

Kant's Regulative Essentialism and the Unknowability of Real Essences

Abstract: In his lectures on Logic and Metaphysics Kant distinguishes between logical and real essences. While the former are related to concepts and are knowable, the latter are related to things and are unknowable. In this paper, I argue that the unknowability is explained by the modal characteristic of real essences as a necessitating ground of which a priori knowledge is impossible. I also show how this claim is related to the unknowable necessity of particular laws of nature. Since laws of nature are conceived as grounded in real essences, the unknowability of the latter is equivalent to Kant's other claim that there can be no knowledge of the necessity of particular laws of nature. Necessity can only be known a priori, and therefore, the necessity of particular laws is only assumed and conceived as grounded in something unknowable, a real essence. This conclusion will allow me to attribute to Kant a position I label as 'regulative essentialism', meaning that real essences have an indispensable role of in accordance with the rational interest to explain nature as a system of laws and natural kinds, combined with an epistemic humility about the correspondence of our empirical concepts to real essences.

Keywords: Kant, real essence, laws of nature, regulative ideas

In his lectures on Logic and Metaphysics Kant distinguishes between logical and real essences.¹

While the former are related to concepts and are knowable, the latter are related to things and are

¹ I cite Kant from the Akademie edition by reference to volume and page number. Quotations from the *Critique of Pure Reason* are cited by the standard (A/B) pagination. I mostly use the translations of the Cambridge edition of Kant's works (Kant 1992; 1998; 1997; 2003; 2002). I will use the following abbreviations: OPA= *The Only Possible Argument in Support of a Demonstration of the Existence of God*; CJ=*Critique of the Power of Judgment*; MFNS=*Metaphysical Foundations of Natural Science*

unknowable. This is not an original view, for example, Locke has a similar distinction and also claims that real essences are unknowable.² The unknowability thesis raises two questions. First, what is the justification for this claim. Secondly, what is the point of introducing an in principle unknowable entity, what role do real essences play in Kant's system. The first question has not received adequate attention in the literature. My answer is that the unknowability is explained by the modal role of real essences as a necessitating ground of which a priori knowledge is impossible. This account leads to the second question by connecting the unknowability problem with recent debates on Kant's account of particular laws of nature. According to an increasingly dominant interpretation labeled as the 'necessitation account', particular laws of nature (in contrast with the general laws of nature), are grounded in the essence of things.³ On one strand of this interpretation the particular laws of nature are unknowable because their necessity cannot be cognized.⁴ Since particular laws of nature are conceived as grounded in real essences, the unknowability of the latter is equivalent to Kant's other claim that there can be no knowledge of the necessity of particular laws of nature. Necessity can only be known a priori, and therefore, the necessity of the particular laws is only assumed and conceived as grounded in unknowable real essences. Hence, regarding the second question about the role of real essences, this conclusion will allow me to attribute to Kant a position I label as 'regulative essentialism', by which I mean accepting the ineliminable role of real essences in the metaphysical picture that stems from the rational interest to explain nature as a system of laws and natural kinds, combined with an epistemic humility about the correspondence of our concepts to the real essences of things. Like other ideas of reason, the notion of real essence presents another example of the way Kant appropriates a metaphysical concept

² Locke, *Essay* III.iii.15.

³ (Watkins 2005, 243–65; Kreines 2009; Massimi 2017; Messina 2017; Engelhard 2018; Cooper 2022).

⁴ This is argued in (Kreines 2009; 2017; Messina 2017).

from the tradition to explain its meaning as an expression of rational norms of inquiry. In this way, my proposal complements the metaphysical picture of the ‘necessitation’ account of the laws of nature by connecting it with ideas of reason and their regulative role.

I proceed as follows. In section 1 I present the historical background for the distinction between logical and real essences in Locke’s skepticism about real essences and Leibniz’ reaction to Locke. In section 2 I analyze the development of the distinction and the justification for the unknowability of real essences in Kant’s lectures on Logic and Metaphysics. I argue that Kant transitions from a quantitative explanation to a modal one. In section 3 I show how this modal explanation is related to Kant’s account of the grounds of the particular laws of nature. In section 4 I show how the unknowability of real essence and their role in explaining laws of nature leads to their regulative status.

1. Locke’s distinction and its Historical Background

The term ‘essence’ has a long history at least since Aristotle and was central in medieval and early modern metaphysics. Basically, essence is what makes something what it is. But the concept has several functions. One sense is classificatory, designating the set of properties necessary to be the type of thing that it is, the set that is included in a definition of the type. The other sense is causal, the ground and organizing principle of the properties of a thing. In the Aristotelian-scholastic tradition those two senses are combined in the term ‘substantial form’. The substantial form is the ground of the substance’s necessary properties and corresponds to a specific type of thing. It is the immaterial element that is combined with raw matter to produce the different substances. Therefore, the scientific classification to natural kinds, species and genera has an ontological

ground in the different substantial forms.⁵ It is against this backdrop that Locke first introduces the term ‘real essence’ and distinguishes it from ‘nominal essence’ as part of his rejection of substantial forms.⁶

