

# The Unity of Nature and the Regulative Use of Ideas in Kant's *Critique of Pure Reason*

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**Abstract:** Immanuel Kant develops his account of the regulative idea of reason in the appendix of the *Transcendental Dialectic of the Critique of Pure Reason*. According to the account, the ideas of reason are not used constitutively to cognize objects but used regulatively to lead our scientific investigation. This article clarifies the role and status of the regulative idea, focusing on the conception of the unity of nature. The principal question about the unity of nature is whether nature as a whole, which is the object of our scientific investigation, has an ontologically rational structure, and if it is the case, in what right we can assume so. For this problem, two extreme types of interpretation are suggested, realist and fictionalist reading. Realists claim we know that the unity of nature exists on the one hand. Fictionalists require us to admit that there is no unity of nature but to investigate empirical objects as if it exists on the other hand. The controversy between realists and fictionalists appears to reflect the dilemma in the *Transcendental Dialectic*. While Kant seems to claim the existence of unity of nature in the appendix, but the claim endangers the entire doctrine of the *Critique of Pure Reason*, which prohibits a priori inferences about non-empirical objects. In this article, interpreting Kant's explanation of the regulative idea of the unity of nature in the appendix, I will show that this dilemma is a mere illusion, and we should reject both of the two extreme positions. Alternatively, I suggest the third way, in which the regulative idea of the unity of nature should be understood as a kind of hypothesis. I further develop the third reading by considering the conception of doctrinal belief in the Canon chapter of the *Critique of Pure Reason*. Through the analysis of the Canon chapter, I will show that the regulative idea of the unity of nature should be understood in relation to the end-setting by reason itself, and as a kind of doctrinal belief. Finally, I will present the developed form of the hypothesist reading, which interprets the regulative assumption of the unity of nature as an a priori doctrinal belief grounded on the interest of reason.

## 0. Introduction

Immanuel Kant develops his philosophy by criticising both the rationalist and empiricist traditions. His monumental work, *Critique of Pure Reason*, is the project that established his account by tracing the genesis of the requirements and fallacies of these two camps and examining them. This paper is concerned with one of the central requirements of rationalism, the unity of nature, and Kant's theory of it. The principal question about the unity of nature is whether nature as a whole, which is the object of our scientific investigation, has an ontologically rational structure, and if it is the case, in what right we can assume so. Kant's rationalist predecessors from Plato to Wolff answer this affirmatively.<sup>1</sup> If Kant also answers positively, this reflects the rationalist aspect of his philosophy. If he denies this claim, it signifies his departure from the rationalist tradition. In this way, the question about unity is decisive for Kant's position in the history of philosophy.

At first glance, Kant's answer is explicitly "No", since he dismisses most rationalist requirements in his famous arguments in the Transcendental Dialectic, though significant exceptions are allowed with limitations. The attempts of rationalists, rational psychology, rational cosmology and rational theology, which conceive of *a priori* metaphysics solely by reason independent of our intuition, are refuted one after another. Given that Kant writes that "all the inferences that would carry us out beyond the field of possible experience are deceptive and groundless" (A642/B670),<sup>2</sup> it seems that the non-empirical assumption of the unity of nature as a whole is also dismissed. However, after systematic criticism of rationalism, Kant appears to try to salvage the concepts of non-empirical objects in the appendix to the Transcendental Dialectic. He claims that the ideas of reason are not used constitutively to cognize objects but regulatively to lead our scientific investigation, and even insists that regulative ideas have some objective validity and transcendental status. These bold claims have confused readers of the *Critique of Pure Reason*. Does Kant reject the whole systematic criticism and return to rationalism? Should we dismiss the descriptions in the appendix as a mere appendix? In order to resolve this confusion, we have to differentiate between the regulative and constitutive uses of reason.

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<sup>1</sup> More precisely, Kant understands that philosophers in the rationalist tradition claim this kind of unity. Willaschek explains how the rationalist variant of transcendental realism is committed to the unity of nature (Willaschek 2018, pp. 138-148).

