Reconstructing William Craig Explanation of Absolute Time
Based on Islamic Philosophy

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Abstract

After the advent of the theory of special relativity, the existence of an absolute time in nature was rejected in physics society. In recent decades, William Craig has endeavored to offer an interpretation of empirical evidences corresponding to theory of relativity with the preservation of an absolute time. His strategy is based on two viewpoints including dynamical theory of time and the Eminent God’s temporal being. After considering and criticizing these two viewpoints, using the well-known overall substantial motion of nature in Islamic philosophy and thus the realization of a general time for all the nature, we have tried to reconstruct Craig argument for an absolute time. Although Craig has considered some evidences from modern physics reasoning on an absolute time, the special advantage of the approach considered here is in this fact that it connects better the existing gap between the metaphysics and the physics of the argument.

Keywords: Absolute time; Theory of relativity; William Craig; The dynamical time theory; Islamic Philosophy; Nature overall substantial motion; General time
Introduction

In classical mechanics, the absolute universal time was considered as the measure of the events chronology and a parameter for determining their priority, posteriority, and simultaneity. This time which has been so-called as duration, considered to have been uniformly flowing independently from the world’s natural motions eternally like a straight line which is endless on its two extremes (Newton, 1846, p.77). In modern physics and with the evolutions that came about after Einstein presented the theory of relativity, the simultaneity concept was transformed into a completely relative concept in such a way that the acceptance of any sort of absolute or general time is envisioned baseless (Einstein, 1905, p. 897; 1920, pp. 25-27). In the contemporary era, the American analytic philosopher and Christian theologian, William Lane Craig, has offered another interpretation of the empirical evidence affirming the theory of relativity which not only doesn’t contradict existence of the absolute time but also is based on a metaphysical argument confirming the existence of the absolute time (Craig, 2008, pp. 21-41; 2001 a, p 247). From the viewpoint of the Islamic philosophy, Craig’s introductory arguments are incomplete; but, his main aim on the actualization of a general non-relative time can be proved. In this paper, after introducing and then criticizing Craig’s viewpoint in summary, we have tried to reconstruct his explanation of absolute time based on Islamic philosophical reasoning.

1. Craig’s explanation of absolute time

In order to understand Craig's explanation of absolute time, it is necessary to explain his basic principles in this regard:

1-1-Dynamic theory of time

In philosophy of time, was distinguished between two types of theories of time, the, A-theory (tensed or dynamic theory) of time and the B-theory (tenseless or static theory) of time. Briefly, in A-theory the division of time into past, present, future and passage of time are real, whereas in the B-theory this passage is an illusion and past, present and future is merely the relations one would describe an event as temporally located in relation to some frame of reference (McTaggart, 1908, pp. 458-459; Dyke, 2002, pp. 137-145).

Craig believes that an A-theory of time is correct, because the view of the common man is that time involves a past, present, and future which are objectively real and that events really do come to be and pass away in time. Furthermore, time in contrast to space, is essentially asymmetrical; while in the B-theory of time there is no asymmetry between "past" and "future", so that no reason to call one "earlier" and the other "later" (Craig, 2001 b, p 81; pp. 102-103).

1-2-God is temporal

Another of Craig's assumptions in explaining the absolute time is the belief in the temporality of God. He describes God completely as timeless in the state before the creation of the universe, but after the creation of time, he considers God is in time (Craig, 2001 a, p. 284). His argument in

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1 The asymmetry of time consists at least in two distinct which include the direction of time (Time is oriented toward the future, a feature which is often called "the arrow of time.") and the anisotropy of time (That is to say, being ordered by the earlier than later than relations) Craig, 2000, pp. 248-257.
In this regard is as follows:

"1. God exists.
2. An A-Theory of time is correct.
3. If an A-Theory of time is correct, there are tensed facts and temporal becoming.
4. If God exists and there are tensed facts and temporal becoming, then God knows tensed facts and is the cause of things’ coming to be.
5. If God knows tensed facts and is the cause of things’ coming to be, then God is temporal.
6. There are tensed facts and temporal becoming. (2, 3)
7. God exists and there are tensed facts and temporal becoming. (1, 6)
8. God knows tensed facts and is the cause of things’ coming to be. (4, 7)
9. God is temporal. (5, 8)"

(Ibid, p. 282).

However, as a Christian philosopher, Craig does not consider that "God be in time" to be a change in the divine essence (Ibid, p. 271).

1-3-Lorentzian interpretation of relativity

Craig asserts that a physical theory include two things: “a mathematical formalism and a physical interpretation of that formalism”. If different theories build upon the same formalism but conclude different interpretations this means that they are empirically equivalent. From Craig's point of view, three different interpretations can be made of empirical evidence confirming the theory of relativity (such as the Michelson-Morley experiment), all of which are empirically equivalent. Different physical interpretations of the mathematical formalism of relativity theory (Lorentz transformations) given by Einstein, Minkowski, and Lorentz. The interpretation given by Albert Einstein was in fact three-dimensional formulation of space-time and physical objects endure through time, but space and time are relative to reference frames. In this interpretation it would be useless to believe in the privileged reference frame of time (and space), and velocity of light has constant ("c") in every reference frame.