First, Essence may be taken for the very being of any thing, whereby it is, what it is. And thus the real internal, but generally in Substances, unknown Constitution of Things, whereon their discoverable Qualities depend, may be called their *Essence*... Secondly, the learning and disputes of the Schools, having been much busied about genus and species, the word essence has almost lost its primary signification; and instead of the real constitution of things, has been almost wholly applied to the artificial constitution of genus and species. 'Tis true, there is ordinarily supposed a real constitution of the sorts of things; and 'tis past doubt, there must be some real constitution, on which any collection of simple ideas coexisting, must depend. it being evident, that Things are ranked under Names into sorts or *Species*, only as they agree to certain abstract *Ideas*, to which we have annexed those Names, the *Essence* of each *Genus*, or Sort, comes to be nothing but that abstract *Idea*, which the General, or *Sortal* (if I may have leave so to call it from *Sort*, as I do *General* from *Genus*.) Name stands for. And this we shall find to be that, which the Word *Essence* imports, in its most familiar use. These two sorts of *Essences*, I suppose, may not unfitly be termed, the one the *Real*, the other the *Nominal Essence*. (Essay III.iii.15)

For Locke, the real essence of a particular thing is its internal constitution, its microscopic structure which is the cause of its apparent qualities. In other words, the causal role of essence is encapsulated in the concept of real essence. The set of properties used to classify the thing as belonging to a certain type, however, is a collection of abstract ideas generated by the understanding through comparison and abstraction of similar particulars. Thus, the classificatory role of essence is encapsulated by the concept of nominal essence. The distinction is also epistemic. The real essence of substances is unknowable because human senses cannot perceive their internal microscopic structure. The nominal essence is ‘*is the Workmanship of the Understanding*’ so it is of course knowable. While there are similarities

⁵ See (Pasnau 2011, 549–52).

⁶ See (Lowe 2013, 77–78).

in the internal structure of things, Locke argues that the classification using nominal essence does not necessarily track something in the real nature of things.⁷ The arguments are not relevant for our concerns here, what is important is that in rejecting scholastic substantial forms, Locke separates to two functions of essence, the grounding of properties and the classificatory.⁸

Leibniz opposes Locke's distinction between the two meaning of essence in his *New Essays*⁹. Metaphysically, Leibniz argues that there is a mind-independent division into species in nature, and not only in our invented concepts. For Leibniz, essence is “fundamentally nothing but the possibility of the thing under consideration” (§293), and hence the distinction between real and nominal essence does not make sense. Essence is a metaphysical concept and therefore it cannot be merely conventional as Locke's nominal essence. Therefore, the causal and classificatory roles cannot be separated. However, the Aristotelian distinction between real and nominal definitions remains useful according to Leibniz. A real definition expresses the essence of a thing, which is also the ground of its possibility to exist both as an individual and as belonging to specific kind of thing. A nominal definition on the other hand might be extensionally equivalent but does not express the essence. Epistemically, Leibniz is more optimistic than Locke. Even though we do not perceive the internal structure of substances, our concepts can progress toward tracking the essences of natural kinds, i.e., forming real definition that express essences.¹⁰

The philosophers who directly influenced Kant such as Wolff and Crusius endorsed (more or less) the traditional metaphysical view of essence which is both classificatory and causal,

⁷ The question whether Locke believed there are natural kinds in nature or that all classification is mere convention is disputed in the literature.

⁸ Ayers 1993:56 (Ayers 1993, 56)

⁹ Translated in (Leibniz 1996).

¹⁰ New Essays § 400.

ignoring Locke's epistemological concerns about essences. Wolff defined essence as 'that in which the ground of the remaining [determinations] that are attributed to the thing is to be found' and then continues unproblematically to explain what is entailed when one cognizes an essence: 'whoever cognizes the essence of a thing can point out the ground of everything that is attributed to it. Yet one cognizes the essence of a thing when one understands how it is determined in its kind'¹¹. Hence, essence is the ground of necessary properties and there is no question about knowing it. In his *Sketch of the Necessary Truths of Reason*,¹² Crusius presents a distinction between three levels of essences. Logical essence ('logikalisches Wesen') is the set of all necessary properties belonging to a thing (§30); Metaphysical essence is the set of properties sufficient for distinguishing it from other things (§17); Fundamental essence ('Grundwesen') is the ultimate ground of all properties (§39). Thus, the distinction is a metaphysical distinction based on the level of fundamentality, rather than an epistemological distinction. Although Crusius opposed many of Wolff's doctrines, their views on essence were similar.

2. Essence in Kant's Lectures

The traditional view of essence is also found in the textbooks Kant used in teaching Logic and Metaphysics by Meier and Baumgarten. Both never use the term 'real essence' but rather reiterate the distinction between real and nominal definitions.¹³ Yet in teaching those texts, in addition to mentioning the former distinction, Kant introduces the separate distinction between logical and real essence. Although he might have picked the term 'logical essence' from Crusius, the

¹¹ *German Metaphysics* §33 translated in (Watkins 2009, 13). Also in *German Logic* §48

¹² Translated in (Watkins 2009, 137).

¹³ Meier's *Excerpt from the Doctrine of Reason* §121, translated in (Meier 2016). §280-82, Baumgarten's *Metaphysics* §350, translated (Baumgarten 2013).

distinction resembles more Locke's distinction who first coined the term 'real essence'. The distinction is first mentioned but not explained in Herder's notes of the early pre-critical lectures on Metaphysics (28:104)¹⁴. The explanation of the distinction appears first in the lectures on Logic. For example, in the Blomberg logic from the early 1770's:¹⁵

The complete basic concept of a thing is in general its essence. The first ground of everything that I think in the concept of the thing, however, is the logical essence. The first basic concept of everything that really and in fact belongs to the thing, however, is the real essence. (24:116)

The logical essence is what is represented in our *concept* of a thing, and the real essence is what belongs to the thing itself. The two are not necessarily identical. In this respect, the distinction resembles Locke's distinction between real and nominal essence, between the concepts we use to identify and classify objects and the metaphysical reality that grounds those objects.