<sup>2</sup> References to the *Critique of Pure Reason* are by means of the standard "A/B" reference to the first and the second editions respectively. Unless modifications are indicated, the English translations are from *Cambridge Edition of the Works of Immanuel Kant*.

This paper consists of three sections. After introducing the basic features of the regulative ideas, I trace where Kant seems to argue for the existence of the unity of nature. We then reach an interpretative dilemma. We seem to be required to claim the existence of the unity of nature, yet this very claim is prohibited by Kant's criticism of rationalists in the body of the Transcendental Dialectic. The task of the second section is to show that this dilemma is a mere illusion by examining two extreme readings before suggesting a third interpretation. In the study of Kant, two interpretative camps represent each horn of the dilemma: the realists and fictionalists.<sup>3</sup> I reject both accounts and suggest an alternative position I call the hypothesist reading. However, we will find the simple hypothesist interpretation does not explain the textual evidence used by realists, though it resolves the fictionalist concern. This leads us to the final questions of the paper: if the regulative idea of the unity of nature is a hypothesis, what kind of hypothesis is it, and which of its characteristics explains its transcendental status? I answer and develop the hypothesist reading in the third section. I focus on the similarity between doctrinal belief in the Canon chapter of *Critique of Pure Reason* and the regulative idea before differentiating between them. The *a priori*-ness of the regulative idea originated in our reason explains its transcendental status and sufficiently responds to the realist requirement.

### 1. The Regulative Ideas and Two Principles of Reason

Let us start our analysis of the regulative ideas with their categorisation. In the *Critique of Pure Reason*, Kant argues that there are two interrelated but distinct types of regulative ideas. One type concerns the idea of the unity of nature, while the other type includes the ideas of the soul, the world and God. The first half of the appendix named "On the regulative use of the idea of pure reason" is devoted to the idea of the unity of nature, while the other three ideas are discussed in the second half "On the final aim of the natural dialectic of human reason". Since the focus of this paper is the unity of nature, the majority of my analysis will concentrate on the first half of the appendix.

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<sup>3</sup> Classically, this controversy is formulated as the opposition between realists and idealists, as Banham describes (Banham 2013). However, it is not clear in what sense the non-realists deny the realistic assumption in this classical categorisation. I use Willaschek's categorisation, where the controversy is re-framed as the opposition between realists and fictionalists (Willaschek 2018), because it clarifies the sub-categorisation of the non-realistic positions.

Then, what is the problem with the idea of the unity of nature? Kant briefly poses the question: “. . . whether the constitution of objects or the nature of the understanding that cognizes them as such are in themselves determined to systematic unity” (A648/B676). As the expressions “the constitution of objects” and “in themselves determined” imply, it is an ontological question about the structure of nature. After this general question, Kant develops his concrete conception of the unity of nature; it is the assumption that the unity of “power” exists independently of our investigation, and it is what we seek in scientific activity.<sup>4</sup> Thus, we can understand the unity of nature as the ontologically rational structure of empirical objects as a whole. In the appendix, Kant claims that this unity is (regulatively) necessary and has some transcendental status for our cognition. How does Kant substantiate this claim, and what does assuming it regulatively mean?

To understand Kant’s argument for the unity of nature, we must be aware of his basic account of reason. First, Kant divides our discursive faculty into understanding and reason. While “the understanding may be a faculty of unity of appearances by means of rules” (A302/B359) and provides first-order discursive cognition of objects, “reason is the faculty of the unity of the rules of understanding under principles” (A302/B359), and thus supplies second-order discursive cognition and the unity of all possible first-order discursive cognitions. This unity is called “the unity of reason” (A302/B359), which is brought about by the principle of reason. Kant thinks the principle of reason can be formulated in two ways, logically and transcendently.<sup>5</sup> The logical principle asks us “to find the unconditioned for the conditioned cognitions of the understanding, with which its unity will be completed” (A307/B364). This is the methodological principle for our “cognitions”, and it does not entail ontological claims about objects. It simply prescribes us to form a coherent and unitary set of cognitions. As Kant describes the logical principle as “the proper principle of reason in general (in its logical use)” (A307/B364), we can admit this methodological requirement is valid as the core of our theoretical rationality. In contrast, the transcendental principle says: “when the conditioned is given, then the whole series of conditions subordinated to one to the other, which is itself unconditioned, is also given” (A307–8/B364). The latter principle does not merely

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<sup>4</sup> “For even without our having attempted to find the unanimity among the many powers, or indeed even when all such attempts to discover it have failed, we nevertheless presuppose that such a thing will be found” (A650/678).

