to draw conclusion based on similar method, in which the researchers gather information primarily based on

¹ Quotes about Skepticism. <http://www.goodreads.com/quotes/tag/skepticism>

observation and experiments and relate the findings to a specific law or trend. However, there are subtle differences in the two Areas of Knowledge. In this essay, I'm going to discuss the clarity in definition, consistency in logic and adequacy of evidence in the context of Natural and Human Sciences.

Clarity in definition is questionable in both Areas of Knowledge to different degrees. In Natural Sciences, the scientific method – process in which the researchers test out a theory through repeated observation, reason and experiments – is often implemented to define a theory or phenomenon. One may be given the impression that Area of Knowledge such as the Natural Sciences is highly structured rigid in definition; the scientific method seems flawless in that it is justified through real experiments. However, as obvious as the method is presented, the actual clarity in definition sometimes raises doubts. Often it is case that through questioning a previously acknowledged claim, a skeptic may in fact be able to define a term or concept with higher clarity. In Physics, it is often the case that foundation logic is based on some simple premises, as most of the work of classical Physics is now. However, the work on modern Physics – work on the Quantum Physics as an example – is still unclear in definite understanding of the terms. Many scientists had run numerous experiments in order to clarify a statement and had individually come up with a theory of their own. Einstein had already established his theory on the photoelectric effect – light absorption can release electrons. But, few years later Niels Bohr theorized that particles are made up of a nucleus with bands of electrons around it - somewhat of an attempt to define the less developed concept and clear any confusions through questioning previously accepted

theories of Einstein. In fact, the attempt to clarify the definition did not end there; Schrodinger, doubting the works of former scientists, later went on to further clarify, to a degree, the possible positions of the electrons through his theory of the wave functions.² Bohr and Schrodinger, as “skeptics”, were both able to contribute to clarifying definitions.

On the other hand, Human Sciences, which actually interprets the experiences and activities of human beings, may not utilize the method of skepticism as often as Natural Sciences do. Much like the Natural Sciences, Human Sciences rely on strong postulates to base the whole theory on, from which the definitions are given. However, the method to which it justifies the postulates may be different from that of Natural Sciences. Even though a lot of the work is based on observations – much like the scientific method is as well – Human Sciences actually requires new interpretations of the behaviours observed. For example, in studying Microeconomics, a lot of the theory derives from common behaviours of the people – when price increases, it seems logical that the quantity demanded would decrease, since the consumer would gain less utility from the same amount of money spent after the inflation. It isn't the case that economists is not necessarily questioning a claim but rather theorizing a new concept. Because of such factor, clarity in definition may be much more vague in Human Sciences compared to the Natural Sciences.

Consistency in logic also does not always hold for both areas of knowledge; Natural Sciences rely on both inductive and deductive approach. Whilst the motive to

² Atoms. <http://www.nobeliefs.com/atom.htm>

launch a scientific experiment may be to disprove a theory, the scientific method in nature itself is more inductive than deductive, since in literal sense what it does is repeating the same experiments over and over again until the scientists are convinced that the outcome is justified; logically, the scientific method has little flaw and therefore the logic is much clearer perhaps than others. A skeptic may question the logic behind a certain knowledge claim, and through analyzing the problem guided by the strong logic, be able to identify and develop previously accepted knowledge claim.

On the contrary, it should be noted that in Human Sciences, the deductive method is used more often. Yet, dealing with humans may result in less consistency in logic compared to Natural Sciences. For example, as part of our sociocultural level of analysis under Psychology, we learnt that psychology can take form of emic, or inductive, and etic, or deductive, both of which are useful for their purposes. Margaret Mead, in 1935, visited 3 new tribes of New Guinea and observed their cultural norms over a 2-year period. Prior to the experiment, she already had the “outsider’s perspective” – in this case the common Western viewpoint. However she was keen enough to question the beliefs of the new tribes compared to her own culture. Results gathered had actually been so different from Mead’s own cultural norms. Had it not been for psychologists who had at any point in time doubts over a new human behaviour, psychology might not be as well understood as it is now. Yet because Psychology deals with human emotions so much, the logical consistency could be questioned by different era or place.

Adequacy of evidence could actually be related to the consistency in logic. In Natural Sciences, the logic may be consistent; yet there is a chance for real evidence that could either prove or disprove the outcome. For example, Newton's three law of motion was held as the absolute truth for such a long time because scientists could not find an evidence for cases in which it did not follow any of the three rules. However, years later Einstein was able to prove that Newton's laws did not hold true for matter moving relative to the speed of light. By providing adequate evidence to disprove a theory, method of skepticism has prevailed to successfully achieve its goal.

As for Human Sciences, the question of adequate evidence in itself may be ambiguous since it is such a subjective area. On carrying out the same experiment to test a theory, the two separate researches could conclude differently. Developing the case study done by Meade, her published results, despite the back-up material that was presented, was discredited and accused of deeply flawed evidence.³ This example demonstrates the ineffectiveness of the evidence presented in supporting a claim. Especially since Human Sciences deals with emotions which often stay and is unpredictable, the evidence presented could easily be manipulated or disproven, and therefore does not qualify as an adequate one. Skepticism may have actually resulted in less adequate evidence.

³ The Univeristy of Colorado Boulder.

<http://www.colorado.edu/news/releases/2009/12/10/trashing-margaret-meade-reputation-based-deeply-flawed-evidence-cu-prof>

While it is clear that both areas do benefit from the use of skepticism as a method to improve on the knowledge, their use may be restricted depending on the situation. There are subtle differences in the two Areas of Knowledge that distinguishes the degree to which skepticism is used. However, it should be noted that in the essence, both areas return to the use of scientific method must make implement skepticism to some degree. Use of skepticism is not restricted to the two Areas of Knowledge discussed on the topic either. In some areas of knowledge, such as the Arts, the truth may even be subjective and open to interpretation, thus clarity in definition and consistency in logic could be compromised depending on whose lens the Arts is perceived from. Nevertheless, it stands that a skeptic may assist in further enrich the knowledge of humans. In the end, the degree to which skepticism may affect the validity of any knowledge claim may differ between areas of knowledge.

Word Count: 1500