Lorenzo Spagnesi*

# The Systematic Unity of Reason and Empirical Truth in Kant's *Critique of Pure Reason*

https://doi.org/10.1515/kant-2023-2027

**Abstract:** This paper attempts a reconstruction of reason's contribution to empirical truth in connection with Kant's definition of truth as the agreement of cognition with its object. I argue that Kant's treatment of truth in the Transcendental Analytic is completed in the Appendix to the Transcendental Dialectic with an often neglected but compelling argument (what I shall call the Variety Argument). This argument postulates such a variety among appearances as to undermine any attempt to formulate empirical truths. Crucially, I argue that this variety does not depict an extreme scenario, but rather our own epistemic situation in the absence of reason. Reason completes Kant's theory of truth by allowing the understanding (i) to form empirical concepts and (ii) to approximate empirical truth.

**Keywords:** reason, systematic unity, empirical truth, concept formation

## 1 Introduction

There have long been questions about how to understand the relations between the faculties in Kant's *Critique of Pure Reason*. The debate between conceptualist and non-conceptualist readings of Kant in particular has focused on the relation between sensibility and the understanding in the production of perceptual experience. There is, however, another important relation that has been far less studied in the literature: the relation between the understanding and reason. In this paper, I will show that reason plays a key but underappreciated role in allowing the understanding to obtain empirical cognition, in particular empirical truth. Investigating this role can deepen our understanding of the relations between the faculties in the first *Critique* and of Kant's critical project as a whole.[1]

1 Kant's discussion of systematic unity in the first *Critique* has a close relation to the treatment of reflective judgment and the principle of purposiveness in the *Critique of the Power of Judgment*. In this paper, I will not thematize this complex and enigmatic relation. However, I will highlight several features of Kant's discussion of the possibility of empirical cognition in the first *Critique* that

***Kontakt: Dr. phil. Lorenzo Spagnesi**, Universität Trier; spagnesi@uni-trier.de

Kant introduces reason and its principles of systematic unity (often referred to in the secondary literature as reason's systematicity) in the first part of the Appendix to the Transcendental Dialectic. After delimiting the function of reason in the course of the Dialectic, this is one of the few sections in which Kant seems to speak of this faculty in positive terms. In the Appendix, Kant examines how reason relates to the understanding not only by limiting its use, but also by giving direction to it and unifying its cognitions. Moreover, he unequivocally characterizes this positive use as "indispensably necessary" ("unentbehrlich nothwendig")[2] and based on "transcendental principles" [transscendentale Principien"].[3]

The positive contribution of reason is far from clearly spelled out, however. The details of Kant's account of reason are so murky that some commentators have even charged Kant with self-contradiction, starting from Kemp Smith's influential reading.[4] Most readings of the Appendix, however, can be characterized as methodological interpretations.[5] According to McFarland (1970), Guyer (1990), Pickering (2011), and Willaschek (2018),[6] among several others, Kant's text is minimally interpreted as follows: the systematic use of reason is indeed essential for us, but only if our aim, for scientific or classificatory reasons, is to extend our empirical cognition as far as possible. The core of this interpretation, as Geiger suggests, is that basic empirical knowledge of nature is possible without reason's systematicity.[7] Strictly speaking, therefore, reason is neither "indispensably necessary", as Kant claims,[8]

seem to anticipate key passages of the Introductions to the third *Critique*. My reading of systematic unity can therefore help us to understand Kant's later position as a refinement rather than a complete revision of his previous position (cf. Guyer 1990).

**2** KrV, A 644/B 672. All quotations of the *Critique of Pure Reason* are taken from Kant, Immanuel: *Critique of Pure Reason*. Ed. and transl. by Paul Guyer and Allen W. Wood. Cambridge 1998.

**3** KrV, A 651/B 679–A 663/B 691.

**4** See Kemp Smith, Norman: *A Commentary to Kant's Critique of Pure Reason*. New York 1962, 543–552.

**5** This characterization is used by both Paul Abela (*Kant's Empirical Realism*. Oxford 2002) and Ido Geiger ("Is the Assumption of a Systematic Whole of Empirical Concepts a Necessary Condition of Knowledge?". In: *Kant-Studien* 94, 2003, 273–298).

**6** McFarland, John D.: *Kant's Concept of Teleology*. Edinburgh 1970; Guyer, Paul: "Reason and Reflective Judgement: Kant on the Significance of Systematicity". In: *Noûs* 24, 1990, 17–43; Pickering, Mark: "The Idea of the Systematic Unity of Nature as a Transcendental Illusion". In: *Kantian Review* 16 (3), 2011, 429–448; Willaschek, Marcus: *Kant on the Sources of Metaphysics. The Dialectic of Pure Reason*. Cambridge 2018.

**7** See Geiger (2003).

**8** Massimi has recently drawn attention to this aspect. On her account, even interpretations according to which the illusion of reason motivates the understanding and allows us to conceive of ideal illusory objects (such as Michelle Grier: *Kant's Doctrine of Transcendental Illusion*. Cambridge 2001) do not do full justice to Kant's text, for this ability "might at best be useful, instrumental, desirable;

nor a transcendental condition of empirical cognition. Rather, it acts as an important guideline for extending our knowledge.

To date, opposition to this view has been voiced by a smaller number of authors. Walker (1990), Abela (2002), Geiger (2003), Allison (2004), and Mudd (2017)[9] have in different ways proposed more radical interpretations which try to vindicate the systematicity of reason not just as an additional desideratum that extends our knowledge but as a transcendental principle of experience.[10] Note that to say that systematic unity is a transcendental principle is not necessarily to say that it is a condition of the very possibility of experience (like, e. g., the categories of the understanding). More plausibly, it is to say that it is a necessary and indispensable condition of experience as giving rise to *empirical cognition*. Despite being supported by several passages in the Appendix, this reading has the disadvantage of not being easily reconcilable with the Transcendental Analytic, where Kant seems to leave no room for a transcendental function of reason.

These interpretative problems become clear in the context of the particular aspect of reason that represents the main concern of this paper, namely the fact that reason's systematic unity is repeatedly presented as a criterion of empirical truth. Take the following passages from the Appendix:

> The hypothetical use of reason is therefore directed at the systematic unity of the understanding's cognitions, which, however, is the *touchstone of truth* for its rules.

> For the law of reason to seek unity is necessary, since without it we would have no reason, and without that, no coherent use of the understanding, and, lacking that, *no sufficient mark*

---

but not indispensable" (Massimi, Michela: "What is This Thing Called "Scientific Knowledge? Kant on Imaginary Standpoints and the Regulative Role of Reason". In: *Kant* Yearbook 9 (1), 2017, 70).

**9** Walker, Ralph C.S.: "Kant's Conception of Empirical Law". *Proceedings of the Aristotelian Society* 64, 1990, 242–258; Abela (2002); Allison, Henry E.: *Kant's Transcendental Idealism*. New Haven 2004; Mudd, Sasha: "The Demand for Systematicity and the Authority of Theoretical Reason in Kant". In: *Kantian Review* 22 (1), 2017, 81–106.

**10** Other approaches that take seriously the transcendental status of the principles of reason include: Buchdahl, Gerd: *Kant and the Dynamics of Reason: Essays on the Structure of Kant's Philosophy*. New York 1992; Neiman, Susan: *The Unity of Reason: Re-reading Kant*. New York 1994; Ypi, Lea: "The Transcendental Deduction of Ideas in Kant's Critique of Pure Reason". In: *Proceedings of the Aristotelian Society* 117 (2), 2017, 163–185; and Massimi, Michela: "What is This Thing Called "Scientific Knowledge? Kant on Imaginary Standpoints and the Regulative Role of Reason". In: *Kant Yearbook* 9 (1), 2017, 63–84. Paul Guyer (2017; "Imperfect Knowledge of Nature. Kant, Hume, and the Laws of Nature". In: *Kant and the Laws of Nature.* Eds.: A. Breitenbach and M. Massimi. Cambridge, 49–67) and Angela Breitenbach (2018; "Laws and Ideal Unity". In: *Laws of Nature.* Eds. W. Ott and L. Patton. Oxford, 108–121) also offer strong interpretations of reason, although in close connection with the specific problem of empirical laws of nature, which I cannot discuss here.