In Minkowski's interpretation, time has practically become another dimension of space, and four-dimensional space-time explains the characteristics of physical events. Einstein later turned to this interpretation (Einstein, 1920, pp. 51-53).

But on the contrary, Lorentz accepts a three-dimensional space-time of spatial objects enduring through a privileged time so that he maintain a privileged reference frame that is independently accounted for regardless of velocity of light source and relativity for space and time is here defined in systems of motion in relation to the preferred reference frame (Craig, 2008, pp. 21-41).

Craig then argues as follows:

1. "If God exists and a tensed theory of time is correct, then a God is in time.
2. If God is in time, then a privileged reference frame exists.
3. If a privileged reference frame exists, then a Lorentzian interpretation of Relativity is correct.
4. God exists and a tensed theory of time is correct.
5. Lorentzian interpretation of Relativity is correct" (Ibid, p. 22; 2001 a, p. 283).
1-4- There is an absolute time

By accepting Lorentz's interpretation of the empirical evidence for the theory of relativity, we can relive the absolute time that was rejected by physicists. Why so if God be in time, then “now” of his metaphysical time demarcates a three-dimensional slice of space-time which is equally “now.” This universal frame of reference would thus be privileged, so that events which God knows to be present in it are absolutely simultaneous and absolute time, length and motion are known to God. Rods and clocks in motion relative to it undergo intrinsic contraction and retardation. Craig believes that cosmic time, which records duration of the universe, coincides with this absolute time (Craig, 2002, pp. 146-147).

2. Investigation of Craig’s explanation of absolute time based on Islamic philosophy

Based on what was mentioned above, the thing that guided Craig towards the dynamic theory of time hence the acceptation of the absolute time is the realness of the passage of events and the time’s division into past, present and future; this reality is not only a relative issue but also a completely objective one. In order to criticize and investigate this viewpoint, the various meanings of “relativity” should be seminally elucidated so that a correct explanation of this issue can be offered in both this regard and also in the discussion on Einstein’s theory of relativity.

2.1. Investigating the Various Meanings of the Term “Relativity”

1) Relativity of “Understanding”: the first meaning of relativity is the relativity of understanding; by relativity of understanding, it is intended that the cognition never occurs in the human beings’ container of perception and awareness as it actually is rather it is always in a relationship with the subjective and objective matters and changes with the change in this relationship. The understanding’s relativity can stem from the interference and/or change the human mind makes at the time of recognizing the realities. For example, Kant realizes mind as having prediction casts and believes that these subjects are veils preventing the human beings’ conception of the context of the external reality with the latter, which he calls “noumenon”, always occurring in the human beings’ container of perception after first getting mixed with these concepts. From his viewpoint, the human mind is like glasses that, upon being confronted with the outside, impose color and certain amounts on human cognition. So nobody’s cognition is in perfect match with the reality rather there is a third meaning that is associated with subjective and objective matters.

2) Relativity of “Truth”: the second meaning of relativity is the truth’s relativity. The truth’s relativity means the relativeness of the error, truths and falsities and rights and wrongs. The decisive prerequisite to the understanding’s relativity is the relativity of the truth, as well, but not all the individuals believing in the relativity of understanding accept the truth’s relativity. The relativity of understanding wastes the certitude in truth.

3) Finiteness: the third meaning of relativity is finiteness and the reason for its use in this sense is that the limited matters cannot exist outside their boundaries and they can exist inside their own boundaries, then their actualization is in this sense relative and non-absolute. Relative in a finiteness sense is opposite to infiniteness and in an absolute sense. If meaning finiteness, relativity does not necessitate skepticism rather it is a sure

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Kant, 1919, pp. 280-290
and undoubtable reality because all the human beings do not know the absolute truth. The non-absoluteness of the humans’ cognition is not contradictory in this sense to the veracity of their cognitions in a given area and/or their cognition to a certain extent; every human being can recognize the truth in a given area and all the humans’ cognition is relative and limited. For instance, the statement “it was rainy yesterday” might be true from the viewpoint of some of the people on earth and false from the viewpoint of some others with it being non-contradictory. 4) **Relative Categories:** the fourth meaning of relativity includes the meaning that is not pertinent to finiteness or absoluteness but the meaning that belongs to cognition. The thing exposed to human perception is called relative when it implies the addition to another meaning and its opposite is the thing that is non-relative but self-standing and not added to another meaning. Seven kinds of the ten Aristotelian categories are relative and their cognition is not possible without paying attention to other things. When (in respect to time) and where (in respect to place) categories fall in this set.

5) **Dependency of the Creatures’ Cognition on the Eminent God:** Mulla Sadra proposed it in the Islamic philosophy that all the creatures are pure connection and full attachment and attribution to the praised God in such a way that the cognition of the truth by any of them is not possible without paying attention to God the Exalted. The God is the only being that is not a relative and additional truth in this sense and other creatures find meaning with him in relativity and addition (see also Mulla Sadra, 1981, v.2, p. 363).