Experience allows us to form concepts of things, i.e., a set of predicates (characteristic marks) according to which we identify things and distinguish them from other things. Among these, some predicates might be thought as necessary for the object to be subsumed under a concept, i.e., belonging to the logical essence of the concept. But like all predicates, also these essential predicates are cognized from experience and are revisable according to it:

Our empirical concepts are very changeable, because our experience is extended more and more each day. The logical essence is therefore also very alterable and changeable, because with time we think more and more determinations in the concept of a thing. (24:117-8)

Kant repeatedly claims that cognizing logical essences is easy, as it just involves analyzing our concepts.¹⁶ Real essences, on the other hand, are unknowable. But what is the argument for this unknowability? While the unknowability has been frequently noted, the question about its reasons

¹⁴ Herder also uses the distinction in his unpublished essay on Being (Noyes 2018, 198:65,67).

¹⁵ Also in Vienna Logic 24:839, Dohna-Wundlacken Logic 24:728, Jäsche Logic 9:58.

¹⁶ E.g., 24:728

has not been thoroughly discussed in the growing literature on Kant's notion of essence.¹⁷ Locke maintained that real essences are unknowable because our senses cannot perceive the internal structure of substances. Kant's reasoning, however, is different. Let us look at the various explanations, for example in the Blomberg logic:

... infinitely more is contained in the real essence than in the logical essence. We cannot actually cognize the real or objective essence of a single object of experience or of the senses. At the most it is possible for us properly to have insight into its logical or subjective essence. What we think in connection with the word for a thing is very small, and scant, indeed, often only very little; but everything that really belongs to a thing *revera* is frequently immeasurable and cannot be determined at all. To search for the real essence of empirical concepts and objects is thus a completely vain effort (24:117)

From this passage it might seem that the explanation is quantitative: we can know some essential predicates of things but not all of them. For example, we know that water is a fluid without odor or taste, 14 times lighter than quicksilver. But from this concept which we take as the logical essence 'I cannot at all derive all the remaining properties which are determined for water' (24:118); Similarly, in the later Dohna-Wundlacken logic: 'we can never experience all the marks of water no matter how far physics advances' (24:728).

But why can we know some of the properties that belong to a real essence and not all of them? One explanation could be that there are infinitely many properties. Human finite intellect can never enumerate an infinite number of properties. But why is there necessarily an infinite number of properties in every real essence? There is no argument to that effect in the text. One possible explanation: if the essential predicates contain also relational predicates (e.g., water is 14 times heavier than quicksilver), and there is an infinite number of essences, and therefore an infinite number of relations, then there is also an infinite number of essential predicates. But Kant

¹⁷ E.g. Stang 2016:216 'At this point, though, we are interested in what real essences are, according to Kant, not whether we know them.' Stang does not return to this question. The rest of the chapter is focused on the grounding of laws on essences in general, and then on the single essence of *matter*, and its privileged status regarding the general laws of physics. For other relevant mentions of the unknowability of real essence see (Hanna 1998, 512; Massimi 2017, 157; Cooper forthcoming, sec. 2.3).

denies that relational predicates are essential, and for a plausible reason: although the range of possible relations depends on the essence, relations are contingent upon the existence of another thing, they are not fundamental.¹⁸

Another possibility is that the talk of infinity is rather loose and that the issue is that is just that there can be more properties belonging to the real essence than what we attribute to the logical essence. This is what is initially stated in the Blomberg logic: ‘this does not yet prove that still more marks cannot exist in the object. The real essence comprehends everything that can ever actually belong to a thing.’ (24:116). But if there are no infinite properties, then it is conceivable that we are acquainted with all the properties of the essence.

However, that such an acquaintance, even if possible, would not count as knowledge, because we cannot know that we are acquainted with *all* the properties so that there are no more to discover. For that, we would need a justification that the known properties are *all* the properties, that the match between the set of predicates we include our concept and the actual properties of the thing is not accidental. Thus, the unknowability of real essences does not stem from the number of unknown predicates but from lacking a justification for the completeness of our knowledge.

There is, indeed, another characterization of real essences which explains why there is no justification for knowing that one is acquainted with all the properties of a real essence. This characterization is modal rather than quantitative, i.e., concerns the necessity of properties rather than the complete enumeration of them. In the L2 Metaphysics lectures, Kant states: ‘a real essence is the **first ground** of all determinations of an essence... a real essence is the **first inner ground** of all that which belongs to the matter itself’ (28:553). Knowing the real essence of something

¹⁸ ‘Extra-essential things, however, are either marks (or internal marks) or relations (or external marks) whose possibility is determined solely by the essence’ (24:116).

amounts to knowing a ground for its properties, which mean knowing why they are instantiated by the thing. As noted above, this is the traditional view of essence as the ground of all properties espoused by Wolff, Crusius and Baumgarten.

