

Metaphor or not metaphor: Harmonizing cosmological and scriptural-text account of creation

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Abstract. Development of scientific knowledge had previously undermined people's embrace of the scriptural-text account of creation when cosmology established its explanation of the coming into being of the universe. From the perspective of those who embrace the scriptural-text account, there are two main strands of responses to the cosmological proposition, i.e., first, those who reject it and hold on tightly to the scriptural-text account literally and, second, those who receive it and consequently have to find an alternative metaphorical interpretation of the scriptural-text account. Schroeder's (1992) evaluation of astrophysical and cosmological principles resulted in an unexpected account that the coming into being of the universe fits into the literal interpretation of the six-day process (six times 24 hours), but that the observation was made from the point of view of an observer present at the very initial stage of the process. The paper concludes that a harmony between scriptural-text and cosmological explanation cannot be achieved without allowing a level of metaphor involvement in the interpretation of the account.

Keywords: metaphor, cosmological, creation

1 Introduction

Among metaphor theorists, it has been widely made known that metaphor is a cognitive strategy, whether deliberate or undeliberate, that allows structuring of concepts by linguistic means. Metaphor deals with perception, and so metaphor is more of a way of depicting than a way of understanding. Tobing (2018) suggested a reconstructive perspective illustrating how metaphor expressions can come about. Initially there is first an observation of a behavior (or an entity); subsequently, when the observed phenomenon is to be expressed linguistically, the human mind algorithmically searches and finds a word having the schematics that match the observation. Gentner (1983) posits that metaphors are essentially analogy, in other words, they involve a matching of structures by linking and aligning key items across concepts.

Scriptural text is perceived as text that relies heavily on metaphors or extended metaphors. Without having to look too far, one can immediately encounter a major metaphor at the very beginning of the text in the six-day account of creation. Perhaps prior to the advent of scientific knowledge it would have taken a giant mental leap for a person to be able to embrace the proposition that all that naturally exist took merely several days to come into being. Nevertheless, even the scientific-minded Isaac Newton held firmly to that notion. How much more it has stretched when scientists (Penzias & Wilson, 1965) found scientific evidence for the theoretical explanation that the universe all began from one mega explosion. George Gamow, Ralph Alpher and Robert Herman proposed the scientific explanation of the coming about of

the universe through an extreme explosion ("Big Bang"). According to this view, thermal radiation remaining from the explosion should still be present and detectable. Penzias and Wilson discovered the radiation at Bell Lab published their finding in the *Astrophysical Journal*. Assuming that this scientific explanation is well grounded, this entails that universe has an age. Scientists later calculated, arriving at an estimation of approximately somewhere between 14 to 20 billion years (Heimler & Neal, 1979) *Principles of science*.

Those who embrace the proposition of the six-day process of coming into being of the whole universe had to figure out how to deal with emerging scientific view and one rather effective conclusion was to say that the scriptural-text account must have been a metaphor. The six days were not literal; at best, it explains how those different states and entities came about stage by stage, putting things into order one stage at a time. This was the only way to deal with it without rejecting the scientific explanation completely.

2 Theoretical Review

2.1 Indirect vs. Direct Processing of Metaphor

Two models of processing have been suggested for metaphors, namely, a three-stage model and the direct processing model. According to the three-stage model, also called the indirect processing model, postulated by Searle (1979), people first access the literal interpretation of the metaphor, then if the literal meaning does not logically or contextually fit the utterance, a search for the figurative meaning is triggered in the mind. The experimental implication of this model is that if the figurative interpretation can only take place after the literal interpretation is rejected, it therefore predicts that a statement should take longer to comprehend when it is metaphorical.

Several studies have tried to demonstrate the Searle's notion. Among them is one that showed that when metaphors are presented after a short context (one sentence), it takes longer to read than literal sentences (Inhoff, Lima & Carroll, 1984). However these studies also have showed that after a long supporting context, metaphors can be read at the same speed as literal sentences. The crucial question here is in the measuring of the speed. The direct processing model suggests that it is not necessary for the entire metaphoric phrase to be first processed and rejected. Contrarily, metaphors may be processed directly and automatically by accessing the literal aspects of the source to construct metaphoric meaning in the target. In the example given by Ortony (1979),

John is a giraffe

the highly salient feature of GIRAFFE, i.e., "tall" is compared with the corresponding feature in the JOHN, namely his height.

2.2 Category Assignment Theory

In category assignment theory, metaphor expressions are considered as a kind of *Category inclusion statements*, just like "Sally is a sophomore" or "an apple is a fruit" (Glucksberg, Keysar, McGlone, 1992). In the metaphor "Achilles is a lion", Achilles is therefore assigned into the category of ENTITIES THAT ARE BRAVE not as LARGE REDATORY FELINES which would be a literal take of the expression.

