How Does Kant Reject the Neglected Alternative?: Desmond Hogan on Things in Themselves

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Abstract

In the Transcendental Aesthetic, Kant argues that space and time are not properties of things in themselves, and they are rather a priori forms of intuition. According to Kant, space and time are the mere forms of appearances and not things in themselves. But Paul Guyer formulates an updated version of the neglected alternative objection that space and time might be forms of sensibility and properties of things in themselves. In this paper we present a friendly amendment to Desmond Hogan's interpretation that refutes the objection, introducing an important "neglected" reason to support his argument.

Keywords

Kant, history of 18th century philosophy, time, space, things in themselves

カントはいかにして「忘れられた選択肢」を拒否したか ―デスモンド・ホーガンの物自体論―

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in the transcendental aesthetic of *critique of pure reason*, kant argues that space and time are not properties of things in themselves, and they are rather a priori forms of intuition. according to kant, space and time are the mere forms of appearances and not things in themselves. transcendental idealism follows as a consequence of taking space and time as merely subjective forms of our intuition.

however, distinguished scholars have raised the neglected alternative objection that space and time *might* be forms of sensibility *and* properties of things in themselves. In this paper, we attempt to propose a friendly amendment of Desmond Hogan's renowned paper "Three Kinds of Rationalism and the Non-Spatiality of Things in Themselves," examining the reasons to support the premises of Hogan's argument

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to undermine the neglected alternative objection. In the first part, we demonstrate that Kant's distinction between the "matter" and "form" of appearances implies that mind-independent things in themselves exist, and notice how the distinction is related to the non-spatiotemporarity of things in themselves. We also take a glance at Paul Guyer's updated version of the neglected alternative objection. In the second part of the paper we expound Hogan's argument that rules out the neglected alternative objection. Lastly, we argue that perhaps the most urgent reason for supporting a premise of the argument is that space and time are relational, though Hogan does not point out.

1. Things in Themselves and the Neglected Alternative Objection

In the opening to the Transcendental Aesthetic, Kant draws a hylomorphic distinction by which he distinguishes between the "matter" and "form" of appearances:

I call that in appearance which corresponds to sensation its *matter*, but that which allows the manifold of appearance to be intuited as ordered in certain relations I call the *form* of appearance. Since that within which the sensations can alone be ordered and placed in a certain form cannot itself be in turn sensation, the matter of all appearance is only given to us *a posteriori*, but its form must all lie ready for it in the mind *a priori*, and can therefore be considered separately from all sensation. (A.20/B.34)⁽²⁾

Kant takes sensation as "the effect of an object on the representative capacity, so far as we are affected by it" (A.19/B.34). Sensations are the matter of appearance "given to us a posteriori." Since they alone cannot order other sensations, Kant asserts, "that which allows the manifold of appearance to be ordered in certain relations is called the *form* of appearance" (A.20/B.34). Kant isolates sensibility by separating off everything that is contributed by the understanding and its concepts, then he strips sensations from empirical intuitions so that nothing but the mere form of appearances remain. And this form is the only thing sensibility yields to us a priori. The matter of appearances corresponds to the *affection* from things, while the form of sensibility orders the sensations so that we can become conscious of them *as* something.

In this investigation it will be found that there are two pure forms of sensible intuition as principles of *a priori* cognition, namely space and time, with the assessment of which we will now be concerned. (A.22/B.36)⁽³⁾

According to the metaphysical interpretation of transcendental idealism, non-spatiotemporal things in themselves contribute the "matter" of all appearances through causally affecting the mind in such a way that sensations are "given" to us. All our representations (including pure intuitions) are mere appearances of non-spatiotemporal things in themselves.

However, as we have noted at the beginning, commentators have doubted that Kant successfully demonstrates that things in themselves are not spatiotemporal. Among recent distinguished commentators, Paul Guyer presents the neglected alternative objection that space and time might be forms of sensibility and properties of things in themselves at the same time (Guyer, 1987, pp. 334-344). Guyer argues that even if objects that are experienced by us are spatial and temporal, it is not rightly concluded that any spatial and temporal

thing is a perceived or experienced object. For him, even if perceived objects necessarily fit within the order of space and time, it is not necessary that any thing that is in the order is an object of experience: We actually do not know such de re necessity of the feature of a thing in itself, whereas Kant believes that things in themselves are necessarily nonspatial. Guyer further argues that Kant's mistake lies in the assumption that "a priori knowledge is knowledge of an absolute or de re necessity in the objects of knowledge themselves" (Guyer, 1987, p. 381). To be sure, Kant holds that any thing in the spatiotemporal order necessarily follows the order, since it is a priori known to do so. But this view is debatable for contemporary philosophers such as Saul Kripke, who argue that some contingent truths are known a priori (Kripke, 1972, pp. 274-275; Russell, 2014). In the following sections, we will see why Kant sticks to the assumption that a priori knowledge is knowledge of absolute necessity.