<sup>5</sup> Grier calls these principles P1/P2 (Grier 2001, p. 119-122), and Willaschek labels them the logical maxim/the supreme principle of pure reason. In this paper, I choose the neutral terms the logical principle/the transcendental principle, which follow Kant’s usage in the appendix.

concern our cognitions but “the conditioned” itself. This is not a solely methodological claim. The transcendental principle declares the existence of the unitary series itself. The transcendental principle is challenging since *a priori* metaphysical accounts of “transcendent” objects such as the soul, the world as a whole and God appear to be derived from it. According to Kant, all kinds of traditional metaphysics rely on the transition from the former methodological principle to the latter ontological principle. The issue is whether we, rational beings, not only possess the logical principle but also acquire the transcendental principle as a result of the logical one. *Critique of Pure Reason* examines this transition and, in this sense, is a “critique” of the requirements of reason itself.<sup>6</sup>

In this context, the argument about the unity of nature can be understood as a question of whether the transition from the logical principle to the transcendental one is valid. If the transition is possible, then we can say “that all possible cognitions of the understanding (including empirical ones) have the unity of reason, and stand under common principles from which they could be derived despite their variety: that would be a transcendental principle of reason, which would make systematic unity not merely something subjectively and logically necessary, as method, but objectively necessary” (A648/B676). In this case, we know *a priori* that the ontologically rational structure exists.

At first glance, Kant seems to strongly advocate this transition. He explicitly says that “[i]n fact it cannot even be seen how there could be a logical principle of rational unity among rules unless a transcendental principle is presupposed, through which such a systematic unity, as pertaining to the object itself, is assumed *a priori* as necessary” (A650–651/B678–679). This implies that since the validity of the transcendental principle is a necessary condition of the possession of the logical one, we have to assume both at the same time. He further claims that without the assumption of the transcendental principle, there is “no sufficient mark of empirical truth” (A651/B679). This may suggest the unity of nature is a necessary condition of empirical cognition in general. Finally, Kant seems to ascribe some transcendental status to the assumption of the unity of nature: “they [principles expressing the unity of nature] seem to be transcendental” (A663/B691). In summary, these bold expressions suggest that Kant claims the unity of nature exists.

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<sup>6</sup> Grier explicitly treats the transition between two principles as the general structure shared in all the topics of the Transcendental Dialectic, namely Paralogisms, Antinomies and the argument on the ideal (Grier 2001). Willaschek critically inherits Grier’s interpretative strategy (Willaschek 2018).

However, this would endanger the entire doctrine of the *Critique of Pure Reason*. Firstly, Kant introduces the appendix with a summary of the Transcendental Dialectic: “The outcome of all dialectical attempts of pure reason not only confirms what we have already proved in the Transcendental Analytic, namely that all the inferences that would carry us out beyond the field of possible experience are deceptive and groundless, but it also simultaneously teaches us this particular lesson: that human reason has a natural propensity to overstep all these boundaries” (A642/B670). We cannot have *a priori* inferences about metaphysical objects beyond our experience by solely relying on reason. This lesson leads us to the distinction between the constitutive use and the regulative use of reason. According to this distinction, we do not have the constitutive use of reason that would give us *a priori* objective cognition, but merely the regulative use that leads our scientific investigation (cf. A644/B672). The Transcendental Dialectic thoroughly criticises the transition from the logical principle to the transcendental principle and prohibits the constitutive use of reason.