Out of these five meanings, the first and the second meanings cannot be defended in terms of the Islamic philosophy, because they end in dubiousness and/or fallacy; but, the other three meanings are defendable. Negligence of the differences in the five meanings of relativity sets the ground for some sophism (see also Parsania, 2004, pp. 99-107).

2.2. **Considering the dynamic theory of time**

Based on what was mentioned above, it can be stated that although the dividing of time into past, present and future is a real and non-relative categorization in the first and second meanings of relativity (because it is not made by the human mind and it is completely objective), this classification is still relative in another sense, especially in the third meaning thereof, because the creatures sometimes have existential limitations in such a way that they constantly perceive a finite part of the world but the Eminent God is an finiteness being in His existence and all the time and all the time-related matters are clear to Him all at once. In other words, the God is the Omnipresent, then all the time-related matters are present to Him all at once. Therefore Craig cannot prove the time’s relativity in its third meaning based on the non-relativity of the time’s passage in its first and second meanings so as to conclude the time’s dynamicity.

This is why two issues should be separated from one another in the analysis of the truth of time: the first is the relationship between the time-related matters with one another and the second is the relationship between the time-related matters with fixed issues. Now, it should be stated that time can be analyzed as a completely fluid (dynamic) thing from a respect and as a completely fixed and stagnant (static) thing from another respect for the reason that although the time-related matters are variable, their variability is fixed for them in a given state, i.e. a variable creature cannot be assumed that is invariable while being variable so the description “variable” is fixed for

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3 The acceptation of this issue by the Islamic philosophers does not mean the acceptance of the hermeneutic doubts, because every onlooker with any existential limitation limitedly and imperfectly observes some of the realities but s/he also has access to certain absolute truths (like the none-contradiction principle); thus, s/he can mutually understand the individuals in his or her periphery (see also Javadi Amoli, 2008, v.3, pp. 324-325).
it in a state; therefore, time and time-related matters are variable from a respect and fixed from another. Thus, when linking time and time-dependent creatures to the other creatures, various characteristics of them (constancy and variability) cause the various relationships between the fixed and variable creatures⁴ (Mulla Sadra, 1981, v.3, p. 68).

It becomes clear based on the above-presented materials why “the eminent God who is absolutely fixed has a variable effect”; that is because His creatures are not absolutely variable rather, they are fixed in a respect⁵. However, constancy is per se of two kinds: one is the constant clean of any change (absolute constant like the eminent God) and the other is the constant whose constancy depends on the fixedness of its change and movement (relative constant in the third meaning of relativity) with the latter including the very temporal creatures of the eminent god (Motahhari, 2014, v.2, p.70)⁶. Based on the previous expression, the meaning of “substantial motion” becomes clear as stated in Islamic philosophy and there is no necessity for accepting the Dynamic theory of time (as opined by Craig) for justifying the time asymmetry because the truth of change and the order and directedness in temporal creatures according to the substantial motion are not separable accident, rather essential requirement for them. That is because the essence and quintessence of the temporal creatures is fixed with its constancy being dependent on the constancy of the change meaning that the creation of the temporal creatures is not analyzed in such a way that one can say that their essence is created one time and they are granted motion, direction and/or order another time, rather these issues are actualized in the exact essence and quintessence of them. So the God’s knowledge and causality also incorporate the original actualization of the temporal essences as well as the order and orientation of the temporal events and God does not need a preferred frame of reference.

2.3. Is God temporal?

Craig explicitly opines that the God’s temporal being means his presence in time⁷. The God’s temporal being can be explained based on the Islamic theosophical basics if it means the God’s presence in time along with His other creatures (Avecinna, 2009, pp. 256-257); however, this accompaniment means God’s companionship of the temporal creatures at all times. Now, Craig can use the eminent God’s temporal being as an intermediate level for the actualization of the preferred frame if the eminent God is existent only at a certain time. This is while the God’s relationship is identical with all the times because it can be stated based on what becomes clear from the meaning of the substantial motion in Islamic philosophy that the nature seems to have four aspects: three spatial and one temporal dimensions (see also Mulla Sadra, 1981, v.3, p. 140).