> *of empirical truth*; thus in regard to the latter we simply have to presuppose the systematic unity of nature as objectively valid and necessary. (Emphasis added)
>
> The systematic connection that reason can give to the empirical use of the understanding furthers not only its extension but also guarantees its *correctness*. (Emphasis added)[11]

In these passages, Kant links the employment of reason not only to the extension of our empirical knowledge, but also to its truth and correctness. As a result, it is hard to reconcile them with any methodological interpretation. If reason only provides us with a method to extend our already secured basic experience ever further, how can it play a substantial role in relation to empirical truth?[12] Advocates of the methodological interpretation generally undercut the significance of this aspect of reason. However, the latter strategy does not seem particularly successful in terms of textual analysis. When using it in relation to truth, Kant generally gives the word "touchstone" (*Probierstein*) a strong meaning, namely that of "necessary condition".[13] This reading is clearly supported by the second passage quoted above: if, without the coherent use of the understanding guaranteed by reason, there would be *no sufficient* mark of empirical truth, it seems that reason must play a fundamental role in making empirical truth possible.

Despite such resounding statements, however, Kant does not particularly elaborate on why and how reason is a necessary condition of empirical truth. This has made the interpretation of such passages puzzling for advocates of the transcendental interpretation as well. Most of them do not offer a reconstruction of such a

**11** "Der hypothetische Vernunftgebrauch geht also auf die systematische Einheit der Verstandeserkenntnisse, diese aber ist der Probirstein der Wahrheit der Regeln"; KrV, A 647/B 675. "Denn das Gesetz der Vernunft, sie zu suchen, ist nothwendig, weil wir ohne dasselbe gar keine Vernunft, ohne diese aber keinen zusammenhängenden Verstandesgebrauch und in dessen Ermangelung kein zureichendes Merkmal empirischer Wahrheit haben würden, und wir also in Ansehung des letzteren die systematische Einheit der Natur durchaus als objectiv gültig und nothwendig voraussetzen müssen"; KrV, A 651/B 679. "Gleichwohl befördert der systematische Zusammenhang, den die Vernunft dem empirischen Verstandesgebrauche geben kann, nicht allein dessen Ausbreitung, sondern bewährt auch zugleich die Richtigkeit desselben"; KrV, A 680/B 707.

**12** Guyer makes a similar point; see Guyer (2017, 54).

**13** Kant generally gives a strong meaning to this term when it is related to truth. For example, the principles of general logic are called the "negative touchstone" of truth (see 2.1). In *On a Discovery* (1790), Kant explicitly relates this term to the "elements of our *a priori* cognition and the ground of their validity with regard to objects prior to all experience" ("Nachforschung der Elemente unserer Erkenntniß *a priori* und des Grundes ihrer Gültigkeit in Ansehung der Objecte vor aller Erfahrung"; ÜE, AA 08: 188; translation from Kant, Immanuel, *Theoretical Philosophy after 1781*. Ed. and transl. by Henry Allison and Peter Heath, transl. by Gary Hatfield and Michael Friedman. Cambridge 1992).

contribution or appeal to a vaguely determined form of 'coherentism'.[14] This does not seem to be either supported by the text or a sufficient reason to discard the methodological interpretation, for it is commonly accepted that the question of truth – if a question at all – is fully settled in the Transcendental Analytic and that reason is not really required for making empirical truth possible.

In this paper, I will attempt a reconstruction of reason as a 'touchstone of truth' in close connection with Kant's general theory of truth. More specifically, I will try to answer the following questions: Is the notion of truth that Kant expounds in the Transcendental Analytic complete? Does it need the contribution of the faculty of reason? And if this is the case, how should we conceive of such a contribution? I will argue that Kant's treatment of truth in the Analytic is completed in the Appendix with an often neglected but compelling argument (what I shall call the Variety Argument). This argument postulates such a variety among the appearances that are given to us as to undermine any attempt at formulating empirical truths. Crucially, I will argue that this variety does not depict an extreme scenario, but rather our own epistemic situation in the absence of reason. Reason completes Kant's theory of truth by allowing the understanding (i) to form empirical concepts and (ii) to approximate empirical truth. The strategy of the paper is as follows. I will first introduce the key elements of Kant's theory of truth (Section 2). I will then present and criticize the methodological and transcendental interpretations of reason's contribution to truth (Section 3). I will use this criticism to propose a refined reading of the main argument of the first part of the Appendix, and I will explain how such an argument helps us to understand reason's contribution to truth (Section 4). This will be followed by a conclusion (Section 5).

# 2 A brief reconstruction of Kant's notion of truth

## 2.1 Kant's definition of truth

Right at the beginning of the Appendix, Kant specifies that the categories of the understanding "lead to truth, i. e. to the agreement of our concepts with their objects" ["zur Wahrheit, d. i. der Übereinstimmung unserer Begriffe mit dem Objecte, führen"], while reason and its ideas effect only a mere "illusion" ["Schein"] (KrV, A 642/B 670). The reason for this difference seems to be the following: while the concepts of the understanding have to do with objects directly, ideas relate to

**14** See Walker (1990), Abela (2002), and Allison (2004).

the concepts of the understanding and hence have to do with objects only indirectly. From this, however, it does not follow that reason cannot make an *indirect* contribution to truth. This is exactly how Kant repeatedly and carefully portrays such a contribution. As is evident from the passages above, reason's contribution to truth is always mediated by the understanding. Reason is not directly a touchstone of truth, but a "touchstone of truth *for the rules of the understanding*"; without reason, we would have "*no coherent use of the understanding*, and, lacking that, no sufficient mark of empirical truth". Reason's systematicity guarantees the "*correctness*" of the "*empirical use of the understanding*". If reason is a necessary condition of truth, then it must be an *indirect* condition of truth.

Unfortunately, Kant does not offer a systematic account of truth, but when he does speak about it, he always refers to the concept of truth as 'agreement' (or correspondence), which he inherits from the tradition.[15] In the third section of the Introduction to the Transcendental Logic, Kant explicitly claims that the definition of truth as "the agreement of cognition with its object" ["Übereinstimmung der Erkenntniß mit ihrem Gegenstande"] is "granted and presupposed" ["geschenkt und vorausgesetzt"] in his *Critique*.[16]

He specifies that this definition of truth does not provide us with "the general and certain criterion of truth" ["ein allgemeines Kriterium der Wahrheit"],[17] or, as he puts it in the *Jäsche Logic*, the "universal material criterion of truth" ["ein allgemeines materiales Kriterium der Wahrheit"].[18] Such a criterion, similarly to the Cartesian criterion of clarity and distinctness or the Leibnizian principle of identity, would be a sign or rule that always allows us to decide whether a certain cognition is true or not. But for Kant, if truth is the agreement of cognition with its object, then no universal material criterion of truth is possible.[19] It is simply contradictory, Kant argues, to demand a criterion that can both account for the agreement of a particular cognition with a particular object and be valid for all cognitions. There can be a universal criterion, but it must be formal. In the first *Critique* and the lectures on logic, he identifies the latter with the principles of general logic (the principle of contradiction, the principle of sufficient reason, and the principle of excluded

**15** Often referred to as the 'correspondence theory of truth'. I do not suggest, however, that Kant's theory of truth can be read along the lines of contemporary interpretations of the same theory, as, for example, Robert Hanna (2000; "Kant, Truth and Human Nature". In: *British Journal for the History of Philosophy* 8 (2), 225–250) does.

**16** KrV, A 58/B 82.

**17** Ibid.

**18** Log, AA 09:51; quotations from Kant's lectures on logic (*Jäsche Logic, Blomberg Logic, Vienna Logic*) are taken from Kant, Immanuel, *Lectures on Logic*. Ed. and transl. by Michael Young. Cambridge 1992.

**19** See KrV, A 58–59/B 83.

middle),[20] which can merely certify whether a cognition is formally correct, that is, whether it agrees with itself, not with the content to which it is related. As a result, this formal criterion is a necessary but not a sufficient condition of truth: the "negative touchstone of all truth".[21]

One might take this treatment of truth to mean two things: first, that for Kant there cannot be criteria of truth other than the merely negative criteria provided by general logic; and second, that the definition of truth as 'agreement' therefore does not play a significant role in Kant's philosophy.[22] However, following Hanna (2000) and Rosenkoetter (2009),[23] neither of these claims is supported by the text. As regards the former, Kant only claims that there cannot be a unique, universal material criterion; from this, however, it does not follow that there cannot be other criteria of truth in addition to general logic (see Hanna 2000, 244). As regards the second claim, it is sufficient to note that Kant argues for the self-contradictoriness of a universal material criterion on the very premise that truth *is* "correspondence".[24] Since this premise is never questioned elsewhere – as we have seen, this definition is indeed "granted and presupposed" – and is mentioned again and again in crucial passages throughout the *Critique*, we should take the definition seriously as what Kant considers our best effort to define truth (see Rosenkoetter 2009, 196 f.).