2. Hogan on the Neglected Alternative and Things in Themselves

In his article "Three Kinds of Rationalism and the Non-Spatiality of Things in Themselves," Desmond Hogan formulates arguments to conclude that things in themselves are not spatio-temporal. His paper is a new sophisticated presentation of how the Kantian philosophy can respond to the neglected alternative objection.

Hogan demonstrates that Kant's engagement with the rationalist epistemologies of Wolff and Crusius "uncovers a hitherto unsuspected ambiguity in his mature doctrine of the a priori unknowability of things in themselves" (Hogan, 2009, p. 358). This ambiguity is resolved if we take into account an older usage of "a priori" found in Kant's early works as well as in those of his rationalist predecessors

Wolff, Crusius and Leibniz. According to the usage, it means "knowledge through the ground": We know something a priori in this sense only if we understand it 'through' the thing or things that ground it metaphysically. For instance, in a letter to De Volder, Leibniz argues that the essence of something "cannot be conceived perfectly unless its possibility can be demonstrated a priori through some formal cause which exists in every individual method of generation" (L.524). This suggests that Leibniz takes an a priori demonstration not only as a set of logically connected propositions, but as a precise representation of how something has been produced through causal sequence. (5) Based upon this older meaning of a priori knowledge, Hogan presents arguments for the conclusion that spatial and temporal features are not features of things in themselves. Hogan's interpretation attempts to reject the neglected alternative objection, (6) and it rules out the incoherence objection that seizes on the inconsistency between the claim that we cannot have knowledge of things in themselves and the claim that the non spatio-temporality of things is certain.

To formulate an argument,⁽⁷⁾ Hogan introduces the concept of "determining ground" derived from the rationalist tradition. On the basis of Crusius' work, Hogan defines it as a ground "through which the effect is made actual or possible in such a way that it cannot result in any other way in the same circumstances" (Entwurf.84; Hogan, 2009, p. 363).⁽⁸⁾ All the features of something are completely determined by the ground, and it cannot be otherwise. For Leibniz, Wolff and Crusius, "if a feature of reality has a determining ground, then there is something "through which" that feature of reality can be known in principle" (Hogan, 2009, p. 367). In other words, they believe that the

determining ground needs to be *prior* to a feature of something. Thus an *a priori* knowledge is supposed to be known through this ground, and offer the causal sequence to explain why something has a certain feature.

Utilizing the concept of determining ground, Hogan finds two kinds of unknowability in the Kantian philosophy:

The relation a-unknowability holds between a feature of reality and a particular epistemic agent if and only if non-empirical cognition of this feature of reality exceeds the agent's cognitive competence in a strong sense. Say that a feature of reality possesses the property of b-unknowability if and only if that feature of reality lacks a determining ground through which it can be known. (Hogan, 2009, p. 367)

If something is a-unknowable, we cannot know any of its positive and negative features. So for instance, if things in themselves are a-unknowable, then we cannot even know that they are non-spatiotemporal. On the contrary, if something is b-unknowable, then although we cannot know that it has a positive feature on the basis of its determining ground, it may be known that it has a negative feature since it lacks such a ground.

