

REAWAKENING SKEPTICISM: A SECOND LOOK AT SCIENCE

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ABSTRACT

The issue of human subjectivity in scientific procedures and findings in recent years has made science synonymous with superstition and cluttered it with ambiguities and complexities that should not be so. One wakes up to realize that what he knew yesterday is no longer true today. Using the methods of philosophical analysis, this paper x-rays some of the conspicuous errors and blunders in science by frequently raising sporadic epistemic-inciting questions, employing the style of philosophical discussion. It reveals the most dominant factor responsible for them to be the human factor – subjectivity. It accuses some aspects of scientific findings of immodesty and recommends a version of skepticism that is both healthy and beneficial, a conservative way of preserving some of our beliefs against the onslaught of scientific subjectivity – soft skepticism. It submits therefore that it is more honorable to suspend judgment over certain matters than hold views with insufficient evidence; it is more scholarly and intellectually honest to say 'I don't know', 'I'm not sure', 'I lack sufficient knowledge in this field to make such conclusion', etc. than to claim to know almost everything and be able to give answers to virtually every phenomenon.

Key words: Skepticism, Pyrrhonism, Science, Knowledge, Judgment.

INTRODUCTION

Skepticism is an ability, or mental attitude, which opposes appearance to judgment in any way whatsoever, with the result that owing to the equipollence of the objects and reasons thus exposed, we are brought firstly to a state of mental suspense and next to a state of

“unperturbedness” or quietude (Moser and Arnold 2013:81). Contemporary philosophy has treated classical skepticism with utter skepticism, taking for granted the weighty claims of the skeptic. This, in our thinking is the bias of classical epistemology. Granted the fact that the claim of the skeptic is self-defeating *prima facie*, it does not fully exhaust the enormous self-evident arguments of this school of thought. Though most of its basic claims are callously whisked away as though they seldom made any sense, the reality of skepticism still stares at us in the face with some of the recent discoveries and developments in science and technology. Barry Stroud (1984: 1), in contemporary times, has even gone on, following Descartes, to admit of what he calls 'skepticism about the external world' – the idea that no one knows anything about the world around us. Accordingly, he says, “My aim is not to solve the problem but to understand it. I believe the problem has no solution; or rather that the only answer to the question as it is meant to be understood is that we can know nothing about the world around us” (Stroud 1984:1). They go to show that skepticism actually has a ground in human existence and interaction that we have not sufficiently appreciated all these while. Many times, we find ourselves struggling to relate with what we claim to know. Some other times, we freely accept them without any iota of doubt. What makes the difference? The distinction between knowledge and opinion is quite difficult to determine in today's world, especially with the rise in communication, particularly the internet and the social media. This paper sets out among other things, to question some of the things we had previously accepted as knowledge that science has come out boldly to disprove, and argues that we had rather remained skeptical, and maintain a state of “unperturbedness” or quietude than accept many opposing views enunciated by the same source at different times. To this end, this paper prefers the ancient version of skepticism to the contemporary, since ancient skepticism, as shall be carefully exposed, is more interested in truth and would rather advise a suspension of judgment to believing falsehood. For just as Groarke (1990:4) intelligently argues, “Defeating skepticism has become one of philosophy's main concerns; but philosophers have made little or no attempt to understand true skepticism and have rarely looked past Hume and Descartes in discussions of the issues it raises.”

