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Vico's fifth stage: Are science and religion mutually exclusive?

In 1730 an Italian philosopher named Giambattista Vico published *Scienza Nuova*, which was his self-proclaimed masterpiece. Part of *Scienza Nuova* argues that civilizations go through a cycle of four stages, repeating a pattern of growth from a primitive condition to maturity, followed by decline. This cycle works quite well to explain the rise and fall of civilizations, and Stephen Bonnycastle expands the theory to explain cycles in the lives of individuals (Bonnycastle 135-150). Bonnycastle states that stage one is the joy of encountering something new; stage two is searching for the cause of things; stage three is seeing the overall purpose of something and stage four is losing confidence in what you discovered in stage three. By the time an individual or civilization reaches stage four there is a certain amount of cynicism or disillusionment that sets in. A civilization in stage four will then typically be taken over by more vigorous outsiders who are in stage one or two. An individual at stage four may restart the cycle at stage one in another field of activity (Bonnycastle 145). This is the process of recycling, or *ricorso* to put it in Vico's terms; disillusionment with one's existing condition which then drives you to re-start the process *in another field* at stage one. The *in another field* description is a key component of Bonnycastle's version of Vico's stages.

In this paper I will suggest a fifth stage for individuals, a stage that constitutes a major breakthrough *in the current field of study*. A stage five breakthrough is significant enough that it crosses ideological barriers to cause a paradigm shift in two or more disciplines. Thus a stage five breakthrough is interdisciplinary. By introducing a fifth stage in Vico's theory, one can transcend Kuhn's theory of incommensurability and thus allow for many aspects of science to be reconciled to religion without sacrificing doctrinal integrity.

The history of science has not been a steady linear accumulation of knowledge, but rather a step-function with long periods of time dominated by a particular understanding of how the world functions. These time periods are followed by a major interdisciplinary breakthrough that elevates the understanding of everyone. In each field of science “there were long periods dominated by empirically successful theories (successful by the standards of their day) but now wholly rejected” (Parsons 127). Once a major breakthrough is achieved, it is then refined, tested and perfected by other scientists as it finds its way into the scientific “canon.” Our collective understanding as human beings follows this same pattern; humanity seems to go along with a particular understanding of life and how the world works for a long period of time until someone makes a particular breakthrough that changes the paradigm for everyone. An example is Nicolas Copernicus and his heliocentric idea of the cosmos. Prior to Copernicus, mankind had viewed the earth as the center of the cosmos and all of our assumptions of reality were based on that viewpoint. The earth-centered idea was a scientific idea, but it was also endorsed by the Christian church as they interpreted certain biblical passages in a literal sense. The Church held to that interpretation because it fit both the theology and the science of the time. When Copernicus proposed that the earth was *not* the center of the universe (or even the solar system for that matter), and further provided sound scientific evidence for his claim, his ideas were

immediately branded heretical by the Church as they viewed them as challenges to the authenticity and authority of scripture. Copernicus knew the effect his idea would have, but went forward with it anyway under the banner of the pursuit of truth. Copernicus represents a stage five breakthrough, which is someone who is already at stage four in their current field of understanding but is driven by the idea of new truth and personal growth. Rather than simply start over at stage one in *another* field, this person provides an astounding breakthrough in their existing field of study. Further, this breakthrough is interdisciplinary, having such far reaching results as to require people in other fields of study to re-examine their current ideology or paradigm. In Copernicus' case, his breakthrough required both those in science and religion to re-examine their respective paradigms. Today humankind as a whole completely accepts the idea of a heliocentric solar system and we reconcile that idea completely with biblical scripture. Thus Copernicus fits the definition of an individual achieving a stage five breakthrough quite well – a breakthrough of enough significance in one's field that it changes the overall paradigm for all of humanity in a significant way.