Hogan argues that according to Kant, things in themselves are not a-unknowable, but they are at least b-unknowable. If they are a-unknowable, we cannot even ascribe a negative feature to them, and thus it cannot rightly be concluded that they are non-spatiotemporal. On the other hand, the b-unknowability of an object does not prohibit us from ascribing a negative feature to it. Thus it is concluded that things in themselves are non-

spatiotemporal. Focusing upon time, Kant argues that time cannot precede things in themselves as their determination:

Time is not something that would subsist for itself or attach to things as an objective determination, and thus remain if one abstracted from all subjective conditions of the intuition of them; for in the first case it would be something that was actual yet without an actual object. As far as the second case is concerned, however, time could not precede the objects as a determination or order attaching to the things themselves as their condition and be cognized and intuited *a priori* through synthetic propositions. (A.33-34/B.49)⁽⁹⁾

Hogan points out that Kant does not assert that the order in question "could not *be known to* precede" things in themselves "as their condition" (A.34/B.49). Rather, Kant proceeds from the metaphysical thesis that the order in question "could not precede" the order attaching to things themselves as their condition in such a way as to exclude synthetic a priori knowledge of the things (A.34/B.49). Hogan argues that when Kant denies knowledge of things in themselves, he means to deny a priori knowledge of things in themselves through the ground. Hogan then offers an argument to conclude the Subjectivity Thesis (ST):

(ST₁*) (Some, all) features of things in themselves are *b*-unknowable—that is, lack a determining ground through which they can be cognized.

(ST2*) If space and time are objective determinations of things in themselves, no features of any things in themselves have the

property of b-unknowability.

(ST) Space and time are not objective determinations of things in themselves. (Hogan, 2009, p. 370)

In the following, we will examine the premises of this formally valid argument.

3. How Does Kant Justify (ST,*)?

Both (ST₁*) and (ST₂*) may be controversial, but (ST,*) is relatively easier to understand in the framework of the Kantian philosophy. Kant eagerly defends the human freedom, and he holds that our wills are not completely determined by antecedent causes. For instance, a note on Kant's metaphysics lecture shows that Kant holds that "our free actions" have "no determining grounds" (Ak.28.270; Hogan, 2009, p. 371). Kant defends the existence of the thing itself on the basis of free actions, arguing that our free actions have no determining grounds. So there is something that lacks determining grounds. It can be called a thing itself, a feature of which is unintelligible. For Kant, the freedom of will is real, and it is perhaps even more real than observed phenomena that follow the laws of nature. In this view, not everything has complete determining grounds.

Comparing to (ST₁*), the second premise seems to need more explanations. In Hogan's paper, we notice two canonical reasons why Kant is committed to (ST₂*). But both of them are vulnerable to objections. First, Kant holds that if space and time were forms of things in themselves, then they would be ascribed to God, which is absurd:

But with what right can one do this [namely, apply space and time to some, but not all of

real things] if one has antecedently made both of these into forms of things in themselves, and indeed ones that, as a priori conditions of the existence of things, would remain even if one removed the things themselves?—for as conditions of all existence in general they would also have to be conditions of the existence of God. (B.71-72)⁽¹⁰⁾

To be sure, the traditional theologians never held that God is spatially extended. But this view is not too absurd in the context of 17th century philosophy, since for instance, Spinoza ascribes extension to God as one of his attributes. Kant's critical philosophy is supposed to answer the questions that have been raised by early modern philosophers without relying on dogmatic doctrines.

Second, Kant holds that if space and time were forms of things in themselves, then they would have to observe the laws of nature. Kant believes that a priori and synthetic knowledge covers geometry and mechanistic physics. Through a priori reasoning, we can know not only geometrical propositions, but mechanical laws of nature. In the *Prolegomena*, Kant declares that we can know the laws of nature a priori, and they are "laws that the understanding cognizes a priori, and indeed chiefly from universal principles of the determination of space" (Ak.4.321; Hogan, 2009, p. 377).(11) He thinks that the laws of nature that are known through a priori reasoning provide a way to calculate the motion of a phenomenal body, but things in themselves never observe such laws. Against Kant's view, nonidealists would think that it is question-begging to assume that things in themselves do not follow the laws of nature: A good number of natural scientists and philosophers believe that mind-independent material things do observe the laws of nature.