BACKGROUND TO SKEPTICISM

From the very etymology of the word, *skepsis* meaning *investigation* or *inquiry* and *skeptikos* meaning *inquirer*, the idea of skepticism is clearly spelt out (Machuca, 2011:251). The word *skeptic* is used to represent a varied chain of attitudes and dispositions. From its origin, skeptics were searchers and enquirers into knowledge. They were investigators into the nature of reality. Their intention was basically to find out the true nature of things in the universe. If they were to be in today's world, branding them first-hand scientists would be no mistake at all. But there was more to them – unlike today's science that is so enthusiastic to discover and say something new even with insufficient evidence, their own science was rigorous and meticulous. They were called 'those who suspend' (Ancient Skepticism: 2014) suggesting the kind of investigation they did and the nature of knowledge they sought. They reasoned that it is more sincere and honorable to suspend judgment over certain matters than hold views with insufficient evidence. And we think it is more scholarly and intellectually honest for one to say '*I don't know*', '*I'm not sure*', '*I lack sufficient knowledge in this field to make such conclusion*', etc. than to claim to know almost everything and be able to give answers to virtually every phenomena. They never denied the existence of knowledge. As a way of life they were given to

enquiry. Their intention was to affirm nothing as long as knowledge has not been arrived at on a particular subject. As a result, they taught their followers how to get along in the world without certain knowledge (Popkin and Stroll 1993:188). Men of talent, who were perturbed by the contradictions in things and in doubt as to which of the alternatives they ought to accept, were led on to inquire what is true in things and what is false, hoping by the settlement of this question to attain quietude (Moser and Arnold 2013:81).

FORMS OF SKEPTICISM

In modern and recent times, especially, skepticism in philosophy has come to be seen and understood as the view that we do not know anything, that nothing is certain, and that everything we know is open to doubt (Stroud: 1984). But most of the arguments developed by the ancient skeptics came largely as reactions to the views of philosophers of their time notable among them were the Stoics, the Cynics and the Epicureans. Most of these arguments have generated widespread disagreement regarding vital philosophical positions, and issues and for this reason they have continued to be relevant themes, influential for subsequent thinkers. Most of the dominant skeptical ideas revolve around Pyrrho, Timon, Arcesilaus, Carneades, Aenesidemus and Sextus Empiricus. There are majorly two forms of skepticism that thrived among the skeptics until lately – Academic and Pyrrhonian skepticism. Later arguments on skepticism have been a follow up of these discussions.

ACADEMIC SKEPTICISM

According to the Internet Encyclopedia of Philosophy (n.d.), Academic skepticism began with Arcesilaus, the sixth leader of the Academy. He introduced skeptic doctrines into the Academy even though he did not call himself a skeptic. Socrates' commitment to investigation, to the testing and exploring of one's own and others' beliefs, and his passion for weeding out falsehood, are the starting points of Academic skepticism (Ancient Skepticism: 2014). Arcesilaus maintains that we can live without having beliefs, guided only by reason. When we truly follow reason, according to him, it will lead us to live such a way. He revived the Socratic practice of the dialectic method – after encouraging his interlocutor(s) to state his view on a given subject, he will then critically examine the view using the very premises advanced by his interlocutor(s). He had gleaned from the works of Plato the germinal seeds of his skepticism – that a thing cannot be known by certainty whether mentally or by experience. Just like Socrates, Arcesilaus wrote nothing. He sees the skeptical life as one lived according to reason. His major target were the Stoics – Zeno's claim that knowledge is possible, that he has a correct account of it and that of his willingness to teach it to others formed the ground for Arcesilaus' attack on Stoicism. Arcesilaus argued against the possibility of there being any sense impressions which we could not be mistaken about. In doing so he paved the way for future Academic attacks on Stoicism (Ancient Greek Skepticism: n.d.).

Zeno's claim was founded on the notion of *katalêpsis*: a mental grasping of a sense impression that guarantees the truth of what is grasped. The most outstanding features of Arcesilaus' philosophy were his dialectical method, his debate on the criterion of truth and his defense of the dogmatist's argument that the skeptic will not be able to act should he suspend judgement. In fact, Arcesilaus' dispute centres on whether there is a criterion of truth or none. Gorarke (1990:4) thinks that this classical tradition presents skepticism as the resolution of