## 2.2 The relation between truth and the understanding

It is admittedly difficult to complement the view on truth that Kant offers in the Introduction to the Transcendental Logic and in his logic lectures with the positive parts of his transcendental philosophy. It is worth noting, however, that in the course of the Analytic Kant repeatedly connects the faculty of understanding with truth.[25] What has the pure understanding got to do with truth? How does it enter into the picture of truth as 'agreement' illustrated above? An answer is offered by the following passage:

**20** As they are listed in Log, AA 09: 51–53.

**21** KrV, A 60/B 84.

**22** Indeed, this has been a standard approach to the question of truth in Kant. See, for instance, Kemp Smith (1962).

**23** Rosenkoetter, Timothy: "Truth Criteria and the Very Project of a Transcendental Logic". In: *Archiv für Geschichte der Philosophie* 91, 2009, 193–236.

**24** With respect to the self-contradiction of a material universal criterion, Kant says: "it is already a great and necessary proof of cleverness or insight to know what one should reasonably ask" (KrV, A 58/B 82).

**25** Kant calls the aspect of truth that has to do with the transcendental principles of the understanding "transcendental truth" (KrV, A 146/B 185).

> These rules of the understanding are not only true *a priori* but are rather even *the source of all truth*, i. e., of the agreement of our cognition with objects, in virtue of containing the ground of the possibility of experience, *as the sum total of all cognition in which objects may be given to us*. (Emphasis added)[26]

A necessary condition of truth (as the agreement of cognition with its object) is the possibility of objects being given to us. Since for Kant objects are given to us in experience as "the sum total of all cognition", this amounts to the possibility of our cognitions being *objectively valid*. Pure understanding offers such a necessary condition. Truth is made possible by the fact that the understanding, while providing the conditions of possibility of experience, also provides the conditions of possibility of the objects of experience.[27]

The problem of how objectively valid cognitions are possible represents the leading question of Kant's critical *Erkenntnistheorie*, from his letter to Marcus Herz (1772) to the core parts of the Transcendental Analytic in the first *Critique*. As such, the full theory cannot even be summarized here.[28] For present purposes, I would like to highlight only the relation between the concepts of the understanding and empirical truth. The transcendental deduction alongside the doctrine of schematism are supposed to show how the pure concepts of the understanding acquire objective validity when applied to appearances. The categories of the understanding are related to appearances through their respective schemata, which provide them with "significance" ["Bedeutung"].[29] As a result, Kant says, they are "in the end of none but a possible empirical use" ["am Ende von keinem anderen, als einem möglichen empirischen Gebrauche"], since they merely serve to subject empirical appearances to general rules.[30] The understanding thus makes the agreement between cognitions and objects possible at the empirical level; that is, it "makes empirical truth possible".[31]

But how shall we conceive of such an intellectual grounding of empirical truth? Is it a full-blown derivation, such as the Leibnizian deduction of all truth

**26** "Ob nun aber gleich diese Verstandesregeln nicht allein *a priori* wahr sind, sondern sogar der Quell aller Wahrheit, d. i. der Übereinstimmung unserer Erkenntniß mit Objecten, dadurch daß sie den Grund der Möglichkeit der Erfahrung als des Inbegriffes aller Erkenntniß, darin uns Objecte gegeben werden mögen, in sich enthalten"; KrV, A 237/B 296.

**27** See also KrV, A 111 and A 158/B 197.

**28** See Rosenkoetter (2009) for an extended discussion of the Analytic as a "logic of truth" (KrV, A 131/B 170).

**29** KrV, A 146/B 185

**30** KrV, A 146/B 185.

**31** Ibid.: The passage reads: "In dem Ganzen aller möglichen Erfahrung liegen aber alle unsere Erkenntnisse, und in der allgemeinen Beziehung auf dieselbe besteht die transscendentale Wahrheit, die vor aller empirischen vorhergeht und sie möglich macht".

from the principle of identity? This cannot be the case, for otherwise the categories would be universal material criteria of truth. Kant is very careful in delimiting this condition of possibility. The "agreement with the laws of the understanding", Kant says, is the "formal aspect of all truth" ["das Formale aller Wahrheit"].[32] And similarly, the Analogies of Experience, based on the categories of relation, are said to account only for the "formal conditions of empirical truth" ["formale Bedingungen der empirischen Wahrheit"].[33] Kant is clear: the content of appearances – the appearances in their *materiality* – can only be given to us in intuition. As a result, the material aspect does not depend on the understanding. Rather, as Kant puts it, the understanding "depends on this as its condition: that objects are given to us in intuition, to which it can be applied".[34]

The main points of Kant's notion of truth can be summarized as follows. For Kant, truth is the agreement of cognition with its object. Such a definition, however, does not give us a universal material sign of truth. From the definition it instead follows that the notion of such a sign or criterion is self-contradictory. There can be universal criteria, but they must be formal: the rules of general logic and the principles of the understanding. Their formality, however, must be distinguished. Logical rules merely ensure the internal consistency of cognitions. The laws of the understanding are instead responsible for making our cognitions objective, and yet they cannot determine the content of our experience. This latter aspect of truth is given to us only in intuition.

## 2.3 Empirical truth: textual analysis

Is the above reconstruction complete? Do the rules of logic and the rules of the understanding suffice when it comes to grounding empirical truths? To answer these questions and to see whether reason might enter this picture, we need to focus a bit more on Kant's notion of empirical truth. Recall that in the Appendix, systematicity is presented as providing a criterion of empirical truth – we should therefore evaluate whether systematicity might actually be required by empirical truth or, as claimed by the methodological interpretation, merely represents a desideratum for extending our knowledge.

The definition of truth implies that, at the empirical level, truth is the agreement of empirical cognitions with objects. First, what is an empirical cognition?

**32** KrV, A 294/B 350.

**33** KrV, A 191/B 236.

**34** "[…] daß uns Gegenstände in der Anschauung gegeben seien, worauf jene angewandt werden können"; KrV, A 62/B 87.

Since for Kant cognition always results from the unification of intuitions provided by the faculty of sensibility and concepts provided by the understanding,[35] a cognition that concerns empirical experience is a cognition that involves sensible intuitions and empirical concepts. Second, according to the definition of truth, empirical cognitions must agree with objects. There are therefore at least two preconditions for empirical truth: (i) the possibility of formulating empirical concepts; and (ii) the agreement of empirical cognitions with objects. A standard reading of Kant's account of empirical concepts, shared by those who advocate the methodological interpretation, does not invoke reason as a condition of truth and finds the answers to (i) and (ii) in our experience and application of the concepts of the understanding.[36] This reading is textually supported as follows.

(i) The *locus classicus* of Kant's account of empirical concept formation is the *Jäsche Logic*. There, Kant provides an empiricist account of the origin of empirical concepts. Empirical concepts, for Kant, both contain marks and can be contained in other concepts as marks: for example, the concept 'gold' contains the marks 'yellow' and 'non-rusting' and is contained in the concept 'metal'. As regards their origin, Kant claims that it is possible to derive empirical concepts from sensory experience through "comparison of objects of experience":

> An empirical concept arises from the senses through *comparison of objects of experience* and attains through the understanding merely the form of universality. The reality of these concepts rests on actual experience, from which, as to their *content*, they are drawn. (Emphasis added)[37]

The content of empirical concepts is drawn from actual experience; their universal form is instead attained through the understanding. But how can this universality be explained? The "logical *actus*" of origination of the form of concepts, Kant explains, consists in the three operations of comparison, reflection, and abstraction ["Vergleichung", "Überlegung", "Absonderung"].[38] The concept 'tree', to use Kant's example, results from comparing the differences between objects as regards their parts (trunks, branches, leaves, etc.), reflecting on their commonalities, and abstracting from their other properties. Abstraction is only considered a "negative condition" for generating universal representations; comparison and reflection are

**35** See KrV, A 51/B 75–76.

**36** See, for example, Pickering (2011, 438).

**37** "Der empirische Begriff entspringt aus den Sinnen durch Vergleichung der Gegenstände der Erfahrung und erhält durch den Verstand bloß die Form der Allgemeinheit. Die Realität dieser Begriffe beruht auf der wirklichen Erfahrung, woraus sie, ihrem Inhalte nach, geschöpft sind"; Log, AA 09: 92.