But in fact, there is another kind of reason to support (ST₂*): Kant holds that space and time are mere relations, and they cannot be inner features of things in themselves. It is suggested in the Transcendental Aesthetics of the *Critique of Pure Reason*:

Now through mere relations no thing in itself is cognized; it is therefore right to judge that since nothing is given to us through outer sense except mere representations of relation, outer sense can also contain in its representation only the relation of an object to the subject, and not that which is internal to the object in itself. (B.67)⁽¹²⁾

In a sense, Kant utilized the traditional categories of subject and property to grasp some features of things in themselves. Kant puts relations in general and inner features of things in themselves into different categories. As attributes of thought and extension in the Cartesian philosophy, they have nothing in common. Kant has a more complicated discussion of space, time and things in themselves in the following:

Those, however, who assert the absolute reality of space and time, whether they assume it to be subsisting or only inhering, must themselves come into conflict with the principles of experience. For if they decide in favor of the first (which is generally the position of the mathematical investigators of nature), then they must assume two eternal and infinite self-subsisting non-entities (space and time), which exist (yet without there being anything real) only in order to comprehend everything real within themselves. If they adopt the second position (as do some metaphysicians of nature), and hold space and time to be relations of appearances

(next to or successive to one another) that are abstracted from experience though confusedly represented in this abstraction, then they must dispute the validity or at least the apodictic certainty of *a priori* mathematical doctrines in regard to real things (e.g., in space), since this certainty does not occur *a posteriori*, and on this view the *a priori* concepts of space and time are only creatures of the imagination, the origin of which must really be sought in experience, out of whose abstracted relations imagination has made something that, to be sure, contains what is general in them but that cannot occur without the restrictions that nature has attached to them. (A.39/B.56)⁽¹³⁾

In this passage, Kant argues that if space is a real property of things in themselves, and if it is abstracted from the object in order to be known by us, then geometrical propositions cannot be necessary truths. He suggests that in this case, space is constructed out of empirically gathered manifolds that originally do not have any unity, and the imagination makes up without the guide of strict law. And we would not be able to be sure about propositions of geometry, since geometrical objects exist in space of pure intuition. It seems that the argument based upon the certainty of geometry⁽¹⁴⁾ is stronger than that upon the traditional theology, or that upon the idealistic view that mind-independent things do not observe the laws of nature.

Kant does not deviate from the rationalist tradition insofar as he thought that a priori knowledge is derived from an ontological basis. (15) According to Kant, since we know geometrical features of objects in space, truths of geometrical propositions are based upon our sensibility that provides space as a ground of sensible intuition. Thus triangles are

not merely conceived as possible abstract entities, but are also objects that are founded upon the actual receptive function. Kant supposes that this kind of ontological ground (a priori ground) brings about a strictly universal cognition:

Experience never gives its judgments true or strict but only assumed and comparative universality (through induction), so properly it must be said: as far as we have yet perceived, there is no exception to this or that rule. Thus if a judgment is thought in strict universality, i.e., in such a way that no exception at all is allowed to be possible, then it is not derived from experience, but is rather valid absolutely *a priori*. (B.3-4)⁽¹⁶⁾

Thus for Kant, if some thing is a priori known to have some feature, and to this extent it necessarily has the feature, then any other thing sharing the same feature is a priori known to have it. For instance, different experiences have a common feature that is known a priori insofar as they satisfy the conditions of experience, and this is the only feature that is known a priori. So if things in themselves were spatial, they must necessarily be so, given that sensible objects are necessarily spatial. However, only perceived

objects can be necessarily spatial, and thus things in themselves cannot be so. Kant would respond to Guyer's neglected alternative objection in this fashion: The necessity of spatial features of objects is not a conditional necessity de dicto, insofar as the features are ontologically (and thus "really") and exclusively founded by the function of sensibility.

Concluding Remark

The concept of synthetic a priori knowledge significantly characterizes the Kantian philosophy. On the one hand, Kant limits the scope of certain knowledge to a narrow domain, and on the other hand, he wants it to be "necessary." And interestingly, he shows an ontological justification for this view. He engages in metaphysics of the sensory matter (as consequent) that is caused by something nonspatiotemporal without a determining ground through which it could be known. He believes that relations of objects in space are based upon the unity of a spatial form coming from the faculty of sensibility, which alone can be the foundation of synthetic a priori knowledge of geometry. Thus for Kant, synthetic a priori knowledge cannot be compatible with the spatio-temporality of things in themselves.