Also in these lectures, Kant repeats the claim that real essences are unknowable:

We can infer the inner principle only from the properties known to us; therefore the real essence of things is inscrutable to us, although we cognize many essential aspects. (ibid)

In contrast with the logic lectures, the reason for the unknowability is not that we cannot know all properties, but that we cannot know their ground, i.e., we do not know *why* they belong to the essence. Kant concedes here that we cognize some essential aspects and from these we can infer a principle that grounds them. I will argue, however, that such an inference does not amount to knowledge but is at most an abductive hypothesis. But if this is true, when Kant writes that ‘we cognize many essential aspects’ he does not mean that we cognize them *as* essential. In other words, we cognize some aspects of a thing, then infer that they are essential, *as if* grounded in a real essence. But this inference does not amount to knowledge that the properties *necessarily* belong to the thing, as would be the case if they could be derived from the ground and not empirically.

One way to characterize a priori knowledge is ‘knowledge through the ground.’¹⁹ In other words, knowledge of real essences, if it were possible, would have to be a priori rather than empirical:

To have insight into the real essence exceeds human understanding. We cannot provide a complete *ground* for a single thing... we cannot explain any thing in nature *a priori* and without any experience (Vienna Logic 24:839-40)

¹⁹ See (Hogan 2009, 52). Hogan shows that this definition is common in the rationalistic tradition.

The following passage from a letter to Reinhold clarifies and explains this point about the impossibility of a priori knowledge of real essences:

... the real essence (the nature) of any object, that is, the primary inner ground of all that **necessarily belongs** to a given thing, this is impossible for man to discover in regard to any object... But to know the real essence of matter, the **primary, inner, sufficient ground** of all that **necessarily** belongs to matter, this far exceeds all human capacities... We cannot discover the essence of water, of earth, or the essence of any other empirical object... the reason for this is precisely that since the logical essence is to be known analytically and the real essence must be known **synthetically and a priori**, there must be a **ground** of the synthesis for the latter. (11:37-8 emphasis mine)

For our purposes, what is important in this passage is the explicit connection between the notions of necessity, grounding, real essence, and the synthetic a priori. Traditionally, the notion of essence involves a modality of necessity. Essential properties are those that are necessarily instantiated by the thing in order to be the thing it is. The ground-consequence relation in Kant (and his rationalist predecessors) is also a relation of necessitation. For example, in the lecture on Metaphysics: ‘Ground is that upon which something follows in a wholly necessary way’ (ML2 28:548). It is therefore easy to understand why a real essence is a kind of a ground, as it is what explain the necessity of the essential properties. For Kant, knowledge of necessity must be a priori rather than empirical:

Experience teaches us, to be sure, that something is constituted thus and so, but not that it could not be otherwise. ... if a proposition is thought along with its necessity, it is an a priori judgment (B3).

A Logical essence is also a kind of a ground because it can ground a priori knowledge from definitions following the principle of non-contradiction, i.e., analytically. If a real essence could be known, on the other hand, it would be known a priori non-analytically, i.e., synthetically. Kant’s central thesis in his critical philosophy is that we have synthetic a priori knowledge about the objects of experience. But this knowledge is based on the formal conditions for the possibility of experience. The unknowability of real essence means that they are conceived as a necessitating

ground but are not part of the general conditions of experience and therefore cannot be known a priori.

3. Real essences and the laws of nature

But if real essences are unknowable, why talk about these ‘know not what’²⁰ in the first place? My suggestion is that real essences are meaningful for Kant because of his account of particular laws of nature, and that the unknowability of real essences correlates with the mere assumption of their necessity.

3.1. Pre-critical Essentialism

The view that the laws of nature are grounded in essences has roots in Kant’s pre-critical works, for example in ‘The only possible argument in support of a demonstration of the existence of God.’²¹ The work presents a proof for the existence of God based on the inference to a single ground of all possibilities. What is important for the present context is the identification of essence with possibility. This identification is continuous with traditional view of essence presented above. For Leibniz essence is ‘fundamentally nothing but the possibility of the thing under consideration’ (New Essays §293). In Baumgarten’s *Metaphysics* ‘inner possibility’ is interchangeable with ‘essence’ (also ‘nature’ or ‘formal ground’, *Metaphysica* §40). Wolff also equates ‘possibility’ with essence, that which makes a thing possible *as* what it is (*Deutsche Metaphysik* §35). Like Kant, the Leibnizians maintained that all possibilities, hence all essences, are grounded in God.²² What is noteworthy in Kant, is the relation between essences and his account of the laws of nature.²³

²⁰ As Locke argues against Aristotelian substantial forms (Essay III.iii.17).

²¹ Henceforth OPA.

²² Leibniz *Monadology* §44 translated in (Leibniz 1989, 647), Wolff *Deutsche Metaphysik* §975; Baumgarten *Metaphysica* §868.

²³ See also (Insole 2011; Massimi 2014) for Kant’s pre-critical essentialism.