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⁴ It should be known in the explanation of this claim that these characteristics are not relative (in the first or second meaning of relativity) but completely objective and external with the explanations being that the classifications of the existence are relative (in the third meaning) based on transcendent wisdom in the Islamic philosophy, meaning that one of the two types always include the other in a respect other than the one according to which the classification has been made; as an example, creatures can be truly divided into singular and plural, actual and potential and some others but the plural creatures are per se featuring singularity in their plurality and, similarly, the potential creatures feature actuality in their potentiality. These various characteristics do not signify two appended truths but a single truth with two different aspects (Motahhari, 2014, v. 2, p. 70).
⁵ This expression does not intend to deny movement rather the intention is criticizing the theory of the time’s dynamisity as opined by Craig; that is because the close cause of the time should be also variable according to the principle “variable cause” as stated in Islamic philosophy. So the close cause of the movement should be movable, as well, and all the members of the abovementioned cause-and-effect hierarchy become resultantly variable, whereas the eminent God is clean of any sort of change, so God’s creatures are not absolutely variable (Mulla Sadra, 1981, v.3, p.61).
⁶ Muslim philosophers have presented other expressions regarding the quality of the relationships between the fixed and variable things and the explanation of all of them is beyond the present article’s patience (see also Mirdamad, 1988, p.17; Tabataba’ei, 2007, v.3, pp. 781&841 and Javadi Amoli, 2015, v.12, pp. 365-370).
⁷ Craig, 2001 a, p.283
Now, in the same way that the eminent God is not material and His relationship is identical to all the places, His relationship is also identical to all the times. The thing obtained from Craig’s expressions regarding the eminent God’s temporal being is a viewpoint similar to that of Newton. Newton realized absolute time as a thing having been flowing since the very beginning and spontaneously and considered it related to the unlimited primordial divine duration. However, Craig’s viewpoint differs from Newton’s in some respects in such a way that Craig elaborates time with the onset of the world’s movements (Big Bang) because, based on the holy book’s teachings, there are no intellectual proofs and empirical evidence regarding the primordial world of creation. Resultantly, there has been not time actualized before the creation of the world from his viewpoint and the eminent God is existent in a completely timeless manner.

This viewpoint of Craig is unacceptable because elaborate constancy for God, the creature that in the beginning has not been in time and has become posteriorly in time, is very much ponderable. Also the mere assumption and imagination of a prior and a posterior state that cannot be summed up is the very presumption of the time’s actualization; so, it cannot be stated that the God has been timeless and then He has created the time. That is because, based on what was mentioned, the expression that “there has been a period without time” is contradictory. Nevertheless Craig realizes this imagination that there has been a time before the creation time as a mere mental construct (Craig, 1979, p. 109).

According to the above explanations the truth of preceding and succeeding the world’s creation is not mere mental construct but is an objective and non-relative issue (in the first and second meanings of relativity). As Avicenna says: “time ... could not have been nonexistent and then existed. [That] is because, when it is nonexistent and then exists, it exists after not existing, and so its nonexistence is before its existence. In that case, it must have a before and that before is something different from the nonexistence describing it, according to what we stated elsewhere. So the thing of which this species of before-ness is predicated would be some existing thing, while not being this time. So before this time, there would be a time that is continuous with it - that [time] before, this [time] after - where this division would be what unites the two; but it was posited as what divides [the two]. This is a contradiction.” (Avicenna, 2009, pp. 237-238).

However, even assuming the veracity metaphysics of the argument of the God’s temporal being, at what time (of the recognized times) is his sacred quintessence existent? How it can be understood that the God knows two phenomena as being simultaneous? And, does He need a preferred frame of reference to know the order and orientation of the temporal events? And some other similar questions that leave subtle ambiguities in Craig’s explanation of the absolute time.

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8 Another flaw that can be found as the continuation of the abovementioned materials in Craig’s viewpoint from the viewpoint of Islamic philosophers is that he has only analyzed motion (and the time deduced from it) as solely an “mediating thing” lacking extension while the “mediating motion” holds true by means of the “traversing movement” (which is continuous and extended) for an external mover and time is never formed by the consecution of the instants. The detailed explanation of this claim is beyond the scope of the present article (see also Tabataba’ei, 2007, v. 3, pp. 781&841).

9 Craig, 2008, p. 129

10 Newton, 1946, pp. 6&546

11 Craig, 2001 a, pp. 252&280; himself; 1979, pp. 65-149
3. Reconstruction of Craig’s explanation based on Islamic philosophy

In this section, we have tried to reconstruct Craig's explanation of absolute time based on Islamic philosophical reasoning. As it was mentioned above, Craig does not accept Einstein’s interpretations and tries to realize Lorentz’s interpretations as being correct considering his own special basics regarding the tensed theory of time and believing in the eminent God’s temporal being. These specific theological basics are per se controversial and cannot reason on the preference of Lorentz’s theory; but of course, Lorentz interpretation preference may be well shown based on realistic principles which can be simply accepted by a physicist as in the following:

3.1. Einstein’s theory of special relativity leads to idealism

According to the theory of relativity, the physical determination of every event can be reported differently from the viewpoint of the various observers in such a way that the size and the amount of quantities like time and the dimensions of the physical phenomena are not invariable and absolute as viewed by various observers and depend on the observer’s acceleration. This viewpoint is quite opposite to the classical mechanics and traditional philosophy wherein the spatial and temporal dimensions of the phenomena were explained in an invariable and absolute manner and independent from any observer. Now, since there are no preferred frames amongst the inertial frames, no absolute time and dimensions can be ascribed to the objects rather every onlooker reports these amounts different from another according to his or her speed (Einstein, 1920, pp. 22-29). This viewpoint is acceptable by the Islamic philosophers if it is interpreted based on the third or fourth meanings (see Section 2.1), because it is no necessary a real event to be identically appeared for various observers. Why some ones work with the first and the second meanings is because they deny actualization of an intrinsic proper amount of the objects spatial and temporal dimensions; even the rest observer relative to an object doesn’t report a preferred more correct value: “… A rod in Einstein's theory has various lengths according to the point of view of the observer One of these lengths, the statistical length, is the greatest, but this does not make it more real than the others… Exactly corresponding remarks apply to the relativity of time... the proper time seems longer. Here, too, it is meaningless to ask "what is the real duration of an event?" ” (Born, 1927, pp. 213-214)