**38** Log, AA 09: 94–95.

the operations that are actually responsible for this generation.[39] It seems, therefore, that once the content of an empirical concept is provided by intuition and perceptions, their universality can be explained in purely logical terms.

(ii) If, according to the definition of truth, empirical cognitions must agree with objects, they must have some form of objective validity (or reality) – in other words, they must be legitimately applied to objects. As we saw in § 2.2, this requirement is provided by the categories of the understanding that make empirical truth possible. As highlighted by Hanna (1993) and Watkins and Willaschek (2017),[40] however, this requirement is not a sufficient condition for a cognition's being true. Kant clearly distinguishes the objective validity of a cognition from its being true or false. For example:

> A cognition is false if it does not agree with the object to which it is related *even if it contains something that could well be valid of other objects.* (Emphasis added)[41]

An objectively valid cognition describes a possible object of experience, which, however, may not agree with the actual object of empirical intuition. If we want to distinguish between true and false empirical cognitions, we need a criterion that tells us that possible objects of experience and actual objects agree with each other. Now, appearances are not by themselves decisive criteria of truth, for the origin of such representations might be entirely subjective, as in dreams or hallucinations. For Kant, the relevant criterion seems instead to be the coherent "connection of representations" through the concepts of the understanding:

> If an appearance is given to us, we are still completely free as to how we want to judge things from it. The former, namely the appearance, was based on the senses, but the judgment on the understanding, and the only question is whether there is truth in the determination of the object or not. The difference between truth and dream, however, is not decided through the quality of the representations that are referred to objects, for they are the same in both, but through their connection according to the rules that determine the connection of representations in the concept of an object, and how far they can or cannot stand together in one experience.[42]

**39** Ibid., 9:95.

**40** Hanna, Robert: "The Trouble with Truth in Kant's Theory of Meaning". In: *History of Philosophy Quarterly* 10 (1), 1993, 1–20; Watkins, Eric, Willaschek, Marcus: "Kant's Account of Cognition". In: *Journal of the History of Philosophy* 55 (1), 2017, 83–112.

**41** "[…] denn eine Erkenntniß ist falsch, wenn sie mit dem Gegenstande, worauf sie bezogen wird, nicht übereinstimmt, ob sie gleich etwas enthält, was wohl von anderen Gegenständen gelten könnte"; KrV, A 58/B 83.

**42** "Wenn uns Erscheinung gegeben ist, so sind wir noch ganz frei, wie wir die Sache daraus beurteilen wollen. Jene, nämlich Erscheinung, beruhte auf den Sinnen, diese Beurtheilung aber

As Hanna puts it, the connection – or better, coherence (*Zusammenhang*) – of representations results from the "effective application" of the rules of the understanding to perceptions (see Hanna 1993, 12–13). The effective application of such rules allows us to distinguish merely subjective orderings of perceptions (such as those we have when dreaming) from necessary and rule-governed orderings. But for Kant, a necessary and rule-governed ordering of perceptions is precisely what constitutes an object of experience that exists independently of our perceptual access to it.[43] In short, the fact that appearances are coherently organized according to the conceptual rules of the understanding is a necessary criterion for distinguishing merely subjective from *true* empirical cognitions. It thus seems that reason is not required to ensure the possibility of the agreement of empirical cognitions with objects.

In my view, the above reconstruction of empirical truth, although faithful to several passages of Kant's corpus, is challenged by Kant himself in the Appendix. My interpretative strategy, however, does not consist in charging Kant with contradiction. Rather, I will argue that reason *completes* the conditions provided by the understanding and transcendentally *complements* the empiricist account of concept formation offered by Kant in the texts quoted above. This way of understanding reason's role has been unjustly neglected by those who advocate the methodological interpretation and not fully recognized by those who subscribe to the transcendental interpretation. Or at least this is what I shall argue in the remainder of this paper.

# 3 Methodological and transcendental interpretations of the systematicity of reason

## 3.1 Logical systematicity and methodological interpretations

Why do we need to complement Kant's account of empirical truth with reason's systematicity? In order to answer this question, we need to understand what our epistemic situation would be like without reason's systematicity and how, exactly,

auf dem Verstande, und es frägt sich nur, ob in der Bestimmung des Gegenstandes Wahrheit sei oder nicht. Der Unterschied aber zwischen Wahrheit und Traum wird nicht durch die Beschaffenheit der Vorstellungen, die auf Gegenstände bezogen werden, ausgemacht, denn die sind in beiden einerlei, sondern durch die Verknüpfung derselben nach den Regeln, welche den Zusammenhang der Vorstellungen in dem Begriffe eines Objects bestimmen, und wie fern sie in einer Erfahrung beisammen stehen können oder nicht"; Prol, AA 04: 290.

**43** See, e. g., KrV, A 191/B 236.

reason is supposed to contribute to it. These are not easy matters to settle. The Appendix to the Transcendental Dialectic is a convoluted text, and interpretations vary substantially. Although Kant's presentation of systematicity may seem to have little to do with truth, I will show that this is not the case and that Kant does present a compelling argument that explains why reason is a necessary condition of empirical truth.

Kant initially presents reason's systematic unity as a "logical principle" ["ein logisches Princip"],[44] that is, a principle that applies to concepts of the understanding. Since, as we have seen, reason has no direct relation to objects, it cannot create concepts of objects. Rather, it "unites the manifold of concepts through ideas by positing a certain collective unity as the goal of the understanding's actions".[45] Kant calls this process of logical unification the "hypothetical use of reason" ["der hypothetische Vernunftgebrauch"].[46] Reason is used hypothetically when the universality of a concept is not given but only assumed "problematically" ["problematisch"] – as a "mere idea" ["eine bloße Idee"].[47]

Kant uses clear examples to illustrate the hypothetical use of systematic unity: the ideas of pure elements from the chemistry of his time ["pure air", "pure water", "pure earth"][48] and, more extensively, the idea of a "fundamental power" ["Grundkraft", hereafter "FP"].[49] The latter, for instance, is an idea which is supposed to unify all particular cognitions (or representations) of powers (P). When applied to the human mind, this idea unifies "sensation, consciousness, imagination, memory, wit, the power to distinguish, pleasure, desire, etc." ($P_1$, $P_2$, $P_3$, etc.). We do not logically know "whether there is such a thing" ["ob es dergleichen gebe"] – and yet we introduce such an idea in order to "test" each particular case:

> Several particular cases, which are all certain, are *tested* by the rule, to see if they flow from it, and in the case in which it seems that all the particular cases cited follow from it, then *the universality of the rule is inferred*, including all subsequent cases, even those that are not given in themselves. (Emphasis added)[50]

**44** KrV, A 648/B 676.

**45** "[…] so vereinigt jene ihrerseits das Mannigfaltige der Begriffe durch Ideen, indem sie eine gewisse collective Einheit zum Ziele der Verstandeshandlungen setzt"; KrV, A 644/B 672.

**46** KrV, A 647/B 675.

**47** KrV, A 646/B 674.

**48** Ibid.

**49** KrV, A 649/B 677.

**50** "[…] so werden mehrere besondere Fälle, die insgesamt gewiß sind, an der Regel versucht, ob sie daraus fließen; und in diesem Falle, wenn es den Anschein hat, daß alle anzugebende besondere Fälle daraus abfolgen, wird auf die Allgemeinheit der Regel, aus dieser aber nachher auf alle Fälle, die auch an sich nicht gegeben sind, geschlossen"; KrV, A 646–647/B674–675.

To use Kant's example, in accordance with FP we try to see "if imagination combined with consciousness may not be memory, wit, the power to distinguish, or perhaps even understanding and reason".[51] If we manage to reduce several particular cases to common rules, we infer their universality: in this case, we infer the hypothetical concepts of "comparatively fundamental" powers ($FP_1$, $FP_2$, etc.; "die comparativen Grundkräfte").[52] We can then compare these concepts once again in order to approximate the unity and universality of an "absolutely fundamental" power (FP; "absolute Grundkraft") – the latter, however, remains an idea beyond our reach.[53]

Although Kant explicitly says that the systematic unity to which the hypothetical use of reason is directed is a "touchstone of truth" for the rules of the understanding, most interpreters have not been impressed by this and other similar claims. Methodological interpretations in particular maintain that systematic unity is a subjective method for extending our already obtained empirical cognitions rather than a necessary condition of empirical truth. In fact, they take the standard account of empirical truth presented in § 2.3 to mean that the act of comparison is sufficient to generate the basic level of empirical concepts (in the example, $P_1$, $P_2$, $P_3$, etc.). Reason is instead required to ground second-order concepts that have no direct evidence in support of them (e. g., fundamental powers, $FP_1$, $FP_2$). As such, it is at best a necessary condition for extending our empirical cognition, not making it possible.