Notes

- (1) Aaron Pixley wrote the first draft of this paper. Thus the concept of the paper was originally devised by him. To this, Shohei Edamura added the reasons behind the premises of Desmond Hogan's argument. The revised paper was then rearranged by both authors.
- (2) "In der Erscheinung nenne ich das, was der Empfindung korrespondiert, die Materie derselben, dasjenige aber, welches macht, daß das Mannigfeltige der Erscheinung in gewissen Verhältnissen geordnet werden kann, nenne ich die Form der Erscheinung. Da das, worinnen sich die Empfindungen allein ordnen, und in gewisse Form gestellet werden können, nicht selbst wiederum Empfindung sein kann, so ist uns zwar die Materie aller Erscheinung nur a posteriori gegeben, die Form derselben aber muß zu ihnen insgesamt im Gemüte a priori beliegen, und dahero abgesondert von aller Empfindung können betrachtet werden."
- (3) "Bei dieser Untersuchung wird sich finden, daß es zwei reine Formen sinnlicher Anschauung, als Prinzipien der Erkenntnis a priori gebe, nämlich Raum und Zeit, mit deren Erwägung wir uns jetzt beschäftigen werden."
- (4) Although Henry E. Allison introduces an argument to conclude that "neither space nor any properties thereof can be meaningfully predicated of things in themselves" (Allison, 1983, pp. 111-114 cf. Kemp Smith, 1923, p. 133; Suzuki, 2003), Guyer does not take it as persuasive, since he thinks that things in themselves may accidentally have the

- property of spatiality even if the concept of things completely lacks the predicate of spatiality (Guyer, 1987, p. 337).
- (5) Hogan mentions to Leibniz's usage of "a priori" in Section 44 of the *Theodicy*, where Leibniz argues that we can know God created the best world a priori through causes (Hogan, 2009, p. 362n).
- (6) Hogan points out that the neglected alternative objection was once introduced by Hermann Andreas Pistorius (1730-98). Pistorius claimed that Kant failed to rule out the "intelligible and thinkable" scenario that the temporal and spatial form of appearances agrees with the order of things (Hogan, 2009, p. 356).
- (7) Hogan introduces three arguments against the neglected alternative in the paper. But we will focus upon the most canonical argument (ST1*), (ST2*) / (ST) which he explains the most thoroughly.
- (8) In some context, Crusius seems to use "ground" in a weaker sense. Erik Watkins introduces Crusius' distinction between real and ideal grounds (Entwulf.34; Watkins, 2005, pp. 83). An ideal ground is a ground of our cognition that may not make an mind-independent thing possible, while a real ground certainly makes such a thing possible.
- (9) "Die Zeit ist nicht etwas, was für sich selbst bestründe, oder den Dingen als objektive Bestimmung anhinge, mithin übrig bliebe, wenn man von allen subjektiven Bedingungen der Anschauung derselben abstrahiert: denn im ersten Fall würde sie etwas sein, was ohne wirklichen Gegenstand dennoch wirklich wäre. Was aber das zweite betrifft, so könnte sie als eine den Dingen selbst anhangende Bestimmung oder Ordnung nicht vor den Gegenständen als ihre Bedingung vorhergehen, und a priori durch synthetische Sätze erkannt und angeschaut werden."
- (10) "Aber mit welchem Rechte kann man dieses tun, wenn man beide vorher zu Formen der Dinge and sich selbst gemacht hat, und zwar solchen, die, als Bedingungen der Existenz der Dinge a priori, übrig bleiben, wenn man gleich die Dinge selbst aufgehoben hätte: denn, als Bedingungen alles Daseins überhaupt, müßten sie es auch vom Dasein Gottes sein."
- (11) "Hier ist also Natur, die auf Gesetzen beruht, welche der Verstand a priori erkennt und zwar vornehmlich aus allgemeinen Principien der Bestimmung des Raums."
- (12) "Nun wird durch bloße Verhältnisse doch nicht eine Sache an sich erkannt: also ist wohl zu urteilen, daß, da uns durch den äußeren Sinn nichts als bloße Verhältnisvorstellungen gegeben werden, dieser auch nur das Verhältnis eines Gegenstandes auf das Subjekt in seiner Vorstellung enthalten könne, und nicht das Innere, was dem Objekte an sich zukommt."
- (13) "Dagegen die, so die absolute Realität des Raumes und der Zeit behaupten, sie mögen sie nun als subsistierend, oder nur inhärierend annehmen, mit den Prinzipien der Erfahrung selbst uneinig sein müssen. Denn, entschließen sie sich zum ersteren (welches gemeiniglich die Partei der mathematischen Naturforscher ist), so müssen sie zwei ewige und unendliche vor sich bestehende Undinge (Raum und Zeit) annehmen, welche da sind (ohne daß doch etwas Wirkliches ist), nur um alles Wirkliche in sich zu befassen. Nehmen sie die zweite Partei (von der einige metaphysische Naturlehrer sind), und Raum und Zeit gelten ihnen als von der Erfahrung abstrahierte, obzwar in der Absonderung verworren vorgestellte, Verhältnisse der Erscheinungen (neben oder nach einander): so müssen sie den mathematischen Lehren a priori in Ansehung wirklicher Dinge (z.E. im Raume) ihre Gültigkeit, wenigstens die apodiktische Gewißheit *bestreiten*, indem diese a posteriori gar nicht stattfindet, und die Begriffe a priori von Raum und Zeit, dieser Meinung nach, nur Geschöpfe der Einbildungskraft sind, deren Quell wirklich in der Erfarhung gesucht werden muß, aus deren abstrahierten Verhältnissen die Einbindung etwas gemacht hat, was zwar das Allgemeine derselben enthält aber ohne die Restriktionen, welche die Natur mit denselben verknüpft hat, nicht stattfinden kann."
- (14) As Karl Ameriks points out, Kant believes that only transcendental idealism makes the possibility of geometry intelligible (B.41; Ameriks, 2003, p. 106).
- (15) Distinguished scholars note that Kant provides ontological or metaphysical explanations of epistemological problems. For the "ontological interpretation" of the Kantian philosophy, see Heimsoeth 1961, Martin 1969, and Heidegger 1973.
- (16) "Erfahrung gibt niemals ihren Urteilen wahre oder strenge, sondern nur angenommene und komparative Allgemeinheit (durch Induktion), so daß es eigentlich heißen muß: so viel wir bisher wahrgenommen haben, findet sich von dieser oder jener Regel keine Ausnahme. Wird also ein Urteil in strenger Allgemeinheit gedacht, d.i. so, daß gar keine Ausnahme als möglich verstattet wird, so ist es nicht von der Erfahrung abgeleitet, sondern schlechterdings a priori gültig."