This viewpoint is also posited about the temporal priority and posteriority of the events with respect to one another in such a way that, between two distant temporal events, one cannot say which is truly preceding the other. Now, it should be known that the dependency of the time’s absolute cognition on the observer’s status in the theory of relativity is similar to Immanuel Kant’s viewpoint towards the category of time (Kant, 1919, p. 88) in such a way that some of the great scientific scholars, like Kurt Gödel, as well, have confessed to this point (Gödel, 1995, p. 247). However, this approach to the analysis of the time’s truth in Einstein’s theory of relativity denies the possibility of identifying the external objective truths, existent independent from any observer, through rendering dependent the cognition of the truths of the objects on the identified doer thereof

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12 Even if the proper time (the time measured by the framework connected to the object for it) of an event can be introduced as an absolute and invariable time for assessing the real amount of a process (unlike Max Born’s viewpoints that was mentioned above), no general and absolute time can be defined in the standard theory of relativity between the various events (featuring different proper frame) because there is essentially no way for introducing the absolute simultaneity between the distant frameworks according to the theory of relativity.

13 With the difference being that Einstein realizes the observer’s physical position as being effective in understanding the time of an event but Kant knows the observer’s senses as being effective therein.
as in Kant’s viewpoint (the first meaning of relativity) and its logical prerequisite is the denial of the objective and standalone existence of the external truths (the second meaning of relativity), as well, and this is nothing more than the denial of absolute realism and acceptance of idealism in this regard.

3.2. Lorentz’s interpretation is empirically equivalent to Einstein’s interpretation

Although physicists believe that experiences like Michelson-Morley experiment have denied the actualization of an absolute frame (Ether)\(^{14}\), as already known and considered by Lorentz, all of the results of such experiments can be explained keeping the Ether\(^{15}\). Why the theory of Lorentz’s Ether, in spite of its equivalence to the standard theory of relativity at empirical level, hasn’t be accepted by the physics society refers to this point that it isn’t as “simple” as Einstein’s theory; in other words, the standard interpretation is more “simple” and “beautiful” than the Lorentz one which suffers a lot of complexity\(^{16}\). This isn’t based on a reasonable argument in rejection of Lorentz interpretation (Lorentz 1934, p. 165 Quoted from Craig, 2008, p. 16) In addition to the latest discoveries in physics (as described in the last section) it can change the conclusion \(^{17}\).

Moreover and fundamentally more important, discarding of the theory of "ether" has been based on a positivistic idea that non-observable means not being in existence; while not finding is not a proof for nonexistence. Although Craig has himself well criticized such a positivistic idea\(^{18}\), in the following sections, we will introduce some testable (not only pure metaphysical explanations) requirements in support of an absolute general time.

3.3. Actualization of the general (absolute) time

According to the Islamic philosophy, the actualization of a general time in nature can be proved without any need for the eminent God’s temporal being and/or the time’s dynamicity:

1) The priority and posteriority of two objects can be always measured by means of a third criterion. Such a measurement can be rational if the aforesaid criterion be not something separate with the essence of the prior and posterior but a truth shared by the prior and posterior with the difference being that the prior has a larger quotient in this scale than the posterior. However, if two objects are found sharing no criterion, their priority and posteriority will be senseless (Tabataba’ei, 2007, v. 3, p. 878).

2) So, the temporal priority and posteriority between two objects would be logical under the assumption of a common time’s actualization between them in such a way that the temporal priority and posteriority between two objects means nothing more than the priority of an object to another in a common and matching time. (Ibid, p. 843) in such a way that the priority and posteriority of the foresaid time components are inherent in them and the priority and posteriority of the objects matching with this time would be

\(^{14}\) Resnick, 1968, pp. 18-34

\(^{15}\) Although Galilean transformations cannot elaborate the results of the experiments, such as Michelson-Morley experiment by believing in the existence of absolute frame, the entire aforesaid results can be justified by Lorentz’s transformations, acceptance of these transformations does not mean the denial of the absolute frame because the movement of an observer in respect to an absolute frame causes disorder in the performance of the clock and meter and influences the calculations of the spatial and temporal dimensions of the physical phenomena based on these transformation. Kuhn, 2002, p. 1; Bell, 1986, pp. 49-50.

\(^{16}\) Rindler, 2006, pp. 10-12

\(^{17}\) As some scholars of philosophy of science have argued, the justification of the question of "simplicity" (does not follow a single global criterion); but it is local; That is, it can be legitimate in one matter, And in another illegitimate matter (Sober, 1994, pp. 136-57). Now, this claim can be made also about the preference of Einstein's interpretation over Lorentz's interpretation, given the findings of modern physics and the change in its subject matter.