The battle between religion and science in terms of who has the greater authority is well documented and has been going on for centuries. One of the problems humanity faces in this debate is the apparent closed mindedness of individuals. It seems that once we as individuals come to a certain knowledge of truth, or rather what we think is true, we tend to cling to that idea and defend it to death. When someone proposes an idea that challenges all or part of our "truth" we immediately and almost reflexively launch into a defensive posture, claiming why the new proposition cannot be true. We tend to defend our current position without giving the new proposition adequate review or investigation. Further, when we are convinced of a particular "truth" we seek supporting evidence to document why our truth is authoritative. The idea of

biological determinism was floated by Plato in the Republic, but was finally branded a lie (Gould 63). However the idea that blacks were an inferior race to whites remained ingrained in some cultures to the point that some scientists supported that belief with erroneous data. Samuel George Morton performed craniological measurements on a variety of subjects to prove that whites had larger craniums when compared with other races. He equated the larger craniums with greater mental capacity and subsequently intellectual superiority. His analysis showed a descending capacity from whites to Chinese, Malay and Native Indians, with blacks at the bottom of the list (Gould 87). However, it has since been found that Morton's summaries are "a patchwork of fudging and finagling in the clear interest of controlling a priori convictions" (Gould 86). This is a classic case of having a "truth" and defending it with data, even to point of having to manipulate the numbers. There may also be a problem with the premise, in this case the idea that larger craniums equate to increased intelligence.

In the creationism versus evolution debate, we see this same mindset established. Both sides reflexively defend their respective positions, and attack certain points that they deem as vulnerable of their opponent. We see this evident in today's debate when reviewing books by Richard Dawkins where he attacks many points raised by the creationism side, however most of the points Dawkins attacks are straw-man arguments – issues that have already been overcome in the field of theology. The problem is that the dissemination of the theological understanding to the masses takes time. It is safe to assume that there are many more professing Christians in the world today than there are experts in scientific evolution. The information disseminated in the scientific world regarding evolution is likely much faster, reaching a much narrower cross-section of humanity. The information in theological circles does not reach the masses so quickly, mainly due to the sheer size of the population. Once the information is disseminated, it

reaches a much broader cross-section of humanity than the scientists. Christians from all walks of life and every conceivable educational background are involved and some have achieved a higher level of understanding than others. Their receptiveness to new ideas depends upon where these individuals are in their personal development; some are only at Vico's stage one; some at stage two, etc. Thus the Christian population is more difficult to change with new truth than that of the scientific community in general, as the scientists have a particular mindset that is more investigative and represent a much narrower cross-section of humanity and a more focused range of educational experience.

All this leads us to the topic of incommensurability, the idea that people with different ideological backgrounds, or paradigms, have difficulty communicating with those whose paradigms differ from their own. This seems to be due mainly to the different mindsets and sometimes even different language used in the various fields of study. The idea of incommensurability was documented by Kuhn in his book *The Structure of Scientific Revolutions*. Kuhn argues that since individuals hold to different paradigms, and many of those paradigms have a unique language all their own, it is difficult and perhaps impossible for proper communication to happen across these competing paradigms (Kuhn 50). The scientific community has difficulty communicating with the religious community and vice-versa. They hold different base assumptions and their language is different. If we combine the idea of incommensurability with the apparent close-mindedness of mankind, we have a recipe for disaster. Even when attempts are made to cross ideological boundaries, the close-minded aspect sets in and neither side appears to truly seek to understand the opposition. It seems to take someone with a stage five breakthrough to initiate true interdisciplinary dialogue toward truth. A breakthrough in one field of study that is of a large enough significance will *force* those in other

disciplines to re-examine certain aspects of their position, because now a particular point in their paradigm becomes vulnerable to the new information. When the new information crosses into a different field, the initial reaction is defend, defend, defend, which is usually followed by attack, attack, attack. But in the end, as in the case of Copernicus, the “truth will out” and seemingly competing ideas will be reconciled into one overall comprehension. Copernicus is a good example of a level five breakthrough because he understood the connection between his scientific work and theological teachings, and knew full well that a scientific challenge to certain theological ideas would have negative consequences for him as an individual. Copernicus’ proposition of a heliocentric model of the cosmos was published in 1543 and 107 years later, the heliocentric theory was widely accepted in the scientific and theological communities (Parsons 1). It only took a little over a century for the incommensurability to be overcome!