Taking these characteristics into consideration, there appears to be an interpretative dilemma. The text of the appendix requires us to transition from a mere methodological principle to a bold ontological claim about the unity of nature, however, this transition is prohibited by the core claim of the Transcendental Dialectic as a whole. Research of the appendix has reflected this discrepancy. In the following section, I examine and reject two extreme interpretative positions and suggest that the dilemma is a mere illusion.

## 2. Hypothesis and the *Bestimmung* of Reason

As we have seen in the previous section, the status of the regulative idea of the unity of nature depends on whether the transition from the logical principle to the transcendental principle is valid. There are two interpretative camps, each of which answers this differently.

Realists accept the transition and insist that the unity of nature exists. They interpret the transition as a kind of transcendental argument. According to the realist reading, the unity of nature is assumed as the “transcendental backing”, which is a necessary condition of scientific activity in accordance with the logical principle of reason.<sup>7</sup> Wartenberg claims, “the results of the attempt to unify scientific concepts

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<sup>7</sup> Wartenberg 2006, p. 232

are taken to be true of nature and that this shows that the demand of reason for such unity is not merely subjectively valid”.<sup>8</sup> Thus, he argues that such unity is not a subjective assumption but objective cognition. Surely, he deems the distinction between the constitutive use and the regulative use of reason important. He interprets the constitutive use of the concept as providing the cognition of the “intrinsic characteristic that objects need to embody in order for them to be objects of our experience”,<sup>9</sup> and insists that transcendental knowledge of this unity is merely regulative since it does not entail the cognition of the intrinsic characteristics but their unitary relation.

In contrast to this realist interpretation, fictionalists reject the transition.<sup>10</sup> They interpret the textual evidence of the realists as mere fiction.<sup>11</sup> According to fictionalism, we know that the transition from the logical principle to the transcendental principle is impossible. Fictionalists further argue that the transcendental principle itself is false, as long as it is read as an ontological claim about appearances. However, it is useful for scientific investigation that we behave as if the transcendental principle is validly applicable to nature. Accordingly, the regulative use of reason requires us to admit that the transcendental principle is false but to investigate empirical objects as if the principle were true.

This controversy is a typical expression of the dilemma in the appendix. Realists require us to explain Kant’s reference to the transition, the objective validity, and some transcendental status of the regulative ideas. The tenet of fictionalism can be traced back to the prohibition of the transition, which is the central claim of the Transcendental Dialectic. What should be considered here is whether it is truly a choice between two options. I argue this is not the case. The following passage by Kant excludes both the realist and fictionalist readings:

In der Tat ist auch nicht abzusehen, wie ein logisches Princip der Vernunfteinheit der Regeln stattfinden könne, wenn nicht ein transzendentes

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<sup>8</sup> Wartenberg 2006, p. 232

<sup>9</sup> Wartenberg 2006, p. 238

<sup>10</sup> Grier 2001, ch. 8.

<sup>11</sup> Willaschek categorises Grier 2001 as providing a fictionalist interpretation, though he does not explain in what sense her interpretation is fictionalistic. Grier explains the regulative idea with the metaphors of mirror vision and optical illusion (cf. Grier 2001, pp. 286-288). As mirror vision appears but does not exist beyond the mirror itself, the object of the regulative idea does not exist as it appears. Referring to Grier 2001, Allison also explicitly characterises the regulative idea as a fiction (cf. Allison 2004, p. 426, 430).

vorausgesetzt würde, durch welches eine solche systematische Einheit, als den Objekten selbst anhängend, a priori als nothwendig angenommen wird. Denn mit welcher Befugnis kann die Vernunft im logischen Gebrauche verlangen, die Mannigfaltigkeit der Kräfte, welche uns die Natur zu erkennen giebt, als eine bloß versteckte Einheit zu behandeln und sie aus irgend einer Grundkraft, so viel an ihr ist, abzuleiten, wenn es ihr freistände zuzugeben, daß es eben so wohl möglich sei, alle Kräfte wären ungleichartig, und die systematische Einheit ihrer Ableitung der Natur nicht gemäß? denn alsdann würde sie gerade wider ihre Bestimmung verfahren, indem sie sich eine Idee zum Ziele setzte, die der Natureinrichtung ganz widerspräche (A650–651/B678–679).