\(^{18}\) Craig, 2002, pp. 132-137
a function thereof (because every accidental thing should eventually return to an
essential issue otherwise an improbable endless chain comes about).

3) The commonality scale between any prior and posterior is the existence of a prior and
a posterior in such a way that if the prior and the posterior be real external things, the
common issue will be also external and if the prior and posterior be mental, their scale
of commonality will be also mental;

4) This criterion is not just holding true for the priority and posteriority of two objects,
rather such an intellectual criterion is also needed in regard of the accompaniment
and/or temporal excess and decrease between two objects, as well (Ibid, p. 887).

5) Based on the definition, time is the amount of movement;

6) So, if a movement is actualized in the outside world, the time, as its amount, would also
have external actualization;

7) The actualization of movement in the outside world is easily perceived;

8) So, time (as the amount of movement) is a truth amongst the truths of the outside
world19;

9) The thing that truly exists also possesses true determination and individuation,
as well, meaning that it enjoys a real and non-relative (in the first and second meanings
of relativity) position in respect to the other creatures and it cannot exit that position
otherwise it would not be anymore that creature20.

10) So, the time of every event in a determinate and individuated ratio of priority,
posteriority, simultaneity, decrease and excess becomes meaningful in respect to the
time of the other phenomena;

11) However, according to what was attained from the introductions 3&4, this issue can be
obtained only through the actualization of a common external time between the
aforementioned phenomena.

12) So, there is a real common time between both of the reality times.

13) Common times are also external realities and, as stated (10 & 11), require another real
common times; so common times must eventually coincide with a single common time
(Because otherwise an improbable endless chain comes about)

So, there is a general and non-relative time between all the temporal events and it is per se a
basis for assessing the priority, posteriority, simultaneity, excess and decrease between all the
times. If this time be absent, the relationship between the times and this that the time is itself
amongst the determination of the movements will be senseless, because the movements’ times are
not related to one another and cannot be a specification between them and resultantly the priority
and posteriority of the temporal creatures as well as the temporal events would be nominal
(Tabataba’ei, 2007, v.4, pp. 1249-1250; comment: 14): “the movement in that day precedes the
movement today. This is not just a comparison. The reason for this is that there is a third movement
in between which can, for example, be the movement of the earth … [if] we believe in no common
general time, all these posteriority and priority types would become a series of nominal issues;
even the priority of the yesterday over today” (Motahhari, 2014, v.3, pp. 219-220).

19 Muslim philosophers also have multiple proofs presented regarding the trueness of the time (see also Avicenna,
2009, pp. 229-237) but they have not been offered here for avoiding verboseness.

20 Of course, the intention is not that there is no possibility for that creature’s embodiment in other positions before
the creation rather the intention is solely that after an object was actualized, its position is not violable in respect to
the other creatures otherwise this possibility should be accepted that while being actualized in a position, a creature
can also have no actualization in there and this is contradictory.
3.4. The source of general time abstraction and its properties

When asking questions about the time of the incidents (category “when”\(^{21}\) of the ten categories), the answers should be provided with the general time (not the special time of an event). For instance, when asking the question that “when did event A happen?” times other than the special time of the event A’s occurrence should be provided in an appropriate answer such as “last year\(^{22}\)” and/or “yesterday”. General time should have been created by the oldest and most durable movements in nature and it has to be completely non-relative and constantly in movement, so that it can be a proper basis for assessing the entire movements of the world of nature in terms of priority, posteriority, decrease and excess between them (see also Mulla Sadra, 1981, v. 4, p. 220 and Javadi Amoli, 2015, v. 14, pp. 28-29).

As for the scale of the general time’s emergence which is commonly called year, hour, second and so forth by the people, there are various viewpoints amongst the Muslim researchers:

A) The Peripatetic philosophers calculated this time based on the amount of the circular motion of the celestial sphere (Avicenna, 1996, p. 105)\(^{23}\);

B) Some Muslim thinkers (see Razi, 2002, pp. 14-15) realize it like Newton as a continuous abstract quintessence that is flowing uniformly outside the world’s movements. This time is called “duration” from the viewpoint of some of them in such a way that similar sayings can be found in the words of some Muslim Theologians (see also Sheikh Mofid, 1993, pp. 66-67 and Fakhr Razi, 1987, v. 5, p. 91).

C) From the viewpoint of Mulla Sadra, this time is neither calculated based on the celestial sphere’s rotation nor is it unrelated to the world’s movements rather it is computable based on the amount of the celestial sphere’s substantial movement\(^{24}\). In completing and supplementing this viewpoint of Mulla Sadra, the neo-Sadraeans consider a common movement for the whole world of nature and realize this time as flowing in the whole nature and as the nature’s substantial movement. This common movement is per se a proof to a sort of real unity and integration between the components of the nature because the time is the amount of movement and this movement signifies a sort of real unification between the components of the nature\(^{25}\) (Tabataba’ei, 2007, v. 4, pp. 1249-1250; Motahhari, 2014, v. 3, pp. 218-220 and v. 4, pp. 231-232; Javadi Amoli, 2015, v. 15, p. 285).