The lawful order of nature is the subject of the lengthy second part of the book, titled ‘concerning the extensive usefulness peculiar to this mode of proof in particular’ (OPA 2:93-155). The title means that the section does not comprise a standalone proof for the existence of God, but rather it exemplifies the conduciveness of the conception of God as the ground of all possibility advanced in the first part for the investigation of nature. One of Kant’s goals in the second part of the essay is to reduce the role of divine action in scientific explanations. This does not mean that the order of nature does not display harmony and purposiveness which is depended on God. But the correct way to think about the harmony in nature is as a result of the necessary laws discoverable by the natural sciences rather than specific divine decrees.²⁴ Kant distinguishes between the existence of things in the created world, which is ‘morally’ dependent on God, i.e., through his will, and the essences of things which have a non-moral dependence on God as the ground of all possibility (OPA 2:100). Since laws of nature are grounded in essences, they are indirectly and non-morally grounded in God. Thus, discovering unity between the laws of nature provides evidence for the unity of essences. This unity points to a single ground of all essences, i.e., God:

Our mature judgement of the essential properties of the things known to us through experience enables us, even in the necessary determinations of their internal possibility, to perceive unity in what is manifold and harmoniousness in what is separated... Our purpose from now on will be to see whether the internal possibility of things is itself necessarily related to order and harmony, and whether unity is to be found in this measureless manifold, so that, on this basis, we could establish whether the essences of things themselves indicate an ultimate common ground. (OPA 2:92)

The assumption that laws of nature are grounded in essences can be inferred from the headings of the different sections, such as ‘unity in the manifold of the essences of things is demonstrated by appeal to the properties of space’ (OPA 2:93), and ‘unity in the manifold of the essences of things proved by reference to what is necessary in the laws of motion’ (OPA 2:96). This means that Kant

²⁴ In section 2 of OPA Kant provides several examples for such harmony in geometry, mechanics, astronomy, etc.

regards the laws of geometry to be grounded in the essence of space, and the laws of motion to be grounded in the essence of matter: ‘the necessity of these laws [of motion] is such that they can be derived from the universal and essential constitution of all matter’ (OPA 2:99).

I argue that this notion of essence as the ground of the laws of nature would later be designated in the lectures as ‘real essence’. Yet in the pre-critical writings Kant seems to assume that essences are not in principle unknowable. For example in the prize essay of 1763, he maintains: ‘even if you are not acquainted with the complete essence of the thing, you can still safely employ those characteristic marks to infer a great deal from them about the thing in question’ (2:286). Thus there can be knowledge of essences, even if incomplete.

3.2. Real essences and the Necessitation Account of Laws

This optimism about the epistemic access to essences changes in the critical period, as we have seen in the lectures. I argued that this change occurs for modal considerations. These modal considerations are also reflected in Kant’s critical account of the laws of nature. The status of particular laws of nature in Kant’s critical philosophy is a contested issue in the literature which I will not attempt to settle. I will follow here one recent account labeled by Kreines as the ‘necessitation account’ of the laws of nature.²⁵ According to this account of Kant’s concept of a law of nature, the necessity of the laws is grounded in the essences of things. This means that the metaphysical account of what it is to be a law of nature is not derived from the epistemic conditions of knowing the laws of nature. Thus the ‘necessitation’ interpretation does not settle the question

²⁵ See (Kreines 2009; 2017). Similar views are advanced in in (Watkins 2005, 243–65; Massimi 2017; Messina 2017; Engelhard 2018; Cooper forthcoming).

about our epistemic access to the necessity of the laws of nature.²⁶ I will argue that the necessity of particular laws is unknowable for the same modal reason real essences are unknowable.

I present here a short summary of the necessitation account of the laws of nature. In the Critique of Pure Reason, Kant states that causal laws are not mere generalizations but ideally describe relations of necessitation between cause and effect:

The concept of cause . . . requires that something A be of such a **kind** that something else B follows from it **necessarily** and in accordance with an absolutely universal rule . . . the effect does not merely come along with the cause, but is posited through it and follows from it. (A91/B124 emphasis mine)

The relation of necessitation means that if there is a law connecting changes in instances of A's with instances of B's then it is a relation between *kinds* of things: there is something in the *nature* of the kind A and the kind B that necessitates this relation. In the *Metaphysical Foundations of Natural Science*,²⁷ we see that by 'kinds' that ground causal laws, Kant means real essences. Essence is defined as 'the first inner principle of all that belongs to the possibility of a thing', while nature (in the formal meaning rather than as the totality of all things) as 'the first inner principle of all that belongs to the existence of a thing' (MFNS 4:468, 4:468n). In other words, nature is the

²⁶ (Kreines 2009; 2017) argues that the necessity of the laws of nature is unknowable and therefore we have no real knowledge of particular laws of nature. In my discussion I largely follow Kreines' modal reasoning. (Messina 2017) also connects the unknowability of particular laws with their being necessitated by epistemically inaccessible grounds, perhaps involving 'features of the noumenal world' (p. 147). This view is not shared by all proponents of the 'necessitation' account. (Watkins 2005) does not address the question of knowability. (Massimi 2017) argues that the necessity of particular laws of nature is cognizable because they are regarded as instances of the general principle of causality (169). (Engelhard 2018) also argues for the knowability of laws of nature because they are grounded in powers of individuals directly perceived (32). It is beyond the scope of this paper to criticize these views in detail, I will just note that it is questionable that they can undermine Kreines' claim that particular laws are unknowable (in a strict Kantian sense). Regarding Massimi, the question is what justifies the subsumption of an observed regularity under the a priori principle of causality. I suggest that is only an assumption and not valid knowledge. Regarding Engelhard, there is a difference between attributing power to an individual substance through its effects and cognizing the lawfulness of powers attributed to *types* of substances. I suggest that the latter is only assumed and not observed. (Cooper forthcoming) makes an important contribution by utilizing the hypothetical use of reason and the doctrine of method to specify in detail the type of knowledge involved. Cooper argues that although the epistemic status of particular laws does not amount to cognition it is a kind of fallible hypothetical knowledge based on objective reasons. This epistemic account is compatible with my account of the regulative status of real essences.