Abbreviations of Primary Texts and Translations

- A/B: Kritik der reinen Vernunft. References in accordance with the standard A and B pagination for the first and second editions. Translations are from Critique of Pure Reason, translated and edited by P. Guyer and A.W. Wood. New York: Cambridge University Press, 1999.
- Ak: *Kant's gesammelte Schriften*. Königlich-Preußischen Akademie der Wissenschaften. Cited by volume and page.
- Entwurf: Crusius. Entwurf der notwendigen Vernunftwahrheiten. Cited by section.
- L: G.W. Leibniz Philosophical Papers and Letters. Translated and edited by L.E. Loemker. Dordrecht: Reidel, 1976.

References

- Allison, H.E. (1983). Kant's Transcendental Idealism: An Interpretation and Defense, New Haven: Yale University Press.
- Ameriks, K. (2003). *Interpreting Kant's Critiques*. New York: Oxford University Press.
- Guyer, P. (1987). *Kant and the Claims of Knowledge*. New York: Cambridge University Press.

- Heidegger, M. (1973). Kant and the Problem of Metaphysics. 5th ed. Trans. by R. Taft. Indianapolis: Indiana University Press.
- Heimsoeth, H. (1961). *Studien zur Philosophiegeschichte*, Köln: Kölner Universitätsverlag.
- Hogan, D. (2009). "Three Kinds of Rationalism and the Non-Spatiality of Things in Themselves," *Journal of the History of Philosophy*, 47(3): 355-82.
- Kemp Smith, N. (1923). A Commentary to Kant's "Critique of Pure Reason." 2nd ed. New York: The Macmillan Press.
- Kripke, S. (1972). Naming and Necessity. In D. Davidson and G. Harman (Eds.), *Semantics of Natural Language* (pp.253-355), Dordrecht: D. Reidel.
- Martin, G. (1969). *Immanuel Kant: Ontologie und Wissenschaftstheorie*. Berlin: De Gruyter.
- Russell, B. (2014). A Priori Justification and Knowledge. In *Stanford Encyclopedia of Philosophy*.
- Suzuki, M. (2003). "Three Arguments to Rebut the "Neglected Alternative" Objection," *Jissen Tetsugaku Kenkyu*[実践哲学研究], 26: 33-64.
- Watkins, E. (2005). *Kant and the Metaphysics of Causality*. New York: Cambridge University Press.