philosophical perplexity and not the cause of it as modern and contemporary thinker claim. A second in this tradition of Academic skepticism is Carneades, the tenth leader of the Academy. He did not write anything, just like Arcesilaus. He continued from Arcesilaus and expounded more regarding the criterion of truth. He developed arguments that further challenged the dogmatists. Carneades was skeptical about the possibility of proving anything through syllogistic argument because the premises of any syllogism are based on assumption which would require to be proved first before being used to prove anything else (Omeregbe 1998:10). He also employed the Socratic dialectics. Famously, he argued for justice one day and the next he presented converse arguments against it on his way during his ambassadorial trip to Rome. Carneades also argued against the Stoics and the gods. His intention was to show that the Stoics had not strongly established their argument about the divine. Academic skepticism preludes Pyrrhonian skepticism even though there may not be any simple, clear cut distinction between the two. That however, is about the least consideration of this paper.

PYRRHONIAN SKEPTICISM

Pyrrhonian skepticism discusses tranquility and places high regard on appearances unlike academic skepticism. Pyrrho like Socrates put down nothing, we only get to know about him from Timon, his pupil and from another Greek historian, Diogenes Laertius. Both Sextus and Aenesidemus (later advocates of Pyrrhonian skepticism) claim that their skepticism drew inspiration from Pyrrho. Aenesidemus was the compiler of the *Ten Modes* – carefully devised arguments that encourage suspension of judgment (Machuca, 2011:247). Pyrrho's life and philosophy as revealed by the anecdotes portray him as living a tranquil life unaffected by anything around him. This is in sharp contrast to academic skepticism. Pyrrho never trusted the senses, he exhibited an indifferent life to the society. So unaffected by appearance, he would pass a drowning man indifferently without caring to help; on another occasion he almost fell off from cliffs and was saved by his friends from an approaching wagon. Neither emotion nor belief meant anything to him, not even perception. Yet he would be reckoned as saying that the skeptic adheres to appearances. The most important piece credited to him was from his pupil, Timon:

It is necessary above all to consider our own knowledge; for if it is in our nature to know nothing, there is no need to inquire any further into other things... Pyrrho of Elis was also a powerful advocate of such a position. He himself has left nothing in writing; his pupil Timon, however, says that the person who is to be happy must look to these three points: first, what are things like by nature? second, in what way ought we to be disposed towards them? and finally, what will be the result for those who are so disposed? He [Timon] says that he [Pyrrho] reveals that things are equally indifferent and unstable and indeterminate (*adiaphora kai astathmêta kai anepikrita*); for this reason, neither our perceptions nor our beliefs tell the truth nor lie... For this reason then, we should not trust them, but should be without opinions and without inclinations and without wavering, saying about each single thing that it no more is than is not, or both is and is not, or neither is nor is not... the result for those who are disposed will be first speechlessness (*aphasia*), but then freedom from worry (*ataraxia*); and Aenesidemus says pleasure (Ancient Skepticism: 2014).

Neither Pyrrhonian skepticism nor Academic skepticism has distinctly unified views of their own. What we find rather is that different Academics and Pyrrhonians appear to have understood and expounded their skepticisms in different ways. “The Pyrrhonian endorsement of *aphasia* is the closest any skeptics come to the suggestion that we should not speak, however, and it is a refusal to speak on specific philosophical issues that explicitly leaves room for day to day affairs” (Groarke 1990:9). Pyrrhonian skepticism is more of a practice than a set of theories and doctrines. In his popular view, Pyrrho avowed that the skeptic should live without having beliefs. Sextus Empiricus, a major proponent of skepticism in the 3rd century AD is an outstanding skeptic of the Pyrrhonian order. He further elaborates Pyrrhonian skepticism in his famous *Outlines of Pyrrhonism*. He would advise us today to follow appearances and avoid making any judgement regarding the way the world appears and the way it really is. This would mean that the skeptic cannot affirm or accept any philosophical doctrine or position, like skepticism, in the first place. This has been the major argument posited against skepticism, condemning it for being self-destructive. But “one possible response to this problem is to say that Sextus only targets sophisticated, philosophical theories about value, or about physics or logic, but allows everyday attitudes and beliefs to stand” (Ancient Greek Skepticism: n.d.). To this we would devote an unreserved assent. Skepticism is very important in today's evolving world where so many known lines separating things before now have been blurred. One wonders what next to expect and then questions the veracity and certainty of what he knew before. How does Mr. A explain to his little niece that Angelina is now Maxwell or that the earth now has a second moon? How would he tell her that a car can now fly like a helicopter? Skepticism becomes more important especially in complex and tortuous matters where we usually never attain complete, objective certainty as science, spirituality, or the subconscious. Let us consider scientific findings as a case.