There is evidence that certain aspects of religious thought are closer to scientific thought than once believed. In particular, many of the Eastern religious philosophies have a very close relationship to quantum theory, but the Eastern mystics arrive at their conclusions in an intuitive, non-intellectual way through meditation and inward looking enlightenment (Capra 34). Through this process, the mystics come to understand that all physical things in nature are somehow related (Capra 80). We see that same idea expressed in quantum physics but it is discovered empirically rather than through intuitive methodology (Capra 208). This similarity in understanding suggests that there is more than one method of obtaining approximate truth. The scientist seeks truth through empirical pursuit and reasoning, the mystic through intuition, meditation and enlightenment, yet both arrive at the same approximation of truth. In this regard, both modern physics and Eastern religious philosophies share a common understanding of the nature of the physical world. Further, the mystic states that a complete understanding of the

whole is not feasible, and thus he abandons any attempt to give a *reason* for things (Capra 290).

The scientist admits the limitations of observation and reason of obtaining an exact answer, so he is satisfied with an approximation of reality (Capra 334). Nevertheless, the scientist continues to seek for the source or beginning of things through empirical pursuit. Capra suggests that perhaps science and mysticism should seek a synthesis or combining of forces since both methodologies of intellect and intuition appear to be satisfactory methods of discovering truth (306).

This brings us to the place of introducing a concrete example that is greatly debated today, the ideas of evolution and creationism. If a potential synthesis of intellectual pursuit and intuitive pursuit is valid, is there some reconciliation to be had between these two apparently disparate philosophies? Can the incommensurability between evolution and creationism be bridged? How far apart are they really and what are the main obstacles? One traditional view of the Church has been a literal interpretation of Genesis in regard to the origin of life and age of the world. The world was deemed to be 6,000 thousand years old and humankind was proclaimed to have originated through a special creative act of God. It wasn't until Charles Darwin published his work titled *The Origin of Species*, which proposed that the origin of humankind was not necessarily a special creative act of God but could be explained through natural processes, that the traditional view of the Church receive any authoritative challenge. Darwin's theory of evolution challenged the traditional view of the Church both from a time perspective and divine intervention perspective. His theory states that the process of human evolution occurred over millions of years, which challenged the Church's idea of the earth being only 6,000 thousand years old. Further, the theory of evolution by natural selection means that God did not intervene in the physical creation of mankind by a special creative act. The

publication of Darwin's ideas has caused a rift between science and the Christian Church much like that caused by Copernicus in the 14th century.

One of the problems is that historically both science and the church only saw the potential for further truth within the bounds of their respective field of study. Each discipline had the idea that they were the sole source of truth, and that any attempt for a unified understanding of things would come through their own field. In physics, for example, Hawking states that "The quest for such a theory is known as 'the unification of physics.' Einstein spent most of his later years unsuccessfully searching for a unified theory" (Hawking 155). The great Christian apologist Cornelius Van Til taught the necessity for systematic theology, which is a unified understanding of theology, anthropology, Christology, soteriology, ecclesiology, and eschatology (Van Til 23). But Van Til's thinking is like that of Hawking, in that the unities do not bridge into other fields, but serve only to unify the different theories within a given ideology. Van Til goes further to suggest that unity between differing ideologies is not possible, that "abstract epistemological neutrality is an illusion and that, given the kind of God revealed in the Bible, imagined neutrality is actually prejudicial against God" (Bahnsen 146). In other words, unless all ideologies presuppose the existence of God, humanity is doomed to Kuhn's incommensurability. But those views do not appear to be so strong within the Christian church any longer, as authoritative science can help yield a new understanding of the scriptures. Since the publication of Darwin's work, there has been much discussion, study and modification of the Church's position on the origin of the world and human life. The Church has been forced to look deeply into what was simply assumed to be a proper interpretation of scripture. In looking deeper, the Church discovered that there may be room for accepting Darwin's theory without violating scriptural integrity.