“When there is a temporal priority in respect to a movement or a movable, its prerequisite is the actualization of a common time hence a common movement and resultanty a common matter shared by them” (Tabataba’ei, 2007, v. 3, p. 844).

The viewpoint “A” is based on the old Ptolemaic astronomical basis which is not devoid of controversies according to the foundations of the modern cosmology and the things that were mentioned amongst the conditions of the general time (see also Mulla Sadra, 1981 with Tabataba’ei’s writings, v. 3, p. 117, comment: 2). Furthermore, the common aspect of the general

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\(^{21}\) Therefore, difference is made between the concept of time (non-static continuous quantity) and the concept of “when” and “what time” (category “when”) in natural philosophy.

\(^{22}\) Without comparison with another movement, year only shows the amount of earth’s movement around the sun (not the amount of event A’s movement).

\(^{23}\) To Peripatetic philosophers, the special time did not matter so much (for they did not believe in the substantial movements) and the (general) time was also only obtained based the circular motion of the celestial sphere. (Avicenna, 2009, p251-253) also The meaning of “sphere” in the above expressions is the lowest sphere (in Arabic: “mohadedol-al-jehat”) (Avicenna, 1996, p. 69)

\(^{24}\) From the viewpoint of Mulla Sadra, the other elements do not have the required persistence and arrangement for such a fate (see also Mulla Sadra, 1981 with Sabzevari’s writings, v. 3, p. 116; comment: 1).

\(^{25}\) Because the common substantial movement needs a common substantial subject that can also be moved; however, the separate things cannot have real partnership in this regard.
time in this viewpoint is not due to the real issues, but merely mental construct matters because, from the viewpoint of the general public, the earth’s rotation is more general in respect to the other movements and, in this regard, this viewpoint cannot form a premise for a real and philosophical thought (see also Javadi Amoli, 2015, v. 14, p. 49).

The viewpoint “B”, as well, elaborates the general time independently from the movements of the world of nature and this is not in accord with the philosophical definition and terminology of time; thus, this time does not have an external source of abstraction26 (Ibid, pp. 282-284).

Therefore, the viewpoint “C” is the most appropriate of these sayings because this time has a source of external abstraction and simultaneously its common aspect is not by a mere mental construct but in a real and external manner; of course, according to what is obtained from the analyses by Mulla Sadra (see also Mulla Sadra, 1981, v. 3, pp. 138-141) on the origin and truth of time, it has to be stated that the time’s abstraction source is not an independent movement outside the special and natural movements (which are per se the source of the special times’ abstraction) rather two aspects of the substantial renewals of the nature will be the cause of the special and general times. If in nature’s renewals, each special movement is considered without considering the other movements, a special time is abstracted and, if the general renewal of it is considered, a general time is abstracted27; “all the component of nature enjoys a sort of true unity even with the pluralities it possesses; with all its components, the world is like a moving convoy and a unit movement and the general time comes about exactly here” (Motahhari, 2014, v. 3, p. 221)28.

3.5. Evidences from modern physics indicating the actualization of the non-relative and general time in the universe

Astronomers have already estimated that the universe is 13.8 billion years old. As we know, the universe age is calculated by means of the cosmic time which is a general quantity corresponding to overall motion of all the universe. The cosmic time can be considered as an evidence from the modern cosmology indicating on the actualization of the absolute time (Craig, 2001 a, pp. 202-210). Although this time is an appropriate evidence indicating the actualization of an absolute and non-relative time, Craig’s special metaphysical basics for relating the cosmic time to the quintessence of the eminent God without expressing a clear characteristics and testable requirements for absolute time is one of the other primary reasons of the criticism of his viewpoints (See: Balashov, Janssen, 2003, p. 336)29. Of course, based on Islamic philosophical discussions stated in section (3.4), one can offer specific physical characteristics for such a general/absolute cosmic time30 in addition to arguing only based on metaphysical explanation.

26 In philosophical terminology of some of the Muslim thinkers, "duration" has an actuality abstraction source (see also, Kaviani, Fayyazi, 2017, pp. 103-121).

27 Thus, the common movement in nature should be in a co-moving form.

28 This issue even has implications to affirmation of Divine Unity, because the real unity of the movement in the universe’s components is expressive of a sort of necessary concomitance between them and, as stated in the Islamic philosophy, the real necessary between some objects indicates the causal relationship between them (Mulla Sadra, no date, p. 32); so, if there is a sort of necessary concomitance between all the components of the world (that are alongside one another), this is reflective of the idea that all the components of the universe are the effects of a unit cause that has created necessary concomitance between them.

29 As an example, Craig says “the choice of cosmic time as a measure of the God’s time” (Ibid, p. 218).

30 As it was mentioned in the previous sections, the philosophical general time isn’t as the same as Newtonian absolute time; but what has made these to be considered equivalent is the non-relativity of them and their being criteria for negating the relativity theory’s claim for the relativity of the events simultaneity in such a way that if differences in the positions and speed of the observers cause differences in the simultaneity, precedence and delay of the events, the cosmic time can be considered as a proper reference for judging the issue.
The main characteristics of our explanation are based on an overall non-relative co-moving motion for all the nature which necessitates a sort of an actual unity for the whole components of the nature.

