A BASIS FOR THE REALITY OF ABSOLUTE SPACE

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ABSTRACT

According to the absolutist approach, space has its own existence independently of things inhabiting it. Leibniz, who is a relationalist about space, constructs strong arguments against the existence of absolute space. His arguments derive from that the notion of absolute space contradicts two basic principles: The Principle of Sufficient Reason, and the Principle of Identity of Indiscernibles. On the other hand, Kant provides a substantial argument against relationalism. According to Kant, the notion of "incongruent counterpart" cannot be explained in terms of a relationalist account of space. We, therefore, need to posit absolute space to explain the difference between incongruent counterparts. In this study, I aim to present Leibniz's and Kant's arguments respectively in order to see which notion of space is more plausible. It is claimed that, even though the Kantian argument does not necessarily falsify relationalism, it nevertheless constitutes an important challenge against it.

Keywords: absolute space, relationalism, incongruent counterpart, Kant, Leibniz.

MUTLAK UZAYIN GERÇEKLİĞİ İÇİN BİR TEMEL

ÖZET

Uzayın mutlak olduğu görüşüne göre, uzayın, içinde var olan şeylerden bağımsız olarak kendi gerçekliği vardır. Bağıntısal bir uzay anlayışı benimseyen Leibniz ise, mutlak uzayın varlığına karşı güçlü argümanlar sunar. Bu argümanların temeli, mutlak uzay kavramının iki temel prensiple çeliştiği düşüncesidir. Bunlar, Yeter-Neden İlkesi ve Ayırt Edilemezlerin Özdeşliği İlkesidir. Öte yandan Kant'a göre "örtüşmeyen eş" kavramı bağıntısal uzay anlayışı ile açıklanamayan bir olgudur. Bu olguyu açıklayabilmek ancak mutlak uzayın varlığı ile mümkündür. Bu çalışmada, hangi uzay anlayışının daha makul olduğunu görebilmek için sırasıyla Leibniz'in ve Kant'ın argümanlarını sunmayı amaç edinmekteyim. Bu bağlamda, her ne kadar bağıntısal uzay anlayışını zorunlu olarak geçersiz kılmasa da, Kantçı argümanların bu anlayış için önemli bir sorun teşkil ettiği iddia edilmektedir.

Anahtar Kelimeler: Mutlak uzay, bağıntısalcılık, örtüşmeyen eş, Kant, Leibniz.

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There are two basic philosophical attitudes one can adopt towards the nature and the existence of absolute space. The first one is the relationalist position according to which, space is merely a system of relation between bodies, and therefore, its existence depends upon the existence of those bodies. The second one is the absolutist attitude which considers space as having its own existence independently of the existence and relations of beings inhabiting it. Leibniz and Newton are main figures that hold these approaches respectively. In "Correspondence" which is a series of letters between Newton's spokesman Clarke and Leibniz, Leibniz constructs an explicit argument against Newtonian absolute space. According to Leibniz, the Newtonian notion of space is ineffective and meaningless. However, Kant's argument for absolute space that is based upon the notion of "incongruency" can be seen as an important challenge for Leibniz's arguments for it shows that the notion of regions is not ineffective as Leibniz suggests. The aim of this study, is to present and examine Leibniz's and Kant's argument about space, in order to see the implication of incongruency to Leibniz's relationalist account of space, and to see whether Leibniz's argument against absolute space is also applicable to the Kantian notion of region.

1. Leibniz against Absolute Space

Newton considered space as an entity that has its own existence independently of any objects, such that if there were no object at all in the universe, space would nevertheless exist (Gould 1962: 101). That is to say, space was considered as a container that contains existing bodies. According to Leibniz, on the other hand, space does not have an absolute existence. He rather thinks that space is "an order of coexistence", in other words, "an order of things which exists at the same time." (Leibniz and Clarke 1999: 146) Therefore, for him, space would not have been existed if things did not exist, because space is not a container but rather a relation between bodies. This is why according to Leibniz, the notion of absolute space is no more than a mere useless fiction. Leibniz's metaphysical arguments against the existence of absolute space are mainly based upon two basic principles: the Principle of Sufficient Reason and the Principle of Identity of Indiscernibles. Leibniz takes these principles as his axioms and tries to prove that the postulation of absolute space would contradict them.