In fact, it cannot even be seen how there could be a logical principle of rational unity among rules unless a transcendental principle is presupposed, through which such a systematic unity, as pertaining to the object itself, is assumed *a priori* as necessary. For by what warrant can reason in its logical use claim to treat the manifoldness of the powers which nature gives to our cognition as merely a concealed unity, and to derive them as far as it is able from some fundamental power, when reason is free to admit that it is just as possible that all powers are different in kind, and that its derivation of them from a systematic unity is not in conformity with nature? For then reason would proceed directly contrary to its vocation, since it would set as its goal an idea that entirely contradicts the arrangement of nature (A650–651/B678–679).

The first sentence seems to support the necessity of the transition and endorse the realist reading. However, in the following sentence, Kant then questions the validity of the transition, considering the possible situation in which reason assumes that there is no unity of nature. This possibility excludes the realist reading. Kant says our reason “is free to admit” the absence of the unity of nature. If the realist interpretation of the unity of nature was correct, reason would not have such discretion. In this respect, the plausibility of the realist reading is weakened.<sup>12</sup>

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<sup>12</sup> Surely, this reference to the possible situation might not be sufficient to reject the realist position thoroughly. When we take the fact into consideration that Kant carefully chooses the expression “freistände zuzugeben” which takes the subjunctive II grammatical form implying the counterfactual character of the sentence, it might be read to deny reason’s discretion to abandon the assumption of unity. However, we can interpret the counterfactual expression in the following sense: though reason is free to admit [zuzugeben] that there is no unity of nature, it never does so in the actual case. In this sense, the reference to such a possible situation is a



Let us turn to the fictionalist reading. Now we focus on the validity of the quoted text. Kant claims “then [when reason assumes there is no unity of nature] reason would proceed directly contrary to its vocation [Bestimmung], since it would set as its goal an idea that entirely contradicts the arrangement of nature [Natureinrichtung]” (A651/B679). The reason why we must assume the unity of nature is explained by our counterfactual behaviour related to the certain end-setting. If we assume there is no unity of nature, this means we behave against our own reason’s vocation. Fictionalism requires this kind of behaviour. By admitting the transcendental principle is false but still investigating empirical objects as if it were true, our reason behaves self-contradictorily with its nature. Thus, we should abandon the fictionalist way too.

Now we find the dilemma is a mere illusion, as neither the realist nor fictionalist reading is acceptable. We must seek a third way that somehow meets the requirements of the two extremes. From the quoted text, we further acquire two positive characteristics of the regulative idea of the unity of nature. First, because we deny the realist interpretation, the regulative assumption is a hypothesis that can possibly be denied by reason. Second, the hypothesis is related to our end-setting, as we saw when we examined the fictionalist reading. From these two features, we find the third reading I call the hypothesist interpretation, which claims that the regulative assumption of the unity of nature is a kind of hypothesis in relation to a certain end-setting.<sup>13</sup>

Does the hypothesist interpretation meet the two interpretative requirements? It does not claim knowledge of the unity of nature since its regulative assumption is a mere hypothesis. In this sense, it does not admit the transition from the logical principle to the transcendental principle objectively interpreted. How about the realist requirement? The answer remains ambiguous. If the regulative idea of the unity of nature is a mere hypothesis, why would Kant give it indeterminate objective validity and some transcendental status? We put forward various hypotheses in scientific investigation, but we never ascribe such characteristics to them. We now reach the final question of this paper. If the regulative idea is a kind of hypothesis, then what

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counterfactual thought experiment, and does not deny reason’s discretion itself. I admit that this sentence weakens the plausibility of the realist reading at best. The chief problems for the realist kinds of interpretation are found in the textual evidence for the fictionalist reading.