I submit that, at this stage of Kant's formulation, one may be tempted to agree with the methodological reading, for logical systematicity is a principle that can only be valid as a *subjective* principle that applies to our cognitions. Indeed, Kant says that it is "subjectively and logically necessary as method" ["subjectiv- und logisch-, als Methode, […] nothwendig"].[54] But if systematicity is only a subjective method, it is unclear how it can contribute at all to empirical truth as the agreement of empirical cognition with *objects*.

This is not the end of the story, however. Kant explicitly writes that the employment of a logical principle of unification that allows us to postulate ideas in turn requires a corresponding principle that does not merely reflect a subjective "interest of reason" ["Interesse der Vernunft"] but somehow applies to the "constitution of objects" ["die Beschaffenheit der Gegenstände"].[55] Such a principle, Kant says:

**51** KrV, A 649/B 677.
**52** Ibid.
**53** Ibid.
**54** KrV, A 648/B 676.
**55** Ibid.

> would be a transcendental principle of reason, which would make systematic unity not merely something subjectively and logically necessary, as method, but objectively necessary.[56]

The transcendental principle of systematic unity, which Kant most often exemplifies with the principle of "genera" ["Gattungen"] or "sameness of kind" ["Gleichartigkeit"],[57] is presented as a precondition for the logical principle of unity:

> 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.[58]

Moreover, Kant expands his account to include other rational operations for the use of the understanding according to a triadic structure similar to that of the categories. To the transcendental principle of genera is opposed the "transcendental principle of species", which demands "manifoldness and variety in things despite their agreement under the same genus".[59] And finally, a third principle – as a combination of the first two – is included in order to complete the systematic unity of reason: the "transcendental principle of affinity", which presumes the continuity of natural forms, that is, the "continuous transition" among species.[60]

It is important to point out that the mere transition from logical to transcendental principles is insufficient to settle the disagreement between methodological and transcendental interpretations. Transcendental principles can still be interpreted in a way that does not make them necessary conditions of empirical cognition. Most interpreters who endorse the methodological reading have indeed tried to square their accounts with the transcendental principles of reason, interpreting them either in a deflationary way[61] or as mere presuppositions resulting from an

**56** "[…] das würde ein transscendentaler Grundsatz der Vernunft sein, welcher die systematische Einheit nicht bloß subjectiv und logisch, als Methode, sondern objectiv nothwendig machen würde"; KrV, A 658/B 676.

**57** KrV, A 654/B 682.

**58** "In der That ist auch nicht abzusehen, wie ein logisches Princip der Vernunfteinheit der Regeln stattfinden könne, wenn nicht ein transscendentales vorausgesetzt würde, durch welches eine solche systematische Einheit als den Objecten selbst anhängend *a priori* als nothwendig angenommen wird"; KrV, A 650/B 678.

**59** KrV, A 657/B 685.

**60** Ibid. In this paper, I particularly focus on the first, and probably most exemplary, application of systematic unity ('sameness of kind'). This is not to say, however, that the other two principles do not deserve a more detailed examination than the one presented here.

**61** That is, not as conditions of experience (as empirical cognition). On Guyer's account, the idea of systematic unity is only "transcendental in some sense" (Guyer 1990, 28). Similarly, Willaschek argues that "transcendental" here only means "concerning objects" (see Willaschek 2018, 117).

illusion.[62] Nor is the transition per se particularly telling regarding our specific question about empirical truth. I will argue, however, that Kant, in order to support the transition from logical to transcendental principles of reason, offers a specific argument – the Variety Argument – which is supposed to complement his doctrine of empirical truth. In the next subsection, I will introduce the argument and critically engage with previous interpretations of it.

## 3.2 Transcendental interpretations of reason's systematicity and objections

The Variety Argument takes the form of a *reductio ad absurdum* and is heavily relied upon by those who endorse the transcendental interpretation. In its most detailed formulation, the argument reads as follows:

If among the appearances offering themselves to us there were such a great variety – I will not say of form (for they might be similar to one another in that) but of content, i. e., regarding the manifoldness of existing essences[63] – that even the most acute human understanding, through comparison of one with another, could not detect the least similarity (a case which can at least be thought), then the logical law of genera would not obtain at all, no concept of a genus, nor any other universal concept, indeed no understanding at all would obtain, since it is the understanding that has to do with such concepts. The logical principle of genera therefore presupposes a transcendental one if it is to be applied to nature (by which I here understand only objects that are given to us). According to that principle, sameness of kind is necessarily presupposed in the manifold of a possible experience (even though we cannot determine its degree a priori), because without it no empirical concepts and hence no experience would be possible.[64]

**62** E.g., Grier (2001) and Pickering (2011).

**63** I have modified Guyer's translation, which reads "manifoldness of existing beings".

**64** "Wäre unter den Erscheinungen, die sich uns darbieten, eine so große Verschiedenheit, ich will nicht sagen der Form (denn darin mögen sie einander ähnlich sein), sondern dem Inhalte, d. i. der Mannigfaltigkeit existirender Wesen nach, daß auch der allerschärfste menschliche Verstand durch Vergleichung der einen mit der anderen nicht die mindeste Ähnlichkeit ausfindig machen könnte (ein Fall, der sich wohl denken läßt), so würde das logische Gesetz der Gattungen ganz und gar nicht stattfinden, und es würde selbst kein Begriff von Gattung, oder irgendein allgemeiner Begriff, ja sogar kein Verstand stattfinden, als der es lediglich mit solchen zu thun hat. Das logische Princip der Gattungen setzt also ein transscendentales voraus, wenn es auf Natur (darunter ich hier nur Gegenstände, die uns gegeben werden, verstehe,) angewandt werden soll. Nach demselben wird in dem Mannigfaltigen einer möglichen Erfahrung nothwendig Gleichartigkeit vorausgesetzt

Despite its apparent simplicity, the argument has proven particularly difficult to unravel. Geiger (2003) offers the most detailed reconstruction of reason's transcendental contribution to truth and finds in this passage textual support against the methodological reading, for here Kant clearly envisages a situation in which no empirical cognition would be possible without reason's transcendental principles. What is then the problem with the methodological reading?

Geiger argues that the methodological interpretation erroneously assumes that for basic concepts of experience the condition of applicability is given by intuition alone. The lowest level of experience, according to the methodological reading, seems not to require any additional transcendental assumption but is just, as it were, "read off intuition" (Geiger 2003, 288). Using the example of the concept 'gold' from § 2.3, the marks that allow us to apply this concept ('yellow', 'non-rusting', etc.) are simply given to us in intuition through comparing similarities.

For Geiger, this assumption fails to recognize an important implication of Kant's claim that intuitions without concepts are 'blind': as he puts it, "*intuitions without empirical concepts are still blind*" (Geiger 2003, 290). On this reading, the Variety Argument shows that even 'basic' relations of similarity must be conceived of as conceptual relations that hold between appearances. For instance, to say that two appearances are similar (say, yellow) is to say that they can be subsumed under a single concept (the concept 'yellow'). At the same time, this concept must be further specified according to its own marks (which are also empirical concepts). We therefore need ever more general and specific empirical concepts to determine the basic level (and any level) of experience. The transcendental assumption of an infinitely specified system of concepts is therefore, for Geiger, a necessary condition for the correspondence of concepts to objects (see ibid., 291). This reference is never immediately extracted from intuition but always made possible by a systematic relation of concepts.[65]

This reading, as I see it, has the merit of attempting to explain why systematicity should be thought of as a necessary condition of all empirical cognition. Its interpretative cost is high, however. Kant's corpus is notoriously ambiguous on whether empirical concepts are required in order for particular objects to be given to us.[66] Indeed, proponents of the methodological interpretation have rejected this reading by appealing to passages in which Kant seems to admit that particular objects can

(ob wir gleich ihren Grad *a priori* nicht bestimmen können), weil ohne dieselbe keine empirischen Begriffe, mithin keine Erfahrung möglich wäre"; KrV, A 653–654/B 681–682.

**65** See Geiger (2003, 290 f.): "The reference of a concept is given through its systematic, conceptual relations with other concepts. The world of objects is given to us through a system of concepts".