1.1. Argument from the Principle of Sufficient Reason

The Principle of Sufficient Reason states that everything that is, has a sufficient reason why it is, and why it is this way rather than otherwise (Kennedy 2003: 118). Accordingly, the universe has a sufficient reason for

why it is created and why it is created the way it actually is and not another way. According to Leibniz, the sufficient reason for God's creation of this world is that this world is the best among other alternatives. Shortly, God's choice between different possibilities constitutes a complete explanation of why the world is created the way it actually is. Leibniz states that, the Newtonian notion of absolute space cannot be hold, if we are to admit the Principle of Sufficient Reason. It is crucial to note that, Leibniz considers absolute space as absolutely uniform and infinite. In other words, for him, "without the things placed in it, one point of space does not absolutely differ in any respect whatsoever from another point of space." (Leibniz and Clarke 1999: 147). If one point of the space does not differ from another point of it, then whether a lone object is located at one place or at another makes no different at all. This in turns, means that whether the universe is created in its actual location or at another one makes no difference as well (Ibid.). But if this is so, Leibniz argues, we cannot talk of a sufficient reason for why God created this universe in its actual place. As written above, God's sufficient reason for creating this universe is that this universe is the best one. So, God created this universe in its actual location because that it is the best choice. However, this suggests that different possible worlds created in different locations of space are distinct from each other. For, what is the point of choosing the best if all possibilities are equally good? But if space is absolutely uniform, then God does not have a sufficient reason for choosing the actual universe in its actual location. If all possible worlds that differ merely in location are actually indifferent, there is no room for one possibility's being the best. In other words, "there is no room to enquire after a reason of the presence of the one to the other." (Ibid.) Given that for Leibniz God has a sufficient reason for choosing to create the universe in its actual location, space for him cannot be considered as absolute and uniform. Leibniz goes even further and argues that if two things are equally good, God would have no sufficient reason for creating any one of them, therefore, would create neither of them (Ibid.: 151). Therefore, by positing the existence of absolute space, Newton is in a sense unable to provide an explanation of why the actual universe is created at all. His conception of space contradicts the Principle of Sufficient Reason, since his claim entails that the actual universe is chosen between equally good and indifferent alternatives without any reason, in other words, implies a universe that does not have any sufficient reason to exist. As Leibniz himself states: "If space were an absolute being, something would happen for which it would be impossible that there should be a sufficient reason- which is against my axiom." (Ibid.)

1.2. Argument form the Identity of Indiscernibles

The Principle of Identity of Indiscernibles or Leibniz Law's states that two distinct objects cannot have exactly the same properties. In other words, according to Leibniz, there are no such things as two distinct individuals indiscernible from each other rather, there is only one and the same individual under two different names (Leibniz and Clarke 1999:149). If two things are really distinct individuals, they have to possess at least one different property. Now suppose that absolute space is real and imagine two possible universes located at different points of the absolute space. Suppose further that the only difference between these universes is their locations. Given that absolute space is uniform, and that being located in one point of it rather than another one would not make any change, then according to Leibniz, these two possible universes are actually one and the same universe, because we cannot detect any differences between them. Similarly, if God had created the universe some kilometers further without altering the internal relations of bodies, the universe would not be different than the actual universe. Such as static shift, according to Leibniz, would not create any differences; no experiment would be able to detect any changes. Therefore, for Leibniz, the postulation of absolute space and mentioning different possibilities in terms of different locations would contradict the Principle of Identity of Indiscernibles.

Whether Leibniz's arguments against absolute space are successful or not is a controversial issue. First of all, these arguments can be undermined if it can be shown that principles that Leibniz relies on are indeed false. The Principle of Sufficient Reason and the Principle of Identity of Indiscernables are strong assumptions that need serious considerations and reliable justifications. Especially the Identity of Indiscernibles is widely rejected by many philosophers. However, questioning the validity of these principles is beyond my current purpose. I rather aim to show that it is possible to form a notion of absolute space that is compatible with them. Therefore, even though we assume the truth of Leibniz's principles, if we can show that absolute space is capable of having some effects on how things are, Leibniz's argument will collapse. For, if being created at different places of the universe do makes some differences, then the notion of "absolute space" would be perfectly compatible with Leibniz's principles. This is why, the Kantian argument about absolute space that is based upon "incongruency" or "handedness" can provide appropriate ground for rejecting Leibniz's arguments against absolute space.