<sup>13</sup> I agree with Willaschek’s suggestion to deny both the realist and fictionalist interpretations and to deal with the regulative idea as a hypothesis (Willaschek 2018, p. 117). However, my reading differs from Willaschek’s as I argue that the hypothesis is necessarily related to end-setting.

kind of hypothesis is it, and which of its characteristics explain the indeterminate objective validity and the transcendental status?<sup>14</sup> In the final section, I attempt to answer this by highlighting the similarity between the conception of doctrinal belief in the Canon chapter and the regulative ideas.

### 3. The Unity of Nature as an *a priori* Doctrinal Belief

In the previous section, we saw two features of the regulative idea of the unity of nature. It is (i) a kind of hypothesis and (ii) related to our end-setting. In the section titled “On Opinion, Knowledge, and Belief” of the Canon chapter of *Critique of Pure Reason*, Kant introduces three types of assents “taking to be true” (Fürwahrhalten). According to the section, knowledge is based on both subjectively and objectively sufficient grounds or justification. In contrast, holding an opinion lacks sufficient grounds for it to be not only objectively but even subjectively true. Between these two there is belief: taking something to be true with subjectively sufficient justification, though lacking objectively sufficient justification for its truth. For our current purposes, we shall focus on belief.<sup>15</sup>

As Willaschek highlights, Kant’s conception of belief has a surprisingly pragmatic component.<sup>16</sup> According to his conception, “Once an end is proposed, then the conditions for attaining it are hypothetically necessary. This necessity is subjectively but still only comparatively sufficient if I do not know of any other conditions at all under which the end could be attained; but it is sufficient absolutely and for everyone if I know with certainty that no one else can know of any other conditions that lead to the proposed end” (A823–824/B851–852). In this passage, Kant explains how the belief can be seen as subjectively necessary. This kind of belief, practical belief, is understood in relation to the end-setting and the means for it. As long as the agent sets a certain end and sees some means to achieve it as necessary, she constrains herself to believe that the way to realise her end will be satisfied. It

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<sup>14</sup> My suggestion about the categorisation of interpretations of the regulative idea in the second footnote might be applied to the hypothesist reading. The minimum requirement of the hypothesist is to open to the truth of the transcendental principle. In addition to this, we must also specify the meaning of the hypothesis in order to find the sub-categorisation of the hypothesist.

<sup>15</sup> For the categorisation of *Glaube*, I follow Shigeta and claim it is necessary to admit the belief based on purely theoretical interest (Shigeta 2020a).

<sup>16</sup> Willaschek 2015.

should be noted that the condition of subjective sufficiency is met practical consideration of the end and the means for it.

Kant draws an analogy between this kind of practical belief and doctrinal belief, writing:

Weil aber, ob wir gleich in Beziehung auf ein Objekt gar nichts unternehmen können, also das Fürwahrhalten bloß theoretisch ist, wir doch in vielen Fällen eine Unternehmung in Gedanken fassen und uns einbilden können, zu welcher wir hinreichende Gründe zu haben vermeinen, wenn es ein Mittel gäbe, die Gewißheit der Sache auszumachen, so giebt es in bloß theoretischen Urteilen ein Analogon von praktischen, auf deren Fürwahrhaltung das Wort Glauben paßt, und den wir den doktrinalen Glauben nennen können (A825/B853).

Since, however, even though we might not be able to undertake anything in relation to an object, and taking something to be true is therefore merely theoretical, in many cases, we can still conceive and imagine an undertaking for which we would suppose ourselves to have sufficient grounds if there were a means for arriving at certainty about the matter; thus there is in merely theoretical judgments an analogue of practical judgments, where taking them to be true is aptly described by the word belief, and which we can call doctrinal beliefs (A825/B853).

This kind of theoretical belief is similar to what we call hypothesis and satisfies the two conditions of the regulative idea of the unity of nature. This is a theoretical assumption about what we do not have sufficient proof or justification for. For instance, Kant calls the hypothesis of the existence of aliens a doctrinal belief (A825/B853). Although it is insufficient on objective grounds, the assumption is taken to be subjectively true based on certain end-setting in an analogy with practical belief. As Gava argues, the conceptions of doctrinal belief and the regulative idea are similar in their argumentative structure.<sup>17</sup> The fact that Kant includes the ideas of God and the soul in doctrinal belief, which do not belong to the unity of nature but the other type of regulative idea, may allow us to say that the regulative idea is a kind of doctrinal belief.<sup>18</sup>

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<sup>17</sup> Gava 2018.