The cosmic time does not express the amount of the peculiar motion of a part of the universe rather it signifies the co-moving of all the components of the universe from the beginning of its formation till now. This subject has been stated by Hubble in the form of a law, known as Hubble’s Law, following the several-year course of his observations and it expresses the quality of the common motion of the various parts of the universe\(^{31}\). This does not mean that the universe components are distancing away from one another towards outside the universe rather it means that the entire components of the universe are moving in respect to one another based on a universal relation\(^{32}\).

The cosmic time is non-relative and it does not belong to a specific body. This issue can be also explained by the theory of general relativity which is known as the theoretical basis for the modern cosmology. Based on this theory, the space-time curvature formed by the presence of matter is in contradiction to the equivalence of different observers (Gödel, 1990, pp. 203-204) and in support of existence of a sort of Ether (Einstein, 1922, p. 23). More technically, the Friedman equations\(^{33}\) governing the time evolution of the universe are written in terms of the general cosmic time. These equations enable understanding how the universe expands and finding its age in absolute and non-relative terms (Rindler, 2006, pp. 397-406)\(^{34}\).

Although, following the formation of the theory of special relativity and with the acceptance of the principle of locality\(^ {35}\), the universe was described in the form of separate spots that were finally in communication with one another through the use of optical signs, the empirical evidence obtained from the experiments based on EPR and Bell theorems proposed it with the denial of principles like reductionism\(^ {36}\) and locality and general entanglement for the whole components of the world that it is necessary to presume a sort of true unity for them.

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\(^{31}\) Hubble's law is expressed in the following form: \(V=\text{H.D}\) wherein \(V\) is the speed in which the cosmos components get away from each other; \(\text{H}\) is the Hubble’s constant and \(D\) is the distance between the components of cosmos. Although this law has been currently undergone nonlinear revisions, it is still realized as the global law governing the entire components of the cosmos.

\(^{32}\) According to what was mentioned in the previous section, if there is no true unity existent between the cosmos components, it cannot become the source of such a unique issue’s abstraction.

\(^{33}\) The Friedman equations have been derived from the Einstein’s field equation considering the homogeneity and isotropy of the universe in large scale by means of Lemaître–Robertson–Walker metric.

\(^{34}\) Some researchers have stated that the so-called "hole argument" corresponding to general theory of relativity is in conflict with the ontological requirements of presentism (Balashov, Janssen, 2003, p. 342; Earman 1989, Ch. 9); but of course, from other viewpoints:

1-The dynamical form of general relativity is often called "geometrodynamics" in which, like Lorentz's interpretation, space-time has a "3+1" dimensional formulation and it isn’t in conflict with presentism (Barbour, 1999, p. 167);

2- Although Einstein expected his theory of general relativity had been “strongly” Machian, the ultimate field equations didn’t satisfy his expectation (it is well-known that the solution of GR field equations for zero value of energy-momentum tensor is non-trivial). It seems the root of Einstein expectation referred to this point that he wanted to solve the hole argument by accepting Mach’s principle.

It should be mentioned that even if the hole argument is correct and thus Craig’s explanation of absolute time is failed, the absolute time presented in this paper is not a substance independent of natural movements.

\(^{35}\) Based on this principle, the results of an experiment that is spatially separate from us would be independent from our behaviors.

\(^ {36}\) Based on this principle, the recognition of the whole does not necessarily mean the recognition of the components thereof because the whole features a reality in addition to those of its components.
Conclusion

Using his specific philosophical and theological basics like the dynamic theory of time and the God’s temporal being, William Craig revived the absolute time of Newtonian physics which had been rejected by Einstein’s theory of relativity. In explaining this claim, he has preferred to use Lorentz interpretation of relativity theory rather than Einstein and Minkowski interpretations. The aforementioned basics through the use of the Islamic philosophy’s approach are imperfect in this regard because relativity has different meanings and the mistaken interpretation of their meanings causes the acceptance of the dynamic theory of the time hence the God’s temporal being. Despite these, his special theological explanation may not be accepted by physicists because it does not lead to any clear testable characteristics for the claimed absolute time. However, Craig’s claim on the actualization of a non-relative general time was proved and it was shown that Einstein and Minkowski denial of the absolute time is based on positivism and may lead to idealism. Moreover, using substantial motion of nature in Islamic philosophy, an acceptable\testable explanation for the actualization of a general time has been offered. The main characteristics of our explanation were based on an overall non-relative co-moving motion for all the nature which necessitates a sort of an actual unity for the whole components of the nature. As was finally discussed, these characteristics can be supported by well-known evidences from modern physics as cosmic time corresponding to the co-moving motion in modern cosmology, and the non-local (global) property of the entangled particles in the quantum world.

At last, it is necessary to mention that although the general time considered here is a non-relative (absolute) quantity regarding to what was explained in Section 3, it isn’t just as the same as the Newtonian absolute time and even what has been introduced by Craig.
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