²⁷ Henceforth MFNS.

essence of an existent thing.²⁸ Since the properties derived from the ‘first inner principle’ belong necessarily to a thing, these could also be called laws:

... the word nature already carries with it the concept of **laws**, and the latter carries with it the concept of the **necessity** of all determinations of a thing belonging to its existence... (MFNS 4:468)
For laws, that is, principles of the **necessity** of that which belongs to the existence of a thing (MFNS 4:469 emphasis mine)

We see here that the laws of nature are necessary because they are grounded in the essences of things.²⁹ A few clarifications and qualifications are required here. The most general laws of the phenomenal world do not depend on the essences of specific kinds. They are cognized a priori because there is an argument showing them to be constitutive of ‘an object of experience at all’ (for example the principle that every alteration occurs according to a causal law proved in the second analogy).

In MFNS Kant aims to show that the necessity of the most general laws of physics is cognizable *a priori* by reference to the forms of sensibility and the pure concepts of the understanding when applied to the most general empirical concept of matter. This can be done because the concept of matter, though empirical, can be analyzed without reference to other concepts given by experience (MFNS 4:472).³⁰ Thus, Kant provides a priori arguments for several principles of mechanics and the law of gravitation presupposing the empirical concept of matter. But beyond matter in general, there are still regularities that hold for interactions between particular kinds of matter. These regularities are discovered empirically and no a priori argument for them is possible: ‘But one should guard against going beyond that which makes possible the

²⁸ At some places in the lectures Kant identifies ‘real essence’ with ‘nature’, e.g., *Metaphysics Mrongovius* 29:820.

²⁹ Stang calls this type of necessity *nomic necessity*: something is nomically necessary iff it is grounded in the real essences of empirical natural kinds (Stang 2016: p. 229ff).

³⁰ This argument is expounded in Friedman’s work, e.g. Friedman 2014.

general concept of a matter as such, and wishing to explain a priori its particular, or even specific, determination and variety' (MFNS 4:524).

In the introduction to the 3rd Critique Kant turns to discuss these more particular laws of nature. Kant states that in contrast with the general laws of nature there are also particular laws of nature which are discovered empirically, yet according to the general notion of laws of nature they express real necessity:

... there must nevertheless also be laws for it which, as empirical, may seem to be contingent in accordance with the insight of our understanding, but which, **if they are to be called laws** (as is also required by the concept of a nature), must be regarded as **necessary** on a principle of the unity of the manifold, even if that principle is **unknown** to us. (CJ 5:180)

The understanding is of course in possession a priori of universal laws of nature, without which nature could not be an object of experience at all; but still it requires in addition a certain order of nature in its particular rules, which can only be known to it empirically and which from its point of view are contingent. These rules without which there would be no progress from the general analogy of a possible experience in general to the particular, it must think as laws (i.e., as **necessary**), because otherwise they would not constitute an order of nature, even though it does not and never can **cognize their necessity**. (KU 5:184)

Following the general principle of causality, since all alterations are thought according to causal laws, also those found to hold for particular kinds of matter follow a causal law. But since they are discovered only empirically, they are cognized as contingent. In these passages, Kant claims that although we do not cognize their necessity, we still conceive of them as laws, and therefore as necessary.

I argue that the lack of insight into the necessity of particular laws correlates with the unknowability of real essences which are conceived as the ground of empirical causal laws. But since we do regard particular laws as necessary and as grounded in the different essences of things, the concept of real essence is meaningful and important in the Kantian system. I label the role assigned to the concept of real essence as regulative, following other uses Kant makes of the term. Thus, the connection shown between the account of particular laws of nature and the question of

real essences illuminates a general feature of the Kantian system, the existence of a set of metaphysical notions that are significant yet unknowable, and therefore designated as regulative ideas.

4. The regulative role of real essences

According to the necessitation account, the necessity of the particular laws is unknowable but can be assumed as a regulative principle in the scientific investigation of nature.³¹ Natural science proceeds according to the assumption that there are particular laws, although their necessity is unknowable. This regulative status permeates also to real essences. Relative to the regulative principle to assume the necessity of particular laws, we can conceive of a metaphysical ground for this kind of necessity. Yet the conception of such a ground is not a real explanation, because it is not an object of knowledge. The conception of real essences is rather the expression of what is presupposed but cannot be derived from the *a priori* conditions of experience: nature as determined by necessary laws grounded in the essences of natural kinds. In other words, the concept of real essence expresses the acceptance of the regulative principle that there are particular necessitating causal laws grounded in the different kinds of things.

The regulative use of reason for the investigation of nature is discussed in the Appendix to the dialectic of the first Critique.³² The general goal of reason, ‘what reason quite uniquely prescribes and seeks to bring about concerning it is the systematic in cognition, i.e., its interconnection based on one principle’. Specifically, regarding nature, the goal is to form ‘a system interconnected in accordance with necessary laws’ (A645/B673). How is this goal related to the significance of real essences? We should notice in the above quote that there are *two* features

³¹ See (Kreines 2017, 330).