<sup>18</sup> Shigeta also includes the regulative idea as a kind of the doctrinal belief (Shigeta 2020b).

However, the realist requirement is relevant here. Gava poses the question, “Solange Kant dem Glauben nur subjektive Gültigkeit zuschreibt und mit ihm keine transzendente Erkenntnis assoziiert, kann uns eine Analyse dieser Form des Fürwahrhaltens dabei nicht helfen, die Frage zu erklären, was die unbestimmte objektive Gültigkeit der regulativen Ideen und ihr transzendentaler Status eigentlich sind”.<sup>19</sup> If the regulative assumption is a mere hypothesis, why does Kant give it some kind of objective validity and transcendental status? This is strong evidence for the realist interpretation. Kant counts both the hypothesis about aliens and the existence of God as doctrinal beliefs, but does not deem the former transcendental. What distinguishes the regulative idea from mere doctrinal belief?

In order to understand the difference, we must return to the paragraph quoted in the second section and remember why we reject the fictionalist strategy. This paragraph shows that “then [when reason assumes there is no unity of nature] reason would proceed directly contrary to its vocation [Bestimmung], since it would set as its goal an idea that entirely contradicts the arrangement of nature [Natureinrichtung]” (A651/B679). We can interpret this claim in relation to doctrinal belief. The unity of nature is the condition of the achievement of the end in the vocation of reason itself to acquire the unitary cognition of nature and is *taken to be true* in relation to the end-setting. If we set an end seriously and deny the condition of its realisation at the same time, we would no longer maintain rational coherency. In this way, the logical principle of reason leads us to the transcendental principle being a doctrinal belief.<sup>20</sup>

We form a plethora of hypotheses in the scientific realm, such as planetary orbit, the structure of the human genome, or the existence of aliens in Alpha Centauri. However, all scientific hypotheses are empirical and contingent, even subjectively. Only the hypothesis of the regulative idea is *a priori* and subjectively necessary because it is originated in reason. This explains why Kant gives it transcendental status.

It should be noted that in spite of this *a priori*-ness originated in our reason, the regulative idea does not have determinate objective validity, since the *a priori*

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<sup>19</sup> “As long as Kant ascribes only subjective validity to belief and associates with it no transcendental cognition, an analysis of ‘taking to be true’ in this form cannot help us to explain the question of what the indeterminate objective validity of regulative ideas and their transcendental status essentially are” (Gava 2018, p. 1216, my translation).

<sup>20</sup> As Shigeta argues, we have to admit the kind of belief related to theoretical but pure end-setting (Shigeta 2020a, pp. 155–156). However, the object of pure theoretical interest is not the unity of nature itself or one of the transcendental ideas such as the soul or God, but the unitary cognition based on the logical principle of reason. Since the end-setting based on the logical principle indirectly leads us to the assumption of the object of the transcendental principle, the transcendental illusion and the temptation of the metaphysical fallacy arise.

hypothesis is based on the subjective nature of reason. Summarising the appendix, Kant notes:

Ich nenne alle subjektive Grundsätze, die nicht von der Beschaffenheit des Objekts, sondern dem Interesse der Vernunft in Ansehung einer gewissen möglichen Vollkommenheit der Erkenntniß dieses Objekts hergenommen sind, Maximen der Vernunft. So giebt es Maximen der spekulativen Vernunft, die lediglich auf dem spekulativen Interesse derselben beruhen, ob es zwar scheinen mag, sie wären objektive Prinzipien (A666/B694).

I call all subjective principles that are taken not from the constitution of the object but from the interest of reason in regard to a certain possible perfection of the cognition of this object, maxims of reason. Thus, there are maxims of speculative reason, which rest solely on reason's speculative interest, even though it may seem as if they were objective principles (A666/B694).