SCIENCE AND SCIENTIFIC FINDINGS

Since the time of Descartes, there has been the philosophical problem about our knowledge of the external world (Stroud 1984:1). Scientific findings are deliberate attempts in this line to search out and discover something new. We grew up as little children learning about the nine planets. We even had a mnemonic for remembering the order of these planets to the sun – My Very Eyes May Just See Under Nine Planets. We can also remember learning about the seven rivers in Africa and reciting the seven continents in the world. As children we never asked any questions about these facts. We had innocently accepted them the way we learnt them. In fact, we have been rehearsing some of the facts and teaching them to children. And in this we will raise the first issue with scientific findings: who made these discoveries and given what conditions? Before publishing or making public a scientific finding which person or body or agency is committed to validating and corroborating these claims? What if one comes to say that Uranus is habitable like the earth and could be the next safe planet to live in? Could there ever be a difference between findings and rumors? Where lies the difference between news casting and scientific findings? After all there are many sides to any news and it keeps unfolding everyday as the days go by.

Sometime ago it was news among some people that Pluto is no longer a planet. Some even claimed that it has disappeared from the solar system and no longer exists. And just like we were taught in primary school about the planets and the earth's rotation, some accepted it, some others disbelieved it and treated it as a hoax.

This provoked so much thought, so much uneasiness to find out the real details for oneself. In 2006, a committee made up of astronomers (International Astronomical Union, IAU) moved that Pluto be no more regarded as a planet. Clyde Tombaugh had discovered Pluto in 1930. It was named the same year as Pluto by Venetia Burney, an eleven-year-old from England. BBC reports that:

Textbooks were swiftly updated to list this ninth member in the club. But over subsequent decades, astronomers began to wonder whether Pluto might simply be the first of a population of small, icy bodies beyond the orbit of Neptune. This region would become known as the Kuiper Belt, but it took until 1992 for the first “resident” to be discovered (Rincon 2015).

'Textbooks were swiftly updated... ' This new body in the solar system was discovered and out of excitement it was quickly drafted in as the ninth member in the club. What were the criteria for listing it as a member? How come it was that quickly accepted and textbooks were swiftly updated? According to Pickover (2008:7), “Newton supposed that the planets were originally thrown into orbit by God, but even after God decreed the Law of Gravitation, the planets required continual adjustments to their orbits.” Did Pluto stop adjusting to its orbit or what, we thought aloud. Is this how scientific findings come about actually? And who knows how many of such scientific findings as we have today have followed this threadbare path .

It took until 1992 for the first “resident” of this Kuiper Belt to be discovered. Could it be that this first resident appeared (came into existence) in 1992 or has it been there all these while only that the astronomers were not able to see it then (perhaps because of the available gadgets and instruments then and how sophisticated they were)? Today, the same science tells us that there are more residents in this Kuiper Belt region (commonly referred to as Kuiper Belt Objects, KBOs) than the one already discovered, but yesterday (before 1992) there was none. Was yesterday's science false for not discovering any resident until 1992? Is today's science less correct for making some more discoveries about the Kuiper Belt? Will tomorrow's science be more correct should they discover more residents of the belt or bring some more conflicting findings? Consider also these further queries: with what degree of certainty can science tell us about the external world? How much does science really know about our world notwithstanding her bogus claims? What is the line between science and mere speculation?