**66** Geiger therefore seems to be committed to a form of 'conceptualism' when he argues that the "empirical world" can be given to us only through empirical concepts (see Geiger 2003, 290 f.).

be given to us in intuition (see, e. g., Pickering 2011). Moreover, this interpretation does not seem to fully capture what Kant is after when introducing reason's transcendental principles and presenting the Variety Argument. Geiger suggests reading transcendental systematicity as the presupposition of an infinitely specified system of concepts. But as we saw, transcendental principles are not logical principles that apply to concepts. Rather, they presuppose systematic unity as "objectively necessary" ["objectiv nothwendig"], or as "pertaining to the object itself" ["den Objecten selbst anhängend"].[67] Indeed, in the Variety Argument Kant seems to be concerned with the problem of how logical principles (presupposing the systematic unity of concepts) can be "applied" to the objects of nature.[68]

Allison's account of the Appendix seems to better capture this aspect of the principles of reason. According to his reconstruction, the transcendental principles of reason amount to the presuppositions of an underlying order of nature (or of "natural kinds"; Allison 2004, 434) which acts as an "application condition" for the concepts of the understanding and ensures the rationality of our application of logical principles to nature (ibid., 435). In his words:

> Without unity, that is, without the possibility of grouping diverse phenomena into genera and these into higher genera, and so forth, the understanding could gain no foothold in the world. Similarly, without the capacity to draw distinctions within these genera, that is, to divide them into species, and these into subspecies, and so forth, the understanding would be unable to take a single further step.[69]

While Allison's proposal seems to get closer to the gist of the Variety Argument, the reason why the understanding "could gain no foothold in the world" without reason is far from clear. Why would the understanding be insufficient to group different phenomena? What is missing in our epistemic situation without reason? And what does reason do, precisely, to enable empirical cognition? These questions remain largely unanswered on Allison's reading, thus leaving the view that systematicity is a necessary condition of empirical cognition open to objections.

One prominent challenge has recently been made by Pickering. Kant, as we have seen, seems to hold an empiricist account of empirical concepts. Since we actually discover regularities in our experience of nature, why do we have to transcendentally assume something that experience can teach? From a methodological perspective, Pickering argues that the fact of experience absolves us of the need to make such an assumption. Systematicity cannot be a transcendental principle, for the simple reason that empirical cognition and experience are possible without it:

**67** KrV, A 648/B 676; A 650/B 678; see also A 668/B 696.
**68** KrV, A 653/B 681.
**69** Allison (2004, 434).

> The passage [the one presenting the Variety Argument; A653/B681] concerns the possibility that the manifold of possible experience is completely heterogeneous. Of course, if this were true, then neither empirical concepts nor experience would be possible. But all Kant has supposed in this counterfactual statement is there being no similarity at all among appearances.[70]

Pickering notices that the argument only holds in the scenario postulated at the beginning of the passage: a world populated by irreducible differences. This is not our case, however – we normally cluster properties and things, at least minimally, without the aid of reason because our world is indeed full of amenable similarities. Reason is instead only responsible for systematizing such an ordering: in the methodological terminology, systematicity gives us a "maximum" of order, not the "minimum" we need for basic experience.[71]

This objection may indeed deal a mortal blow to any transcendental interpretation. I think, however, that a convincing answer to this challenge can be given by revising the interpretation of Kant's argument.

# 4 Reason's contribution to truth

## 4.1 The Variety Argument revisited

One may assume that the scenario Kant introduces with the Variety Argument applies only to a world with no similarities. Pickering convincingly argues that the fact of experience already does away with the need for any proper transcendental assumption.[72] But if this is correct, what would be the use of postulating a counterfactual world populated by irreducible differences? I contend that the function of the Variety Argument is not simply that of postulating an extreme scenario that happens not to be our own. Rather, it describes a 'genuine' possibility, namely a possibility that applies to our world and that would undermine our epistemic situation if we were not equipped with reason's principles of systematicity. In other words, it tells us what is missing without reason's contribution and what reason is required to do to correct that initial state.

In order to understand what jeopardizes our epistemic situation in the absence of reason, we first need to clarify what, exactly, is postulated in this scenario. Kant

**70** Pickering (2011, 439).
**71** Ibid.
**72** Pickering maintains that reason's principles are illusory principles that are "only assumed to be or presupposed as transcendental" (Pickering 2011, 446).

specifies that the "great variety" of appearances does not concern the forms we encounter in experience – in fact, appearances "might be similar to one another in that" – but the very "content" ["Inhalt"] of appearances – the "manifoldness of existing essences" ["die Mannigfaltigkeit existirender Wesen"]. In this scenario, Kant continues, even "the most acute human understanding" could not detect "the least similarity". Accordingly, the similarities that any understanding could not identify among appearances are similarities in terms of "content" or "essence". Kant also calls the essence of something that exists its "nature"[73] and defines it as the "first basic concept of everything that really and in fact belongs to the thing".[74]

But what does it mean for appearances to be formally similar yet various in terms of 'essential' content? To answer this question, we need to return to our discussion of empirical truth and take a closer look at the example Kant most extensively discusses in the first part of the Appendix: the idea of a fundamental power (FP). In our previous discussion, we saw that the understanding contributes to the *formal* aspect of empirical truth. It does so by allowing objects to be represented through its concepts – for instance, through the pure concept of substance. These concepts, however, do not determine the particular content of the given object – the content of appearances is given to us in experience only. This means that two appearances may be formally similar as 'substances' and yet differ radically with respect to their content.

This distinction finds textual confirmation in the way Kant describes the particular concepts of powers that the idea of a fundamental power (FP) is supposed to unify. These powers ($P_1$, $P_2$, $P_3$, etc.) issue from the application of the concept of the "causality of a substance" or "power" (*Kraft*) to the manifold of appearances. Note that 'power' (P) is a concept of the understanding and results from the combination of two categories: substance and causality. $P_1$, $P_2$, $P_3$, etc., are therefore all 'powers' in the formal sense, and yet we still do not know whether they are "various expressions of one and the same power".[75] This is a separate, *empirical* question that requires a different kind of unity: the idea of a 'fundamental power' (FP).[76]

**73** E.g., V-Lo/Wiener, AA 24: 840.

**74** V-Lo/Blomberg, AA 24: 116; see also Log, AA 09: 144. It is plausible to assume that Kant is here referring to what he otherwise calls a "real essence" ("Real-Wesen"). See, for example, Log, AA 09: 61: "For the real essence of the thing (*esse rei*) we require cognition of those predicates on which, as grounds of cognition, everything that belongs to the *existence of the thing* depends". Kant explicitly states that the presupposition of systematicity concerns the "Wesen der Dinge" in KrV, A 693/B 721.

**75** KrV, A 649/B 677.

**76** On my reading, empirical concepts are therefore necessary for acquiring *empirical cognition* of particular objects. Contra conceptualist readings, however, I maintain that particular objects can be given to us in intuition *without* empirical concepts.

If this is correct, we have gained an important insight. While the logical dimension may lead us to think that systematicity only applies to already given empirical concepts, this is not the case at the 'basic' level of experience. $P_1$, $P_2$, $P_3$, etc., are direct applications of pure concepts of the understanding to appearances, but they are still *not* empirical concepts. Systematicity is required in order to form concepts of their unity (in this case, empirical concepts of "comparatively fundamental" powers that we progressively compare and unify; $FP_1$, $FP_2$, etc.). In fact, Kant says that when the logical law of genera does not obtain, "*no concept of a genus, nor any other universal concept, indeed no understanding at all would obtain*" either.[77]

Now, the Variety argument postulates that formally similar appearances indeed differ from each other. Is this a mere counterfactual statement disconfirmed by experience? Or rather a genuine possibility that jeopardizes our epistemic situation in the absence of reason? I contend that Kant argues for the latter option, for (1) as we just saw, pure understanding cannot determine *how various* appearances are. As far as the categories are concerned, it is entirely possible that nature presents us with a variety of appearances that defies our intellectual grasp. As a result, we would be given a manifold of irreducible particular representations, and it would not make sense for us to attempt to unify them. If this cannot be done by the understanding a priori, it may be done empirically – the fact that the understanding finds similarities should suffice to eliminate the possibility of this scenario. But this cannot be right either, for (2) the similarities that the understanding may detect through comparison are merely *contingent* and cannot tell us whether various appearances are "really and in fact" similar, or similar "with respect to the manifold of existing essences".[78] As Kant repeatedly asserts, we cannot derive systematic unities by simply looking at the "contingent constitution of nature".[79]

A priori and empirical considerations seem insufficient to rule out the possibility that appearances are really different from each other. This, however, would jeopardize the possibility of any cognizing subject's acquiring empirical cognition. In the case of a fundamental power, reason would be "free to admit that it is just as possible that all powers are different in kind", and we would have no "warrant" to "treat the manifoldness of the powers which nature gives to our cognition as merely

**77** This is not to deny that systematicity can also be applied to concepts we have already formed. Its function would then be that of forming *new* empirical concepts.