In this view, the metaphor “generates” a more abstract ad hoc category: ENTITIES THAT ARE BRAVE which is a superordinate category for lions and Achilles. According to this theory, these super ordinate categories are produced in real time while reading or listening to the expressions. The theory suggests that such categories are not conventional and are formed on the basis of highly abstract qualities which are ordinarily associated with the source.

Cigarettes are time bombs.
 OBJECTS THAT SEEM HARMLESS BUT ARE EVENTUALLY
 DEADLY*
 (Glucksberg and Keysar, 1991).

Jobs are jails.
 SITUATIONS THAT ARE CONFINING, DIFFICULT TO ESCAPE
 FROM,
 UNPLEASANT*
 (Glucksberg, Keysar, & McGlone, 1992)

The ad hoc category refers to some of the properties associated with the conventional category. The source must “epitomize and symbolize” the category to the hearers or readers (Glucksberg and McGlone, 1999: 1546). The speaker or reader must form a new superordinate category for each context.

My lawyer is a shark.
 PREDATORY ENTITIES*

A pre-existing category is not identifiable, the metaphor creates an ad hoc category PREDATORY ENTITIES*, SHARKS, as the source, is a prime example of the category not CARTILAGINOUS FISH (Glucksberg, Keysar, & McGlone, 1991).

3. Analysis

3.1 Harmony between scientific account and scriptural text through the metaphor view

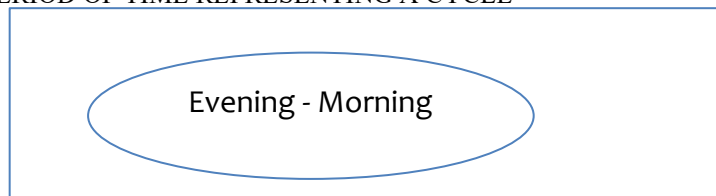
One approach theologians take in order to harmonize the scientific account and the scriptural account of the origin of the universe can be represented by Ramm (1964: 145) who stated that “In view of the fact that such a great array of geologists and theologians accept the metaphorical interpretation of the word ‘day’, the case for the literal day cannot be conclusive nor the objections to the metaphorical interpretation too serious.” Young (1990) postulated the Day-Age theory that treats one day a period of time or an age which may last up to millions of years. This approach helps solve the account of the gradual evolution of life-forms on this earth. The day-age theory does not accommodate context the fact that each of the six days of creation consists of an evening and a morning. If evening and morning are not literal, they need some form of metaphorical interpretation. Therefore from a literal and linguistic perspective this theory seems weak. The following is an analysis applying category assignment theory to key words in the scriptural-text account of creation.

<i>erev</i>	<i>boker</i>
‘evening’	‘morning’

A PERIOD OF TIME REPRESENTING A CYCLE

yom
'day'

A PERIOD OF TIME REPRESENTING A CYCLE



Category= A PERIOD OF TIME REPRESENTING A CYCLE

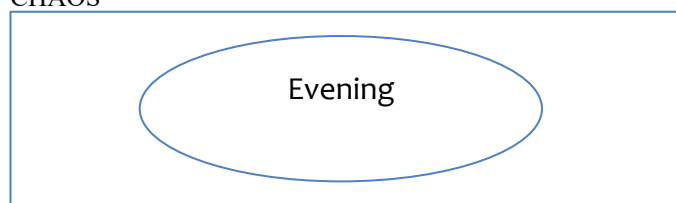
Fig. 1. Analysis of category assignment of 'evening-morning' and 'day'

Based on this analysis, the word "day" governs a concept of a cycle. Thus, evening to morning is perceived as a day and represents a completion of a cycle.

3.2 Harmony between scientific account and scriptural text through partial metaphorical view

Schroeder, a nuclear physicist and geoscientist who served as professor at Massachusetts Institute of Technology, (1992) postulates an explanation of how science does not contradict scriptural text. However on the other hand one needs familiarity with scriptural propositions to know what to look for in order to arrive at an explanation. Scientific knowledge is value-free but is made up of fundamentally honest propositions. The scientific community is critical of one another's works and the standard for rigor is that no possibilities are left uninvestigated. By denying the truth that science proposes, one rejects the notion that true science is based on the principle of honesty. By doing so, we take up an opposite view that there is some untruthfulness in science and essentially one suspects that science is up to some form of conspiracy. Schroeder explains that the crux is in the perspective of the observer. Observing from a point of time after the universe has taken its current shape, if the observer looks back in time then the observation does not match the linguistic description of the six-day process. But what if the six-day process was not observed from the point after the universe was present, but before it came into being? What was the observation like? This is the question that Schroeder that was critical in discovery of a possible literal interpretation of the six-day process. This was grounded not Schroeder's own linguistic intuitions, but by interpretations made well accepted commentary writer from the 13th century, namely, Nechamides (in Schroeder, 1992).