With the discovery of the Kuiper Belt Objects (KBOs), debate regarding the status of Pluto heightened that in 2000, New York's Hayden Planetarium unveiled an orbit showing only eight planets. This move too leaves so much to be answered: what was their evidence for making such a drastic conclusion? Which body verified their finding or reports? What was their evidence? Did they have such right to delist Pluto from the solar system? Is a hypothesis the same as a scientific finding?

Amidst the controversy, the International Astronomical Union (IAU) decided to have these issues reviewed and to set the criteria for naming an object a planet. Unfortunately, Pluto did not meet one of the criteria of “clearing its neighbourhood.” Because it shares its orbital neighbourhood with other KBOs, Pluto was demoted from being a planet and given the new designation of “dwarf planet”. In this new categorization are the biggest asteroid belt body, Ceres, and other large KBOs Eris, Quaoar and Sedna (Rincon 2015); making the new list five. Another source recounts:

Pluto is in good company. There are currently five dwarf planets, but

scientists expect more will be discovered over time. Four of the dwarf planets – Pluto Makemake, Haumea and Eris – are located beyond Neptune. The fifth dwarf planet, Ceres, lives in an asteroid belt between Mars and Jupiter (Wonderpolis 2017).

These two sources agree over the number and designation of these bodies but disagree over the names of these dwarf planets. Could these names be arbitrary? Who even gave them the names -a five-year-old from Illinois or a tourist from India? Scientists expect that more of these dwarf planets will be discovered over time. At least they acknowledge that they are still searching them out and have not exhausted them. So whatever we can say about scientific findings may just be valid for today and only dependent on how much we can search out today? Should science suspend judgement about these phenomena that are uncertain in their nature (being external objects outside space) and leave us in the dark about them entirely or should she go ahead to make strong claims whose validity is questionable and certainty untenable? But, under a radical early plan, the number of planets would have increased from nine to 12, seeing Pluto and its moon Charon recognized as a twin planet, and Ceres and Eris granted entry to the exclusive club. But the idea met with opposition (Rincon 2015). This early plan did not factor in the other dwarf planets yet it considered Pluto's moon in the list. Is this not arbitrary tortuousness? What could have been their criteria of consideration? Can a moon be considered a planet? Yesterday we had only nine planets (or should we say we thought and believed we had nine planets from what we were told), some still think so today and we don't know if they can be said to be wrong justifiably. Today we have eight planets and five dwarf planets. So the next time you want to talk about planets, you have to specify which type you are referring to – the 'tall' planets or the dwarf planets. Tomorrow? Let's wait until it comes. Who knows...? There might be no more planets. Or may be in professor Iwan Williams own words: “By the end of the decade, we would have had 100 planets, and we think people would have said 'my goodness, what a mess they made back in 2006'” (Rincon 2015). Is this not confusion breeding and feeding gleefully on the scientific process? This new decision is thorny. Or what do you think? Prof. Alan Stern remarked that it is an awful decision, and described the new definition as being 'internally inconsistent'. Another professor who attended the conference, Owen Gingerich, reported that only ten percent of the 2700 scientists who attended the conference were present during the voting on Pluto. So, are we not just telling ourselves what we want to hear and believing what we want to believe than we are doing science? Can we not say that science has gone political?

For 76 years, Pluto had been designated a planet but it is no longer considered one today. It is now dwarfed by voting. It has not reduced in size neither did it shift from its previous position. The same science that branded it a planet has grown enough to realize that it shouldn't have been one in the first place. And how are we sure that it will not grow tomorrow and find out something extra about Neptune or Mars? Are they actually finding these things in nature or are they just speculating about them? How much of reality has science discovered? Would it then be appropriate to claim or conclude at the moment that all that science claimed to have discovered so far are actually the real existents? It is not to say that science cannot have beliefs about the external world. Like Carruthers (1992:160) argues, “...provided that there is in fact a physical world, and that the processes that give rise to our beliefs about the world (either

perception, or natural selection, or some combination of the two) are in fact generally reliable ones, then we do have knowledge of the world. But this will be of little help to us in combating skepticism”. It does not settle our doubts about some of these beliefs, especially those that conflict with one another.