³² Henceforth the *Appendix*

of reason's goal regarding the laws of nature: maximal systematicity (unity under one principle) and necessity. The regulative principle of systematic unity has been thoroughly discussed in the literature. Here I want to focus on the second feature, the necessity of the laws and their relation to essences, though the two features are related as will be shown below.

the *Appendix* includes an explicit discussion of essences both as the assumed ground of causal laws and as regulative ideas. Right after discussing the general regulative principle of unity, Kant continues to give examples of how science tries to achieve unity by positing pure chemical elements as ideas of reason in order to unite various phenomena according to laws governing the interaction between the things composed of these ideal kinds:

Such concepts of reason [ideas] are not created by nature, rather we question nature according to these ideas... Admittedly, it is hard to find **pure earth, pure water, pure air**, etc. Nevertheless, concepts of them are required (though as far as their complete purity is concerned, have their origin only in reason) in order appropriately to determine the share that each of these natural causes has in appearance; thus one reduces all materials to earths (mere weight, as it were), to salts and combustibles (as force), and finally to water and air as vehicles (machines, as it were, by means of which the aforementioned operate), in order to explain the chemical effects of materials in accordance with the idea of a mechanism. (A646/B674).³³

The explicit explanation for the status of the elements as mere ideas of reason is their purity, since in experience nothing is pure. But according to the above account of particular laws, the causal powers of elements, if regarded as necessitating and not as mere regularities, can only be conceived as grounded in something unknowable, a real essence.

It is not accidental that Kant chose examples of (now outdated) theories in chemistry.³⁴ Later in MFNS, Kant claims that without a priori knowledge there can be no 'proper' natural science, and that for this reason, chemistry is not a proper science (4:468, 470-1). However, chemistry is a (non-proper) science because it aims for a system of causal laws (e.g., 'all metals

³³ Also in R45 14:371, and 29:161.

³⁴ (Messina 2017, 147) also mentions chemistry as an example of unknowable particular laws.

can be calcined').³⁵ But these laws can only be discovered empirically, and 'carry with them no consciousness of their necessity' (MFNS 4:468). As shown in the above passage, particular laws are conceived as grounded in the powers of essences and correlated with the classification to natural kinds. The formulation of chemical causal laws and their classification into different powers is therefore expressed in the ideas of unknowable real essences as grounds of causal powers.

In the *Appendix*, the chemistry examples are embedded within the presentation of the general regulative principle of systematic unity. Although the focus of these passages is the systematic unity of the chemical laws of nature, their necessity is presupposed and conceived as grounded in the essences of elements. Therefore, both the systematic unity of chemical laws and the necessity of these laws have a regulative status. The regulative status of both assumptions, systematicity and necessity stems from the ultimate role of the faculty of reason:

[W]hat reason quite uniquely prescribes and seeks to bring about concerning it is the **systematic** in cognition, i.e., its interconnection based on one principle... through which this cognition comes to be not merely a contingent aggregate but a **system** interconnected in accordance with **necessary laws**. (A645/B673 emphasis mine)

The interest of reason is to seek a supreme principle that would both unify all our cognitions and explain their necessity as derivable from it. Of course, we do not possess such a principle for our empirical knowledge. But assuming as a regulative idea that there is such a principle, allows us to continuously approximate our empirical knowledge to the demand of reason for a system of necessary laws. Since real essences are unknowable, our only grip on the necessity of particular laws is provided by our progress in systematizing laws. The regulative principle of the

³⁵ See McNulty 2015 for a defense of the view that Chemistry for Kant is a rational though non-proper science. My main disagreement with McNulty is the primacy of the necessity of laws of nature. According to McNulty, the ideas of reason are used to ground the necessity of the chemical laws. On my view, the ideas of elements are used to *express* the necessity presupposed in any law of nature but that cannot be justified transcendently.

systematicity of our concepts is, therefore, a proxy for knowing that they track the unknowable real essences.³⁶ In this way, the regulative use of reason combines both the necessity and systematic unity of the laws of nature. Therefore, Kant's essentialism is regulative, belonging to the set of regulative principles used in scientific inquiry.

This account allows me to reject readings that dismiss Kant's essentialism altogether. For example, Engelhard argues that the inscrutability of real essences entails their irrelevance for understanding the grounds of the necessity of the laws of nature, and thus, 'there is reason to cast doubt on an essentialist reading of Kant's transcendental philosophy'.³⁷ Instead of essences, Engelhard argues that the necessity of the laws of nature is grounded in dispositional properties (i.e. powers) of individual substances. This might explain metaphysically the necessity of individual events, but it cannot explain the necessity common to similar events, their lawfulness. Without attributing the dispositional properties to essences common to kinds of things, it is unclear what makes them ground *laws* rather than mere regularities.

Let me expand on the relation between the necessity of laws and their systematic unity. My account of regulative essentialism is based on the necessitation account of particular laws. There is another position in the literature on Kant's view of particular laws, usually called the 'best-system' account.³⁸ These readings rely heavily on the *Appendix* and the role of the principle of systematic unity. According to these readings, particular laws of nature are mere empirical generalizations that are considered as necessary insofar as they are part of an ideal system of laws projected according to the regulative principles of reason. But being part of the progress toward

³⁶ This is compatible also with (Cooper forthcoming) claim that particular laws are knowable in a fallible hypothetical manner. The match between empirical concepts and real essences is knowable in this same weaker sense of knowledge.