erev
'evening'
CHAOS

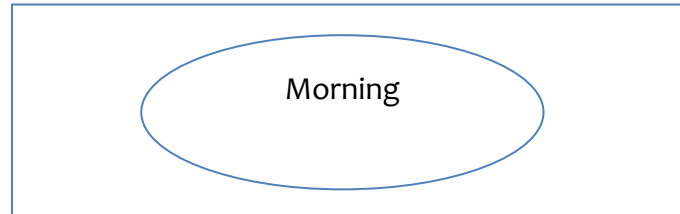


Category= STATE OF CHAOS

Fig. 2. Analysis of category assignment of 'evening'

boker

'morning'
ORDER



Category= STATE OF ORDER

Fig. 3. Analysis of category assignment of 'morning'

Table 1. Approaches in harmonizing the accounts

Word	Day-Age Theory	Relativity
	Manner of Interpretation	Manner of Interpretation (adopted from Nechamides)
<i>Yom</i>	Metaphor (‘era’)	Literal (24 hours)
<i>Erev</i>	Metaphor (‘part of cycle’)	Metaphor (chaos)
<i>Boker</i>	Metaphor (‘part of cycle’)	Metaphor (order)

Schroeder found that because of the law of relativity, if the observer was standing at the point of view when the universe started from an explosion, then the time unit of the 24 hour would be experienced and perceived much differently than from after the process had been completed. According to Schroeder (1992) time itself was created at that point; in relativity theory, time and space are intertwined and can be considered one or inseparable; hence called ‘time-space’. Moreover, at that stage time and space stretched vastly as there was a rapid acceleration. After accelerating for a period of time the stretching or dilation weakened and slowed down. However, as the dilation had take place so rapidly and vastly, the perception of the amount of time that had been gone by from the perspective of someone present at the point when everything had come about is completely and immensely different to the amount of time perceived to have gone by through the eyes of the observer standing present when the whole process started. Based on his investigation he found that in the first 24 hour period, the universe would have expanded so vastly. According to Schroeder the first 24 hours is 8 billion years if equated to the perspective of an observer after the universe was completed. As reference just a little after the first 24 hour period, our solar system was formed, which took place around 9 billion years observed from after completion of the universe.

Table 2. Comparison of perception of time from different perspectives affected by the laws of relativity

Day	Time duration perceived by observer at beginning of process	Time duration perceived by observer at after the process
1 ST	24 hours	8 billion years
2 ND	24 hours	4 billion years
3 RD	24 hours	2 billion years
4 TH	24 hours	1 billion year
5 TH	24 hours	0.5 billion years

6 TH	24 hours	0.25 billion years
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The whole six-day period is equivalent to approximately 6 million million days from the perspective of an observer after universe completion. This is based on “the general relationship between time near the beginning when stable matter formed from the light” of 1:1,000,000,000,000 due to the stretching effect of the inflation process of the formation of the universe. And to put it in years, 6 million million years is approximately 16.4 billion years.

Therefore based on this scientific appraisal of the equivalence of the time it takes from the big bang to the formation of the currently known universe fits to the 6 day account, if we take the number of years to be around 16 billion. Based on this analysis, the six-day period was an account based on the point of view of the observer who was present at the beginning of the process.

4. Conclusion

Development of scientific knowledge had previously undermined people’s embrace of the biblical account of creation, especially in twentieth century at time when astrophysics advanced into cosmology in the profound understanding of the origin of the universe was disseminated across the world. There are many, doubtlessly, who reject the possibility of a harmony between the scientific and the scriptural-text account, such as Dabney (1972) who posits that if the first six days were in fact metaphorical, then “why not the former?” (1972: 254-255). However, among those who do, the question prevails as to whether the scriptural account was metaphorical or literal. The metaphorical approach would propose that the six-day account was a way of explaining how the elements of the universe came into being stage by stage, but that the temporal aspect was not literal.

Based on the analysis in the current paper, science does not necessarily contradict the six-day scriptural account of the origin of the universe. However in order to harmonize the two seemingly mutually-challenging views, one would have to know what to find. In Schroeder’s (1992) case, holding on confidently to the scriptural-text account of the origin of the universe, he embarked on an investigation on the cosmological basis on the origin of the universe with the critical question: according to the law of relativity, how vastly different would time be perceived from an observer present at the beginning of the process and another observer after the process of coming into being of the universe.

Based on his computations, the result that Schroeder arrived at was that altogether, the whole six days matches what cosmological theory had proposed: approximately 16 billion years. The conclusion is that the only way to accept the harmony between the scriptural-text account and the cosmological account of creation is to reject the notion that the scriptural account was completely metaphorical.

Nonetheless, some parts of the scriptural account had to be treated as metaphor, in particular the use of the word ‘night’ and ‘day’. Harmony between scriptural-text and cosmological explanation cannot be achieved. A level of metaphor involvement is still needed to unify all components. Ultimately, it is recommended that an interpreter of scriptural text be tactful but open to be willing to consider current updates of scientific explanation and be prudent in determining what parts of scripture must be viewed as metaphorical in order to arrive at a harmonious balance that science and scriptural text can contribute our understanding.

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