Considering the distance of the earth to these objects in space, would it not be very healthy to treat such claims with deliberate skepticism? The same object will appear different when viewed from a distance than when viewed closely. It is self-evident that the same porch when viewed from one of its corners appears curtailed, but viewed from the middle symmetrical on all sides; and the same ship seems at a distance to be small and stationary, but from close at hand large and in motion: and the same tower from a distance appears round but from a near point quadrangular (Moser and Arnold 2013:85). Earth's distance from these bodies makes it impossible to give an exact detail of what they actually look like. In this light therefore, Omeregbe (1999:135) subscribes that we can never know what things really are, but only the way they appear to us. If this is actually the case, then suspending judgement on this subject appears to be the most plausible, honest option.

Let us consider another dimension to this discussion. The method of scientific procedures that bring about these findings and discoveries is replete with inconsistencies owing to human involvement, assumptions, and over familiarity with persons and techniques which end up compromising the methods.

SCIENTIFIC FRAUD AND MISCONDUCT

John Darsee was former 'Harvard' researcher, a research fellow at the Cardiac Research Laboratory. He was dubbed the most remarkable of his colleagues who worked in the lab. In fact, within a short time of his stay at Harvard, Darsee published five outstanding papers that earned him an excellent reputation as a medical researcher. Thus, in 1981 he was offered a faculty position, barely within two years of his stay at Harvard. His colleagues at the lab were simply worried about his fast rising success and cast some doubts about his papers and the accuracy of his research results. The director at the lab then carried out some investigations and discovered that he had altered dates of his work and faked some data in a major heart study. When the news got to the lab head, he was laid off.

By October 1981, more discrepancies were discovered in his data and those collected by other centres that were conducting similar research. This got the National Institutes of Health (NIH) involved. They found some more details of scientific misconduct and faking large results of experiments he never conducted. The NIH barred him from federal funding for 10 years. As it turned out, further investigations revealed that he had used fake data during his undergraduate studies between 1966 and 1970 at the University of Notre Dame. As Newman (2000) revealed, “eventually investigators at the National Institutes of Health discovered that data for most of his 100 published studies had been fabricated”. Even his co-authors were oblivious of his work and misconduct. This is another case in perspective.

But prior to these investigations he was widely celebrated and his works cited here and there. Who would have believed then that such fabulous papers were skillfully doctored? How many of such papers have continued to pervade most revered and celebrated journals? All these discoveries came to limelight simply because his fellows at the lab were skeptical about his results. What if they had reserved their skepticism? How many of such blunders and fraud will

be revealed today should scientists and scholars adopt a skeptical stance professionally? This will leave a lot more to be envisaged. Let us leave those aside and further consider... What about his supervisors at the lab? What of the editors of these world class journals who reviewed edited these papers? Research papers and their results must have been flying into journals without thorough scrutiny. Who knows how many more thorough investigation would expose? Would one be considered eccentric if he or she treats such results and reports with skepticism? How about the co-authors whose names joined the league? None of them ever found out. And this is the chief way of science? Could science be this blind? How many of such falsehoods has science celebrated and promulgated over the years, and how do we even find out? And his undergraduate studies were found to have followed the same route, at least eleven years after they were completed. After all he was not alone! The supervision must have been done hurriedly and laxly. The environment and atmosphere must have been supportive enough for it, encouraging hurried pace and placing high premium on productivity at the expense of the process (and we think science lacks this thorough scrutiny most times and is obsessive about discovering, inventing, producing but paying little attention to the methods and the details). The co-authors must have given their consent without even going through the work or making contributions to it. These revelations further strengthen skepticism.