One of the obstacles between evolution and creationism is the argument over the age of the earth. Evolution requires millions of years for the process to develop, so how can the traditional Christian interpretation of a 6,000 year old earth be valid? This obstacle is addressed by Richard Dawkins, one of the world's most recognized and outspoken atheistic evolutionists. In his film *The Genius of Charles Darwin*, Dawkins challenges many Christians regarding their 'young earth' position and even goes into the public school systems deriding teachers for not taking a more forceful stand in teaching an earth that is millions of years old. Dawkins blames the Church for ignoring science and promoting false ideas. But there are now three different views within the Christian church regarding the age of the earth. The first is the 24-hour view which holds to a literal interpretation of Genesis that the earth was created in seven days of normal 24 hour length each (Kline, Ross, and Hall 25). Using genealogies available throughout the Bible, the 24 hour view points to an earth that is approximately 6,000 years old. The second is known as the Day-Age view which interprets the days of creation as "six sequential, long periods of time. Integrating biblical and scientific data, they assert that the physical creation events reported in Genesis appear in correct sequence and in scientifically defensible terms" (Kline, Ross, and Hall 123). This view allows for an earth that can be millions of years old and does not deny scientific scholarship in determining the age of the universe. The third is the Framework View which argues that the creative days are not to be taken literally, but rather understood "by predominantly theological and literary concerns" (Kline, Ross, and Hall 217). In this manner, the record of Genesis creation is a theological framework rather than a literal interpretation, and the age of the universe in the Framework View is open to scientific interpretation since the scripture is silent on the matter (Kline, Ross, and Hall 218). Both the Day-Age view and the Framework View overcome the incommensurability between creationism

and evolution in terms of the age of the universe since both of these views allows for an earth that can be millions of years old.

A second obstacle in the evolution versus creationism debate is the idea of the origin of life. Was life created by a special act of God or did life spontaneously generate from non-living matter? A popular misconception about evolution is that it requires spontaneous generation or biogenesis; it doesn't. In *The Origin of Species* Darwin refers to the Creator on more than one occasion and in his conclusion states that "to my mind it accords better to what we know of the laws impressed on matter by the Creator, that the production and extinction of the past and present inhabitants of the world should have been due to secondary causes, like those determining the birth and death of the individual" (477). Some argue that Darwin didn't really believe in a Creator, but felt the need to placate religious individuals by including such references. But it seems more appropriate to simply take Darwin at his word rather than re-interpret him. His basic point in summary was "descent with modification through natural selection" (Darwin 448) which covers both macro and micro-evolution, but not biogenesis. A proper suggestion given by Denis Lamoureux, Associate Professor of Science and religion at St. Joseph's College is "caution is required when reading or employing the word evolution because it carries many meanings and nuances" (Lamoureux 9). That is because many scientists refer to evolution simply in macro and micro evolutionary terms, "there is no mention whatsoever of the ultimate religious or philosophical character of these physical processes" (Lamoureux 10). However that understanding can be drowned out by some of the more vocal proponents of biogenesis like Dawkins who likens any form of evolution with biogenesis and atheism, and states that "if you are asking me if my more global purpose is a battle against religion, it is" (Gatehouse 15).

But how does the Christian community respond to the use of evolution in macro and micro terms? As with the age of the earth, the Christian community is actively involved in taking another look at scripture based on current scientific findings. The traditional Christian view has been that the scripture is the sole authority, however even the scriptures themselves provide for the idea of divine revelation through the study of nature as indicated in passages like Psalms 19 and Romans 1 (Lamoureux 66). Thus, a more current view allows for a harmonizing of scripture with scientific statements based on observations of the physical world. This idea that there is a correspondence between the Bible and the physical world helps to align “the Genesis creation accounts with modern science” (Lamoureux 16). It allows for scholarly science to be harmonized with the theological realities of Genesis without sacrificing doctrinal integrity. It also removes the disconnect between the witness of the natural world with the scriptural witness. Both witnesses now tell the same story, one from a scientific viewpoint and the other from a theological viewpoint.

The Theologian B.B. Warfield accepts evolutionary findings and states that “the products of natural history could be the consequence – at the same time – of both natural forces and divine action” (Finlay 85). Warfield called this concept “concursum.” But even with concursum, there are varying degrees of understanding of how science and scripture interact and which has certain authorities in what areas. It is truly a current area of much discussion and debate. Lamoureux has identified five different categories on the origin of the universe and life and compares the varying degrees of religious and scientific thought held by each (see appendix). The categories start with Young Earth Creation which harkens back to the young earth defenders and rejects all forms of evolutionary theory, and finishes with Dysteleological Evolution which accepts all forms of evolutionary theory, including biogenesis, and rejects the idea of God altogether.