**78** In his lectures on logic, Kant explains that we cannot know the essences of things because we cannot have complete experience of them: "To have insight into the real essence exceeds human understanding. We cannot provide a complete ground for a single thing. This requires a universal, complete experience, and to obtain all possible experience concerning an object is impossible" (V-Lo/Wiener, AA 24: 839–840).

**79** See, e. g., KrV, A 651/B 679; A 645/B 673.

a concealed unity".[80] In other words, we could not investigate nature according to principles of unity, and we would be left with a manifold of irreducible particular cognitions.[81]

If our epistemic situation would be defective in the absence of reason, what does reason do in order to correct this state? In a nutshell, Kant's solution is the following. Reason is invoked in order to "presuppose" (*voraussetzen*) systematic unity among appearances, or "in the manifold of possible experience". This is the transcendental step that gives any cognizing subject "warrant" to postulate logical unities and systematize appearances. For instance, reason can start unifying the manifold of powers according to a logical principle of unity only by presupposing that *various* appearances belong to the *same* fundamental power – to use Kant's term, we can investigate nature only by presupposing "sameness of kind" in nature. Importantly, both sameness of kind and the other principles of systematicity must be presupposed *necessarily*. Recall that the presupposition of this unity cannot be derived from the contingent similarities we encounter in experience. The presupposition of unity is instead a transcendental and necessary "law of reason" ["Gesetz der Vernunft"][82] without which "no empirical concepts and hence no experience would be possible".

Before spelling out the details of reason's contribution to empirical concept formation and truth, let me clarify one important point. The necessary presupposition of systematic unity may seem to lead Kant into metaphysical territory. Upon closer inspection, however, this is not the case. For one thing, the presupposition of systematic unity concerns not things in themselves but appearances – as Kant says, by nature he means "only objects that are given to us".[83] And second, systematic unity is only presupposed in order to ground the rationality of our logical classifications. As we saw, the understanding cannot determine the content of appearances or rule out the possibility of the Variety Argument. Even less can reason do such things since it is only indirectly related to objects. In fact, Kant says that reason only

**80** "Denn mit welcher Befugniß kann die Vernunft im logischen Gebrauche verlangen, die Mannigfaltigkeit der Kräfte, welche uns die Natur zu erkennen gibt, als eine bloß versteckte Einheit zu behandeln, und sie aus irgendeiner Grundkraft, soviel an ihr ist, abzuleiten, wenn es ihr freistände zuzugeben, daß es ebensowohl möglich sei, alle Kräfte wären ungleichartig, und die systematische Einheit ihrer Ableitung der Natur nicht gemäß?"; KrV, A 651/B 679.

**81** If this reconstruction is correct, I submit that Kant's view in the first *Critique* has several similarities with the transcendental deduction of the principle of purposiveness in the *Critique of the Power of Judgment* (see KU, AA 05: 181–186). Comparing the two texts goes well beyond the remit of this paper, however.

**82** KrV, A 654/B 679.

**83** Ibid.

presupposes systematic unity "indeterminately" ["unbestimmt"].[84] This means that the presupposition of systematic unity neither determines nature *as* systematic nor preestablishes *what* we are going to find in it (for instance, a fundamental power). It is, instead, a necessary law that regulates our empirical investigation of nature and without which the latter could not get off the ground.

## 4.2 Completing the conditions of truth

That reason is a "touchstone of truth" was a rather puzzling claim after the introduction of logical systematicity. Indeed, its being a subjective principle which applies to concepts may incline us to think that systematic unity is only a methodological principle for extending our knowledge. The above reading of the Variety Argument, however, leads to a very different picture. First, the particular cognitions that reason unifies are not (necessarily) already acquired empirical concepts. Rather, where categories are applied to appearances, reason's systematicity is required in order to generate empirical concepts. Second, we saw that the logical dimension of systematicity is only possible on the basis of an objective, transcendental presupposition of systematicity. Indeed, logical systematicity alone is insufficient to explain why reason is a condition of truth as the agreement of cognitions with objects. After considering systematicity as both a logical and a transcendental principle, I should be able to finally explain how reason contributes to empirical truth.

As we saw, reason cannot determine the objects of experience. It can, however, legitimately apply to the understanding and *indirectly* contribute to truth. Reason can therefore be a "touchstone of truth" for the understanding and ensures its "coherent use" and "correctness" only by regulating how the understanding relates to empirical objects (that is, the agreement of cognitions with objects that represents the relation of truth; see § 2.1). But how exactly does reason indirectly complete the conditions of empirical truth provided by the understanding? To answer this question more precisely, we need to return to Kant's account of empirical concept formation (i) and of the agreement of empirical cognitions with objects (ii).

(i) It is indeed remarkable how well several passages of the Appendix transcendentally dovetail with the empiricism of the *Jäsche Logic*. As we saw, "comparison" ["Vergleichung"] is the general term Kant uses to indicate the operation through which empirical concepts arise and, specifically, the first of the three "logical *actus*" of concept formation. Now, the Variety Argument postulates a scenario in which the

**84** KrV, A 693/B 721.

very *comparison* [“Vergleichung”] of appearances cannot lead to any recognized similarity. If this scenario, as argued, genuinely applies to our epistemic situation in the absence of reason, the possibility of comparing objects of experience would be undermined not only in the extreme case of an absolute absence of similarities but also, and more fundamentally, in the basic experience of our world. In other words, this means that the empiricist account Kant offers in the *Jäsche Logic* is now deemed incomplete.

I argue that, in the Appendix, Kant technically complements his empiricist account of concept formation. No matter how many various appearances we compare, without the transcendental presuppositions of reason we would have no “universal concept” and “no understanding at all would obtain, since it is the understanding that has to do with such concepts”.[85] By presupposing systematicity among appearances, reason ensures that the understanding is used coherently with respect to empirical objects. More specifically, reason postulates ideal unities *according to which*, as we saw in our discussion of the hypothetical use of reason, the understanding *can* compare various appearances and generate empirical hypotheses at any level of experience. If indeed the understanding manages to find contingent similarities through the comparison of appearances (for instance, different powers of our mind are compared and found to be identical), we can provisionally infer the “universality of the rule” or the relevant empirical concept (in the case discussed, the empirical concepts of “comparatively fundamental” powers; $FP_1$, $FP_2$, etc.). The systematic unity of reason is therefore a necessary condition for the formation of empirical concepts.

(ii) Empirical truth also requires that empirical cognitions (what I take to be cognitions containing empirical concepts) agree with objects. As we saw, such agreement requires not only that an empirical cognition be objectively valid, but also that it be coherently connected according to the categories of the understanding – in other words, that we have effectively applied the categories of the understanding to the order of perceptions. But this criterion is more problematic than it seems. As noted by Hanna, it is not clear how the coherent connection of perceptions can sufficiently distinguish false from true cognitions. Although merely subjective representations such as dreams and hallucinations do not generally follow the rules of the understanding, there is no logical inconsistency in thinking of the possibility of a well-ordered yet purely subjective order of perceptions (Hanna 1993, 15). As a result, for Hanna, coherence is an ultimately insufficient criterion of truth, and such insufficiency has dire consequences for Kant’s theory of truth as a whole

**85** KrV, A 653/B 681.

(ibid., 15 f.).[86] I argue, however, that Kant does have internal resources to address this problem.