2. Kant and Absolute Space: the Argument from Incongruent Counterparts

In his article *Concerning the Ultimate Foundation of the Differentiation of Regions of Space*, which is written in 1968, Kant introduces the possibility of finding a difference due to spatial aspects of objects in absolute space. He suggests that "absolute space" is not a useless fiction as Leibniz argues, but rather that it is necessary if we are to explain the existence of *incongruent counterparts*. Kant, like Newton, aims to prove that absolute space has its own reality independent of any matter inhabiting it. He thinks that spatial aspects of a body are not limited to its relation to other bodies or the internal relations between its parts. According to Kant, Leibniz only reveals one spatial aspect: position, which means the relation of a body to other bodies. Kant introduces the notion of "region", which is determined by position and the direction of that position, that is, the direction in which the relations of a body with other bodies run. Even though we know the order of bodies perfectly, we cannot know all their spatial aspects without knowing the direction of that order.(Kant 1999: 198, 199) Therefore, the left and the right become necessary in order to determine regions, and all spatial characteristics of bodies.

Kant states that an object which is completely similar to another but which is not included in the same limit as the other is an *incongruent counterpart*. (Ibid.: 201) For example, the mirror image of some object, besides being exactly similar to the actual objects, cannot fit the same spatial region with it. Moreover, the shape of such objects cannot be said to be the same because "the surface that includes the one could not possibly include the other". (Ibid.) In order to illustrate his claim, Kant gives the example of human hands. A left hand and a right hand can be completely similar to each other, that is to say, their parts can have exactly the same relations with each other but nevertheless they have something distinct and they are incongruent. But if we consider space as merely relations of parts to each other then, the left and right hands will be identical and would fit on either side of human body. However, this is impossible; the left hand can never fit into the same region of absolute space that a right hand fits, and this is so because of the fact that they have different relation to something outside, that is, to absolute space. Given that the internal relations between a right hand and a left hand are completely identical, it is not possible to account for the difference between them on the basis of the internal relations of their parts.

It is possible to hold that a left hand differs from a right hand with respect to its relation to other objects. That is to say, a relationalist account of space can account for the differences between incongruent counter parts. However, Kant also rules out such a possible reply as well. According to Kant, if a universe would contain only a solitary hand in it, this would be

either a right hand or a left hand. So, a universe containing a left hand is a different possibility from a universe containing a right hand. But a relationist account of space cannot explain the direction of a *lone* hand. Since a lone hand would not bear any external relation to other objects, its direction cannot be based upon such external relations. The same line of reasoning can be followed for the whole universe as well. Consider the mirror image or reflection of the actual universe. In the reflected universes all internal relations of individuals inhabiting it are identical to the internal relations between inhabitants of the actual world. However, given that this universe is the reflected version of the actual universe, its inhabitants are the mirror images of actual individuals too. Therefore, the reflected universe contains the incongruent counter parts of some actual individuals. Given that the whole universe does not bear any external relation to other objects, and that the internal relations between its parts are exactly similar to the internal relations between the parts of its counterpart, the difference between the actual universe and the reflected universe has to be sed upon to their relations to absolute space. If relational properties of object are insufficient for accounting for every spatial aspect of objects, a relationalist account of space cannot be adopted. "…space cannot itself be constituted of relations between physical objects but must exist absolutely, independent of the existence of matter." (Remnant 1963: 396)

In order to understand whether Leibniz's argument applies to Kant's argument from handedness, we should see whether two incongruent counterparts, or the mirror image of the actual universe that contains incongruent counter parts of certain actual objects create any observable differences, that is to say, whether they are really indiscernible, as Leibniz would claim, or not. This is why, for our present purpose we will assume that the Principle of Sufficient Reason and the Principle of Identity of Indiscernibles are correct and see whether Kant contradicts them or not. Kant's emphasis on incongruency gives us the opportunity to show that spatial differentiation between universes leads to different alternatives. Suppose that the universe contains one single hand. As it is said, according to Kant, this hand is either a right hand or a left hand. So, even though the location of the hand would make no change at all, it can be said that the direction of it would create a difference. Similarly, from the fact that the actual universe and the reflected universe are different possibilities, we can say that God had sufficient reason from creating our universe in that direction rather than in the other. This shows that the postulation of absolute space does not necessarily contradict Leibniz's laws.