Between these two extremes are three categories that provide a bridge between evolution and creationism. Of these three, Evolutionary Creation (or Theistic Evolution) and Deistic Evolution provide the best harmonization of science and religion. Both views affirm teleology, the idea that there is a design in nature and life overall. Both affirm a universe of 10 to 15 billion years old in line with current scientific statements. Both accept the concepts of micro and macro-evolutionary theory, again in agreement with current science. Both theories affirm the idea of God's activity in the origin of the universe and life, which only conflicts with those scientists who hold that evolution must include biogenesis. The main difference between Evolutionary Creation and Deistic Evolution is that Evolutionary Creation affirms that God is currently active in the lives of men and women, where Deistic Evolution maintains the concept of an impersonal God who never enters the natural world (Lamoureux 44). But that has more to do with Christian doctrinal differences than any dissonance with modern scientific theory. Thus, we can conclude that current Christian scholarship does not necessarily deny the concept of macro and micro-evolutionary theory. This conclusion required a re-interpretation of scripture by not forcing the Genesis account of creation to be taken in a literal sense. As explained earlier when reviewing the age of the earth, the new Christian thinking allows for certain scriptural passages to be interpreted in an allegorical or framework literary style rather than a straightforward literal style. One reason for this allowance is the idea that the "primary purpose of the Genesis text is to communicate theological truths about the God of Israel against the backdrop of polytheistic deities of the Ancient Near East, rather than to answer the specific, process-oriented questions of the modern scientific age" (Moreland, Reynolds, Davis 82). Another reason is that it is not logical to expect the 31 verses of the first chapter of Genesis to provide an exhaustive scientific treatise on the origin of life. Some argue that to interpret Genesis in any form other than a strict

literal interpretation is simply to acquiesce to modern scientific theory, particularly the Darwinian idea of evolution. But that charge is not necessarily true. As explained earlier, the natural world does offer significant insight into divine revelation, so to deny certain understandings of the natural world is in effect to deny divine revelation. As Dawkins states, those who deny true scholarly science in the realm of nature are classified as “history deniers” (Gatehouse 14). In fact, one of the highly regarded guides to correct biblical interpretations states that scriptural passages should be interpreted figuratively when their literal interpretation would “involve a manifest contradiction or absurdity” (Terry 159). However, Terry does go on to explain that when this idea is reduced to practice, it simply becomes an appeal to every man’s rational judgment. Vico’s theory on the stages of life helps explain why there remain differing views in the Church on how much of evolution should be accepted. Individuals are at varying degrees of understanding in their overall view of life, science, and religion, so each will have a differing view of “truth” in this regard. The scientific community is a smaller overall population to begin with, making it easier for all to share a more common paradigm. Further, scientific evolutionists have all been classically trained through university studies; not so in the larger population of the Christian community. Thus, the Christian community has a much broader level of education levels represented, making it more challenging for all members to agree on specific scholarly ideas.

But what about the scientific statement on biogenesis, the idea that life naturally evolved out of non-living matter? Physicist Stephen Hawking admits that principles of physics break down at the big bang singularity, so he is looking for a way around that breakdown. Thus he is working on the idea of imaginary time that removes the singularity of the big bang and creates a bowl shaped, self contained universe with no beginning and no Creator (Hawking DVD).

Dawkins outspokenly states there is no need for a Creator, and that natural processes give us a full and complete picture of the origin of the universe and life. But these views go beyond the common understanding of macro and micro-evolution by inserting a *cause* or *reason* for existence. Dawkins states that “evolutionary history has no meaning, that evolution has reached many millions of interim ends (the number of surviving species at the time of observation) and there is no reason other than vanity...to designate any one as more privileged or climactic than any other” (Finlay 87). He goes on to state that “the universe we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil and no good, nothing but pitiless indifference” (Finlay 87). Other modern scientists describe this idea as “teleology without teleology” or “purposiveness without purpose” (Weber 848). Not only do the laws of physics breakdown at the big bang, but the known concepts of life and physics both break down if one assumes a biogenesis of life. Our current understanding of any living thing is that it is generated from some other living thing. We have no evidence or example on how life could spontaneously generate from non-living matter. Thus the very concept of biogenesis requires a priori knowledge, just like the concepts of creationism. Both concepts require faith, believing in something that cannot be seen or fully understood. Further, both address the idea of ultimate purpose, cause and reason when discussing human life. Since we have already determined that both methodologies of empiricism and intuition appear to be satisfactory methods of discovering truth (Capra 306), then science and religion should be able to work together on the concept of the genesis of life. Creationists have given scientists much credit in recent years in harmonizing the theory of evolution with the scripture, and science should recognize that effort and admit that biogenesis may not be exact science. Even Dawkins acknowledges a bridge of sorts by admitting that senior clergy and theologians have no problem

with evolution “give or take the odd wobble over the precise paleontological juncture when the human soul was injected” (Dawkins “Greatest Show” 6). So where do we go from here?