Somewhere in very close climes lies another extraordinary case from the University of California in San Diego. It begins with the curriculum vitae of Dr. Robert Slutsky, Wunderkind and heir apparent to the dukedom of cardiac radiology. The resume on file lists hundreds of publications, grants, awards, appointments – a startling prolificacy for just seven years (Scott 1987). Dr. Slutsky grew robustly to assistant professor in a very short time and 'quickly' earned a national reputation in medicine. His colleagues kept wondering how he was able to file out a new research paper in less than two weeks. Suddenly the story turned sour. While reviewing his papers for full professorship, another professor shockingly discovered a statistics Slutsky repeated in two different papers. This again triggered investigations. His case turned out to be one of the 'most extensive academic fraud cases in recent history'. He claimed to have conducted tests and experiments that were in fact never done. He faked data, inflated figures, recycled statistics and even added other researchers' names to his papers without their consent in order to suggest verisimilitude. Like Darsee's case, these co-authors knew little or nothing about the papers. As it eventually rolled out:

Slutsky's seemingly implausible productivity was rewarded. In spite of some concerns about his work, his supervision remained lax. There were ominous signs, such as sloppiness, but associates did not look closely, out of reticence or even self-interest... Full professors and underlings who stood to gain by their affiliation with Slutsky turned a blind eye to his practice of putting their names on his papers. Flattered by "favor", they inadvertently lent him credibility and helped camouflage his fraud (Scott 1987).

Now the question is: how many of such scholars today and their works will be found to have been faked by tomorrow? Should we ahead to believe their findings? How does one even know when they are found, when it is reticence at work, or when self-interest has been the clearance mark? How much objectivity is attainable in scientific research and findings? Someone would say that it has been over three decades ago. To this one would ask:

- Has scientific methods changed over these decades?

- Does it not suggest that some of our discoveries today may be found out to be forged one or two decades to come?
- Has science woken up with the desired skepticism that will curb these scientific hoaxes?

There are more numerous examples today. And it is not geographical, racial, nor continental. Hwang Woo-suk in 2006 was found to have fabricated a series of stem cell experiments, though he is considered one of the pioneering experts in the field. Diederik Stapel was found guilty of academic fraud in several publications. Surprisingly, his works have been published in reputable psychology journals and publications and also in worldwide newspapers like the New York Times. Dr. Anil Potti's cancer research was found fraudulent and some of the patients involved with his research filled in a law suit against Duke University where he works. Mahesh Visvanathan and Gerald Lushington, computer scientists had so much of their work lifted from other scientists' work, that even the entire presentation had come from someone else's journal article, a presentation that they had planned to make at a conference in Sweden, which they ultimately did not make due to accusation of plagiarism (OnlineUniversities 2012). However, there could also be the other side to this. For instance, the "Clever Hans effect" confirms that an observer can give unintended cues that can affect the observer and thus lead the observer to self-delusion, while in all honesty (Shermer 2002:159).

Andrew Wakefield's research led to increases in the number of cases of measles and mumps in the U.S. and Europe, with some areas reporting very dangerous and wide outbreak (OnlineUniversities 2012). Investigation in 2010 disclosed that Wakefield and his crew altered facts and he himself was paid off by a lawyer that was planning to file a court case against the manufacturer of the vaccine. Just recently, one of University of Tokyo's most prominent scientists, Yoshinori Watanabe, was found guilty of scientific fraud in at least five papers. Two of the papers were published in *Nature*, two others in *Science* and one in *EMBO*. According to (Cyranoski 2017), "The University of Tokyo investigation found that intentional enhancement of images was common in Watanabe's lab. According to the report, Watanabe even taught members how to perform these alterations to make them more convincing – a practice confirmed by a former lab member..."