However, it is still possible to claim that the difference between incongruent counterparts can only be explained in terms of their external relations to other objects, and that when taken in isolation, incongruent

counter parts does not possess different properties and are not actually different alternatives. For instance, it can be claimed that the difference between a left hand and a right hand is intelligible only as far as they are compared in relation to other objects. Therefore, two universes, one containing only a left hand and the other containing only a right hand, do not differ in any fundamental respect. Therefore, cannot be considered as genuinely different alternatives. Being a left hand or a right hand does not constitute a substantial different because the direction of a lone hand is indeterminate. That is, a solitary hand is neither right nor left (Nerlich 1994: 48). So, it can be concluded that if there is no relational difference, there is no spatial difference as well. Hence, the notion of "congruency" in no way supports the absolutist conception of space.

Therefore, if we are to argue against relationalism on the basis of congruency, we need to show that direction or handedness produces *actual* differences that cannot be accounted on relational grounds. In his article, Kant provides several examples to show how the effect of handedness makes observable differences. For instance, he states that in human beings the right side has more superiority in skill and in strength over the left, while the left side has superiority in sensitivity over the right. As he states "… the two sides of the body are, in spite of their great external similarity, sufficiently distinguished from each other by a clear feeling." (Kant 1999: 200) Moreover, it is also detectible that the mirror image of a map will not be identical with the original map, which has identical internal relations, because it is obvious that only one of them is correct and only one of them determines the region of a place correctly (Ibid.: 199-204). It is shown that many chemicals depend on the differences between the directions of molecules. As Kennedy (2003) states: "Two molecules that are incongruent counterparts of each other are called "isomers" in chemistry… Many medicines and industrial chemicals depend on the remarkably different properties of isomeric molecules."(131) Similarly, physical studies also indicate that the life-time of certain particles that have the same properties depends on the handedness, that is, upon whether they are left-handed or right handed. Shortly, "even the most fundamental physical laws are sensitive to handedness." (Ibid.:131). All these examples emphasizes that a reflected universe that fills a different region in absolute space from the actual universe would create real physical and detectible differences.

However, there is still the possibility to claim that all differences cited above, are due to other factors or the relation that incongruent counterparts bear to other objects. The right side of the body is superior due to its relations with other parts of the body and other objects. Or again, a map is correct only with respect to the world it depicts. Its correctness depends upon to its relation to the world. If it can be shown that the

properties possessed by a lone right and a lone left hand are different, then the argument of incongruency would succeed against relationalism. Similarly, if the direction of certain physical particles creates differences in their life time independently from everything around them, again relationalism will be in trouble. Therefore, unless it is shown that the differences between incongruent counterparts are effects of some different causes other than absolute space or it is given a relationalist account of them, Leibniz's argument seems to miss Kant's proof of absolute space. Because by establishing how regions of space differ from one another, Kant can account for the creation of the universe in its actual region. If God created the universe in the reflection of its actual region, then the universe would be detectibly different. So, if the actual universe and the reflected universe would be two different alternatives, God had sufficient reason for preferring the actual universe over its reflection. Similarly, Kant's argument seems also compatible with the Principle of Identity of Indiscernibles because he shows that the actual universe and the reflected universe are in fact discernible from each other and therefore, are distinct.

As we have seen, Leibniz attacks the existence of absolute space on the ground that it contradicts two basic principles by proposing the difference of two indiscernible things. His argument implies that absolute space is a useless notion that makes no observable differences and therefore should be rejected. However, Kant introduces the notion of "incongruency" by which he can account for the difference of spatial regions. According to Kant, a merely relationalist conception of space cannot account for the difference between incongruent counter parts. The Kantian argument against relationalism, however, does not necessarily establish the truth of absolutism. It is logically possible to claim that incongruent counterparts are in fact identical when they are taken in isolation, and claim that the difference between them, when they are embedded in a universe where there exist other objects, can be given in relational terms. However, even if one can suspect that the observable differences between incongruent counterparts are due to absolute space, it seems hard to deny that they are nevertheless different. So, even though incongruency does not necessarily entail the existence of absolute space, it nevertheless constitutes and important challenge for the relationalist account of space.

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