An Analysis of Gerald Heard's quotation using T.S. Kuhn's The Structure of Scientific Revolutions

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In Gerald Heard's, 1937, piece, *The Third Morality*, Heard states that "Newton banished God from nature, Darwin banished him from life, and Freud drove him from his last stronghold: the soul." Isaac Newton, Charles Darwin and Sigmund Freud are three men from three different centuries. All three men were scientific revolutionists of their time and all three men forced a paradigm shift in the eyes of Thomas S. Kuhn. Kuhn says that you must have a crisis to have a paradigm shift and all three men did just that. Kuhn's message is that when in a paradigm you are not trying to create a new paradigm, you are instead doing all you can to support it, prove it, or sustain it. Newton, Darwin and Freud tried doing just that, save the paradigm they were in. However, science is a set of arguments based on evidence and when information is found to counter what is known to be factual one should come forward, as did Newton, Darwin and Freud.

Everything changes, rules and facts change. Kuhn asks, what changes it? Facts are not truly facts. We can talk about facts within a paradigm but when there is a paradigm shift the facts change. All three men, Newton, Darwin and Freud caused the facts to change in their respective fields.

All three men were very similar in many ways. They were all big picture guys, not distracted by insignificant things, instead viewing ideas and concepts from a holistic, global vantage point. They were good observers. Newton was very proficient with his hands; he would construct his own experiments and craft his own instruments. Darwin was an expert at seeing things others overlooked and Freud was able to read people and gauge their verbal responses. Newton, Darwin and Freud all did what any good scientist should, they answered questions while at the same time posed new ones. They used their social connections and the knowledge and works from those who came before them to help them in their work. They all stated something significant which gained them world attention; which was many times met with resistance. Consider for example, Newton's mechanistic, reductionistic, imperialistic and materialistic approach to gravity. People were not satisfied that he did not provide an explanation but instead only a description. How could they accept or even understand his claims? Similarly there was Darwin and his disruption to the Great Chain of Being without explaining variation. Where God was once at the top of the Great Chain of Being and all others beneath Him, Darwin said that it is through nature that things adapt and change. Lastly there was Freud who explained what he believed was the sexual intent of people, however society did not want to accept it. Through these means all three men removed God from the picture as Heard's quotation stated. This lead to the idea that science was atheist. Hence these paradigms did not change easily. Kuhn explains why it is so hard to have a paradigm shift in the following quotations.

Usually the opponents of a new paradigm can legitimately claim that even in the area of crisis it is little superior to its traditional rival (Structure, 1996, p.156).

Kuhn provides an example of this when describing Coulomb and his electrical attraction devices.

In the eighteenth century, for example, little attention was paid to the experiments that measured electrical attraction with devices like the pan balance. Because they yielded neither consistent nor simple results, they could not be used to articulate the paradigm from which they derived. Therefore, they remained *mere* facts (Structure, 1996, p.35).

"Mere facts", is that not the initial step towards a scientific revolution? Simply because an idea did not fit in the current paradigm it was not accepted. One is always able to find a way to support the current paradigm and to refute the suggested changes to it. It is much easier to support a paradigm that is already the norm than to overcome the doubters and to cause a scientific revolution which is what Kuhn called paradigm shifts. After all, is that not what the purpose of the paradigm is, to help to promote inquiry and the exploration of scientific questions, to provide a structure to follow and to provide guidelines as to what is and is not acceptable? As alluded to already, Kuhn believes that in order to change a paradigm there must be a crisis, a dramatic overhaul of the way of thinking within the current paradigm.

For what is it that differentiates normal science from science in a crisis state? Not, surely, that the former confronts no counterinstances, On the contrary, what we previously called the puzzles that constitute normal science exist only because no paradigm that provides a basis for scientific research ever completely resolves all its problems (Structure, 1996, p.79).

This is why we have people who question the paradigm, test the paradigm and some who eventually change the paradigm. These are the people who cause science to be in a "crisis state", Newton, Darwin and Freud were some of these people.

Even in the area of crisis, the balance of argument and counterargument can sometimes be very close indeed. And outside that area the balance will often decisively favor the tradition. Copernicus destroyed a time-honored explanation of terrestrial motion without replacing it; Newton did the same for an older explanation of gravity, Lavoisier for the common properties of metals, and so on (Structure, 1996, p.157).

Here Kuhn explains that it is hard to cause a shift or change in the paradigm. The new idea is likely to be disputed and inconsistencies are more than likely going to be found within the suggested idea. The new idea probably has not been accepted as *normal science*. The old paradigm is what 'works' so why should it be changed?

What would science be if it were not for these men, these men who question, test, observe and analyze? The men (and women) who challenge the paradigm, not with the intention to change it, but to test it and to verify it.

Bibliography

Thomas Kuhn, *The Structure of Scientific Revolutions*, (Chicago: The University of Chicago Press, 1996).