All the above instances point to the glaring fact of human factor and manipulation in scientific findings and research. One might say that they are always caught and brought to book. And someone would ask: how many are caught? How many will ever be caught? How does one validate today's findings in the light of the above? If these inconsistencies can happen in worldwide newspapers and world leading journals, who should one believe? How do we ascertain when their reports are accurate and when they have been manipulated? The closest answer to these questions is to simply withhold judgment over matters as these and believe nothing than believe error.

Consider this personal illustration. Juliet has been an outstanding journalist making waves in her career. Her fiancé Ted is a top-notch banker and expert in finance, especially the stock exchange. Juliet revels in his expertise and always boasts about him whenever she is with her friends. In fact she depends on him directly for information for most of her blog updates on business and finance. One day, Ted had a hectic day and couldn't check the market closing for

the day as he regularly did. And it was Juliet's custom to get the update early in the morning for her blog. Just like before, she gives him a warm hug after getting the usual details on the stock market. She quickly concludes her business update on her blog before setting out for work. As she prepares for the news at noon in her office she suddenly discovers conflicting figures for the market closing the previous day. Now she is stuck in the mud – Ted is an expert and has never missed it before now. Her news reports are always accurate. In the given scenario, which report should she go with? She eventually follows Ted's report for some personal considerations, her trust, love and relationship with him all inclusive.

It was an embarrassing moment after the news as she went into her producer's office for questioning. Ted never told her he couldn't check the market closing the previous day because of many schedules; how could he appear so lazy before his protégée and wife-to-be whom he has always motivated to be very hard working in her career, leading the trail himself with an excellent career? She returns shattered, oblivious of what next to do with him. This scenario is trite and commonplace. Just like Ted, a lot of times we deliberately make assumptions just to cover our reputation, protect our image, maintain a relationship or impress someone else. This is a general human phenomenon and it is not lacking even among scientists. Other times we do it reluctantly in order to escape an embarrassing situation or just take the easy way out. Sometimes our level of expertise and years of experience in a field may make us assume we know enough to predict without error and yet claim certainty. This is commonly patronized in the scientific world. For this reason, scientific findings may not be completely pure and devoid of these subjective traces. And the best epistemic stance to take over such situations is to suspend judgment and withhold one's belief. Like Juliet too, we get too certain over certain things that we do not care to confirm or verify their accuracy or veracity. All the while she had believed Ted without reservations until this incident. Many a time we place so much trust on certain sources of knowledge that we consider it both unnecessary and threatening to question them. This tendency too is a common feature in scientific discourse.

CONCLUSION

Skepticism is the ability to see things from the other unseen eye and thus make some 'reservations' in judgment. It is modest enough to admit errors, loopholes and inconsistencies, and therefore submits that judgment be suspended over certain matters. As Stumpf (1994:120) maintains, skepticism is not the denial of the possibility of finding truth, nor is it a denial of the basic facts of human experience. It is rather a continuous process of inquiry in which every explanation of experience is tested by a counter-experience. It is secure enough to admit that certain matters seem to be opposed to others and both propositions have equal force. Science on the other hand is quite categorical and 'authoritarian' that it rejects the other proposition that is equally opposed to its principles; so in not admitting this, science is sometimes immodest in her claims and findings. Many of her claims appear too bogus, and most times, without 'reservations'. Skepticism is more sanctimonious than science. The only modest science is skepticism, sincere enough to admit her limits in knowing. Skepticism is also the ability to see and bring out arguments that are opposed to each other and yet both persuasive in their force. This will lead to the suspension of judgment and thereafter it will birth tranquility, if not fortuitously. We therefore adopt Sextus' submission to suspend judgment regarding sophisticated, philosophical theories and complex scientific claims, but allow people to continue holding their everyday, commonsensical attitudes and beliefs about life and the

world in general. This brand of skepticism we choose to identify ourselves with from henceforth. And to it we term *soft skepticism*.

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