The end-setting is essentially grounded in the nature of reason itself, but the nature is the interest of reason as its subjective feature. In this sense, the regulative assumption of the unity of nature is never knowledge of it, but a doctrinal belief.<sup>21</sup>

I can now formulate the developed hypothesisist reading. The regulative assumption of the unity of nature is neither knowledge nor fiction, but an *a priori* and subjectively necessary hypothesis grounded in the nature of reason.<sup>22</sup> Since this

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<sup>21</sup> Note that this developed hypothesisist reading is not applicable to the regulative ideas in general but specifically the regulative idea of the unity of nature. I suggest that for the other kind of regulative ideas, namely the soul, the world and God, this hypothesisist reading is only indirectly applicable. We must examine the relation between the first and second halves of the appendix and specify the objective validity of the objects of the transcendental ideas in relation to the unity of nature, but this is a task for a future paper.

<sup>22</sup> Principally, the developed hypothesisist reading commits to the “regressive approach” of Kant's philosophy suggested by Ameriks: “On the modest regressive interpretation, the ultimate argumentative starting point of each of the Critiques is thicker than a ‘mere Cartesian’ foundation but much thinner than any claim to an already natural, moral, aesthetic science; the original idea is simply that we have some valid everyday theoretical, or practical, aesthetic judgemental experience” (Ameriks 2003, p. 10). In the case of the regulative idea of the unity of reason, the starting point is the fact that we have already committed ourselves to some scientific activity and cannot deny the interest of reason working behind the activity. This does not mean the starting point is a specific scientific theory, such as Newtonian physics. As Willaschek argues, the requirement of unity of nature still works in contemporary science (Willaschek 2018, pp. 65–68).

reading does not admit the transition, it satisfies the fictionalist requirement.<sup>23</sup> And its *a priori*-ness originated in our reason explains its transcendental status, responding to the realists.<sup>24</sup>

## Conclusion

In this paper, we have examined Kant's account of the regulative ideas in *Critique of Pure Reason*, and can now understand it. We can answer the principal question presented in the introduction: whether nature as an object of our scientific investigation has an ontologically rational structure, or in other words, whether the unity of nature exists, and if it is the case, in what right we can assume so. According to the developed hypothesisist reading, we understand the unity of nature as an *a priori* and subjectively necessary hypothesis, more precisely, a doctrinal belief that is grounded in the nature of our reason. This third interpretation demonstrates that we cannot simply categorise Kant as a rationalist or non-rationalist. Both dogmatic and sceptical ways of understanding the unity of nature are rejected through his project of the first *Critique*. Finally, as Kant writes on the final page of *Critique of Pure Reason*, “[t]he critical path alone is still open” (A855/B833).<sup>25</sup>

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<sup>23</sup> Fictionalists may oppose the developed hypothesisist reading and claim that a hypothesis such as a mere thought experiment does not imply the prohibited transition, but as a “taking to be true” the doctrinal belief already oversteps the restriction of the Transcendental Dialectic. Especially when we take the problem of the unity of nature as an antinomy of reason, we are prohibited from assuming that the unconditional whole is given to us in the phenomenal world (cf. A497–502/B525–530). For this criticism, developed hypothesisists can rely on the Wartenberg's strategy (cf. Wartenberg 1992, p. 238). Namely, even if we take the unity of nature to be true, this does not entail specific properties of all the members of the unity, but the unitary relation of them. More precisely, what we take to be true in this doctrinal belief is not the existence of specific members of the unity, but the law itself among unspecific members.

<sup>24</sup> The necessary condition to be a hypothesisist kind of reading is to open whether the regulative principle is true or false objectively. For this point, this developed hypothesisist reading shares the interpretative strategy with Willaschek 2018. However, focusing on the subjective attitude, while Willaschek emphasizes that we should be neutral for the truth of hypotheses (cf. Willaschek 2018, p. 117), the developed hypothesisist reading requires us to take the assumption to be true based on one's own end-setting. In other words, we do not know the truth of the regulative principle but cannot be indifferent to it.

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