Christianity needs to do a much better job in educating its audience to the idea that not all scripture must be interpreted literally, but a proper hermeneutic allows for figurative and allegorical interpretation where necessary. It is obvious that two short chapters in Genesis are not enough to provide us with a scientific treatise on how God created the universe and human life. Since the Bible supports the investigation of nature as a means of further divine revelation, then scholarly science should be embraced by the Christian community rather than shunned. The Christian community should embrace scholarly science as it helps shed light about creation’s formational history. “Theology done in isolation from the rest of the intellectual enterprise is unlikely to promote growth in our knowledge of God and even more unlikely to promote growth in our knowledge of his works” (Moreland, Reynolds, and Davis 175). As long as the Christian community can maintain the idea that human life came from God and that God gave man a soul, does it truly matter if humankind was a special physical creation of God or evolved? In either instance, the end result is a human being gifted with a soul given by God and the scriptural text of Genesis is not damaged. Further the Christian community needs to do a better job of educating its audience to certain agreements that Christian scholarship has with science in regard to the origin of the universe and life. The Christian community should be open minded to scientific scholarship that would allow their advancement in understanding the works that their God has created.

What about the scientific community, what is their obligation in this debate? The scientific community needs to acknowledge that biogenesis is an argument from belief, just as creationism. With that admission, scientists would not be seen as a threat to scriptural truth, but

rather a source of trustworthy scholarly information in the overall search for truth. Further, the scientific community should clarify in what context they use the term evolution, either in a normal macro and micro-evolution context or in a biogenesis context. That clarification would help overcome the incommensurability that exists between the two ideologies.

Finally both sides, religion and science, should acknowledge that truth can be obtained through empirical pursuit as well as intuitive pursuit as stated by Capra. Both sides should acknowledge the interrelatedness of their disciplines and the fundamental inability of each person to know everything. These acknowledgements would help open the closed mindedness that seems to be inherent in humankind. By giving the other side a certain amount of credit when due and treating each side respectfully, perhaps religion and science can put their empirical and intuitive forces together in the search for an ultimate truth.

Does Darwin belong in the category of a stage five individual? Clearly his theory of evolution sparked an ongoing debate between science and religion, so his breakthrough definitely fits the definition of being significant enough to cause interdisciplinary investigation. In terms of the ultimate reconciliation of evolution and creationism, the jury is still out. But perhaps with more time, education and open mindedness, the two ideas can be reconciled much in the same way as Copernicus' idea of a heliocentric solar system or physics reconciliation with Eastern religious philosophy. Only time will tell.

Appendix (Lamoureux)

	Young Earth Creation	Progressive Creation	Evolutionary Creation	Deistic Evolution	Dysteleological Evolution
Teleology	Yes	Yes	Yes	Yes	No
Intelligent design	Yes	Yes	Yes	Yes	No
Age of the universe	Young - 6,000 years	Old 10-15 billion yrs.	Old 10-15 billion yrs.	Old 10-15 billion yrs.	Old 10-15 billion yrs.
Evolution of life	Rejects macro-evolution. Accepts micro-evolution	Rejects macro-evolution. Accepts micro-evolution	Accepts macro and micro-evolution	Accepts macro and micro-evolution	Accepts macro and micro-evolution
God's activity in the origin of the universe & life	Yes, direct, in 6 days	Yes, direct for basic kinds of life. Intervenes over billions of yrs.	Yes, indirect. Ordained and sustained natural process.	Yes, indirect. Ordained natural process.	No, natural processes only.
Interpretation of Genesis	Strictly literal.	Generally literal, but creation days are geological ages.	Divine Theology with scholarly science.	Irrelevant origin myth.	Irrelevant origin myth.

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