As we saw, the Variety Argument postulates precisely a scenario in which the rule-governedness of appearances (according to the pure concepts of the understanding) is insufficient to ground empirical truths. The effective application of the rules of the understanding to perceptions of powers, for example, does not ensure that such powers are not entirely different from each other and that empirical cognition of them is possible. In other words, the Variety Argument describes a situation in which empirical cognitions, *even if coherently connected according to the rules of the understanding*, still do not necessarily correspond to the objects of nature.[87] We simply do not know whether the conceptual relations we establish among appearances really map onto relations between existing essences. As a result, the Variety Argument shows that there is a further gap between the intellectual coherence of empirical cognitions and their truth.[88]

I contend that the solution to the Variety Argument – that we must presuppose systematicity in possible experience, or that systematicity itself is objectively valid. – is meant to progressively bridge this gap. Kant is not leaning towards a 'coherentist' interpretation of truth or towards a metaphysical reading of the principles of reason. Rather, he is arguing that reason, by presupposing systematicity in nature, sets an indispensable *standard* for the use of the understanding in relation to empirical objects. The understanding ought not to be satisfied with well-ordered particular cognitions based on contingent similarities but should aim to progressively unify them, refine them, and test them against experience – in a word, *approximate* them to true cognitions, or cognitions that agree with objects. This is why Kant says that without reason we would have "no sufficient mark of empirical truth" – as he specifies, "in regard to the latter [empirical truth] we simply have to presuppose the systematic unity of nature as objectively valid and necessary".[89]

**86** See Hanna (1993, 15 f.).

**87** Despite contingent similarities in experience, we could "admit that it is just as possible that all powers are different in kind" (KrV, A 651/B 679); see § 4.1. I take the coherence of intellectual rules to result from the spontaneous application of the understanding. As such, it must be distinguished by the coherent *use* of the understanding, which results from the application of reason to the understanding.

**88** Kant generally takes objective validity as a necessary yet insufficient condition of truth (see, e. g., KrV, A 760/B 788). A concept is objectively valid when it can be legitimately applied to an object; it is true when it also agrees with that object. For an excellent discussion, see Willaschek (2017, e. g., 106 f.).

**89** "Wir also in Ansehung des letzteren die systematische Einheit der Natur durchaus als objectiv gültig und nothwendig voraussetzen müssen"; KrV, A 651/B 679.

But what does it mean to say that systematicity is presupposed as objectively valid in regard to empirical truth? Kant fully explains this peculiar notion of objective validity at the end of the first part of the Appendix. That systematic unity is objectively valid means that it can be applied to objects of nature *indirectly* and *through* the use of the understanding:

> Since every principle that establishes for the understanding a thoroughgoing unity of its use a priori is also valid, albeit only indirectly, for the object of experience, the principles of pure reason will also have objective reality in regard to this object, yet not so as to *determine* something in it, but only to indicate the procedure in accordance with which the empirical and determinate use of the understanding in experience can be brought into thoroughgoing agreement with itself, by bringing it *as far as possible* into connection with the principle of thoroughgoing unity.[90]

Principles of reason, by applying to the understanding a priori, are also valid for the objects of experience to which the understanding directly relates – not as determinations of those objects, but as principles that necessarily regulate the understanding in its investigation of nature. In other words, reason does not preestablish the truth of cognitions but sets up the "procedure" according to which we progressively systematize particular cognitions and approximate them to empirical truth. This procedure is, of course, fallible and never fully completable, but it is necessary for determining whether our cognitions agree with objects. Presupposing sameness of kind, for instance, does not tell us whether there is such a thing as a fundamental power, but it legitimately prescribes to the understanding the task of progressively unifying various cognitions of powers, refining them, and testing them against experience. As Kant says, principles of systematicity ultimately originate from "the interest of reason in regard to a certain possible perfection of the *cognition of the object*" (emphasis added).[91] On my reconstruction, the "perfection of the cognition of the object" is nothing but the empirical truth that reason allows the understanding to approximate.

**90** "Da nun jeder Grundsatz, der dem Verstande durchgängige Einheit seines Gebrauchs *a priori* festsetzt, auch, obzwar nur indirect, von dem Gegenstande der Erfahrung gilt: so werden die Grundsätze der reinen Vernunft auch in Ansehung dieses letzteren objective Realität haben; allein nicht um etwas an ihnen zu bestimmen, sondern nur um das Verfahren anzuzeigen, nach welchem der empirische und bestimmte Erfahrungsgebrauch des Verstandes mit sich selbst durchgängig zusammenstimmend werden kann dadurch, daß er mit dem Princip der durchgängigen Einheit so viel als möglich in Zusammenhang gebracht und davon abgeleitet wird"; KrV, A 665–666/B 693–694.
**91** "[…] dem Interesse der Vernunft, in Ansehung einer gewissen möglichen Vollkommenheit der Erkenntniß dieses Objects"; KrV, A 666/B 694.

# 5 Final remarks

If the above reconstruction has successfully shown that reason's systematicity is compatible with Kant's notion of truth and indeed completes it, then we have no reason to dismiss Kant's explicit claims in the Appendix regarding reason as a necessary condition of empirical truth and, *a fortiori*, of empirical cognition, as suggested by proponents of the methodological interpretation. Such a dismissal would not only be unfaithful to Kant's text but would also leave us with an incomplete reconstruction of Kant's notion of empirical truth.

To sum up, I have suggested the following points regarding the relation between systematic unity and empirical truth. Reason's systematicity is a condition of empirical truth because it guarantees the coherent use of the understanding with respect to empirical objects. It does so by complementing the understanding with respect to two crucial aspects: (i) it postulates ideas according to which the understanding can compare appearances and infer empirical concepts; and (ii) it regulates the understanding in its investigation of nature so that we can approximate empirical cognitions to truth.

The claim that the objectivity of our empirical investigation of nature is grounded upon a rational presupposition may draw criticism from many quarters. If objectivity is, as it were, commanded by reason (as Kant says, "here reason does not beg but commands"; "hier nicht bettle, sondern gebiete"),[92] the foundations of empirical knowledge may seem particularly shaky. Indeed, one might argue that this interpretation can re-open the door to skepticism. I argue, instead, that this implication represents a virtue of the proposed reading, for it opens up the possibility of the ongoing revisability of universal concepts: a thesis that should be welcomed from the point of view of empirical realism. Fundamental powers are possible as concepts only on the presupposition that sameness of kind is objectively valid. Importantly, however, this presupposition does not determine nature, and further empirical research might subsequently lead us to dismiss the inferred concepts. For, as often occurs in science, what we have unified under a concept may turn out to be an actual variety of objects (in this case, 'powers') that does not conceal any hidden identity of kind. We would then try to conceptualize the same manifold (or part of it) under different concepts, but still in accordance with reason's principles.

One might further object that if empirical cognitions have no definite truth value, then reason's contribution to truth is ultimately futile. In order to answer this objection, it is important to highlight the fact that systematicity is not only a

**92** KrV, A 653/B 6891.

presupposition but a transcendental one. It is true that by transcendentally presupposing the principles of reason we are not assigning any definitive truth value to determinate hypotheses. Reason's principles, however, by presupposing systematic unity in nature, ground the very possibility of our approximating hypotheses to empirical truths – even truths that will turn out to be inappropriate or false according to further empirical research. Recall that the degree of systematic unity is left completely undetermined at the transcendental level of reason. Empirical research progressively determines the undetermined objectivity presupposed by reason without, however, ever replacing it. Indeed, it is the non-empirical character of such principles that explains their role in fostering empirical research, by never predetermining its results and always demanding systematic unity in our cognition of appearances.

With this reconstruction, I hope to have clarified an aspect of reason that remains obscure even in transcendental interpretations of theoretical reason – an obscurity that actually supports the currently predominant methodological interpretations. I have tried to show that reason's characterization as a "touchstone of truth" can be squared with the theory of truth that Kant grants and presupposes in his *Critique*. Reason provides us with two essential preconditions for the tenability of this theory at the empirical level (the possibility of formulating empirical concepts and approximating empirical cognitions to truth) and remarkably dovetails with the other criteria of truth and the empiricist account of concept formation that can be found in Kant's corpus. Although barely acknowledged, reason's contribution must therefore be included in any complete reconstruction of Kant's theory of truth.

**Acknowledgments:** This paper has greatly benefited from discussion with and comments from Alix Cohen and Michela Massimi. Special thanks to Ido Geiger for reading an earlier version of this paper and giving me insightful feedback. Earlier versions of this paper were presented in Cardiff, Edinburgh, Leuven, and Trier – many thanks to the audiences for their stimulating questions. Andrew Cooper, Karin de Boer, Kristina Engelhard, Gabriele Gava, Jennifer Marušić, Timothy Rosenkoetter, Marcus Willaschek, and Rachel Zuckert provided helpful feedback on various points. Thanks to an anonymous referee for the encouraging and constructive remarks. All errors remain my own. Finally, I gratefully acknowledge the support of the DFG (Deutsche Forschungsgemeinschaft), research unit FOR 2495 (previous stages of this work were funded by the European Research Council and the Royal Institute of Philosophy).