³⁷ (Engelhard 2018, 32) and (Engelhard 2018, n. 35).

³⁸ For example in (Kreines 2009, 527).

an ideal system is the epistemic condition of justification, not a metaphysical account of what is a law of nature, one that explains how laws govern regularities.³⁹ The concept of real essence is such an explanation, but there can be no knowledge of the correspondence of our empirical concepts to real essences. Yet, since both the necessity and the systematicity of the particular laws are demanded by reason, progress according to the norm of systematicity is considered to satisfy the second demand of necessity and provide the epistemic justification for it.⁴⁰

I argued that the notion of real essence has a regulative role regarding the necessity of the laws of nature similarly to the role of the principle of systematic unity. Additionally, both are related to the content of the regulative idea of God.⁴¹ In the second part of the *Appendix*, Kant discusses the regulative role of the three transcendental ideas of reason, the soul, the world-whole and God. Among the three ideas, the idea of God is uniquely connected with the systematic unity of nature:

[T]he idea of that being [God], means nothing more than that reason bids us consider every connection in the world according to principles of a systematic unity (A686/ B714)

But what is the relation between God and the systematicity of nature? The idea of God expresses the systematic unity of the laws of nature, not because God is conceived as an intelligent designer. This would make the systematic unity merely contingent, depending on divine intervention and not grounded in the nature of things:

The regulative principle demands that systematic unity be presupposed absolutely as a unity of nature ... as following from the **essence** of things. But if I antecedently make a highest ordering being the ground, then the unity of nature will in fact be done away with. For then this unity is entirely foreign and contingent in relation to the **nature of things**, and it cannot be cognized from the **universal laws** thereof (A693/B721 emphasis mine)

³⁹ See (Kreines 2009, 530), (Messina 2017, 135–36).

⁴⁰ This is a sketch toward reconciling ‘best-system’ accounts of particular laws with the necessitation account. Discussing this solution is beyond the scope of this paper.

⁴¹ Discussing the meaning and status of the ideas of reason, including the idea of God is beyond the scope of this paper. For recent discussions see (Zuckert 2017; Kraus 2020, 187–206; Spagnesi 2022).

We see in this passage that the laws of nature must be thought of as grounded in the nature (or essence) of things. Thus, God is conceived as the unifying ground of all essences and consequently as the ground of the systematicity of the laws of nature. As discussed in section 3.1, Kant is committed to this conception of God from the earliest pre-critical writings. The above passage shows that Kant continued to maintain it also in the critical period. This is explicit also in the lectures on Theology given after the first Critique:

we make the essence of things themselves derivative from God, that is, from his essence... if the laws and arrangements in nature which flow from the essence of things themselves are to be dependent on God (and they must be dependent on him, since otherwise we would be unable to find any ground for their possibility) then they can be derived only from his original essence' (28:1035)

All essences depend on God because God is the ground of all possibility. Thus, in addition to the analogue regulative role, the metaphysical content of the idea of God is tightly connected to the concept of real essence as an expression of the regulative principles of reason.

The idea of God expresses the necessity of the laws of nature because it functions as the ultimate ground of real essences which ground particular laws. This is another manifestation for what I argued above that the necessity of the particular laws of nature is conceived as grounded in what is beyond the conditions of experience. Intermediately the ground is conceived using the concept of real essence; ultimately the ground is conceived through the idea of a special noumenal being, God.⁴² The conception of God as the ground of all essences inherited from the pre-critical writings thus expresses the norm that cannot be derived from the *a priori* conditions of experience but is imposed by reason on our investigation of nature: nature should be understood as determined by a unified system of necessary laws grounded in the essences of natural kinds.

⁴² Since the idea of God is an idea of a noumenal object, the necessity of the laws of nature grounded by it would be a form of what Stang calls *Noumenal necessity* (Stang 2016, p. 221ff). Stang relates *Noumenal necessity* to the grounding of phenomena on noumena in general. Here I extend it, though merely as a regulative assumption, to the relation between God, real essences, and the particular laws of nature.

5. Conclusion

Let us summarize the main argument. Kant's claim that real essences are unknowable is explained by the modal characteristic of real essences as a necessitating ground. Since knowledge of necessity must be a priori, and no such a priori knowledge is possible, knowledge of real essences is impossible. The unknowability of real essences is correlated with the unknowability of particular laws of nature, since the causal relations expressed by these laws are grounded in the causal powers that belong to real essences. Despite this unknowability the concept of real essence has a meaning which is regulative. It signifies the continuous efforts of science to form concepts of natural kinds that function in the description of causal laws. Regulative essentialism means that the concept of real essence is inseparable from reason's goal to explain nature as a system of causal laws, although there can be no knowledge whether our empirical concepts track real essences. My account leaves important questions open: is Kant committed to the existence of unknowable real essences? Are they objects of theoretical beliefs or are they merely heuristic devices for scientific inquiry? Answers to these questions depend on a range of other correlated epistemological and metaphysical questions about regulative ideas, particular laws of nature and their grounds. Discussing these questions will have to be deferred to another occasion.⁴³

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⁴³ I would like to an anonymous referee for the *European Journal of Philosophy* for their valuable feedback. I am also grateful to James Hebbeler for his insightful comments at the 5th Biennial Meeting of the North American Kant Society in which an earlier version of this paper was presented. This research was supported by the Israel Science Foundation (grant No. ISF 2907/21).

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