

*Why Should Metaphysics be Systematic?
Contemporary Answers and Kant's*

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Introduction

The other chapters in this volume discuss the important, but neglected, topic of systematicity in metaphysics. In this chapter I begin by taking a step back and asking: why is systematicity important in metaphysics? Assuming that metaphysics should be systematic, why is this the case? I canvas some answers that emerge naturally within contemporary philosophy and argue that none of them adequately explains why metaphysics should be systematic. I then turn to Kant's account of systematicity for his explanation. I argue that, while Kant's explanation of the systematicity of metaphysics rests on a host of additional weighty philosophical commitments that many philosophers would rather do without (e.g., transcendental idealism), he is not alone in this. The contemporary answers I earlier found wanting can be transformed into satisfying explanations, I argue, but only at the cost of philosophical commitments at least as weighty as Kant's. I conclude on a note of agnosticism: it is far from clear whether contemporary philosophy has done, or can do, better than Kant at explaining the role of systematicity in metaphysics.

1. Senses of Systematicity

In this section I will pursue two inter-related questions: what does the systematicity of metaphysics consist in? and why should metaphysics be systematic, so understood? I will take it for granted that, in some sense of 'systematic,' metaphysics should *ceteris paribus* be systematic, though I will not assume that it should be systematic *come what may*.¹

A first pass answer would be that a theory is systematic just in case all its claims, principles, etc. cohere with one another.² Since it is uncontroversial that metaphysics should be coherent, it is equally

¹ Segal (this volume) also considers different senses in which metaphysics might be said to be 'systematic.'

² I am taking for granted that 'coherence' is a tolerably clear notion; I don't have much to say about what, precisely, it is. For starters, logical consistency is a necessary, but not sufficient, condition on coherence (i.e. it must be logically possible for all the claims in a coherent theory to be true). Similarly, modal compatibility is a sufficient condition on coherence (i.e., it must be metaphysically possible for all of the

uncontroversial that metaphysics should be systematic in at least this very weak sense. But it is not plausible that coherence is all there is to systematicity. The conjunction of two internally and mutually coherent theories is ‘systematic’ in this sense but does not constitute a system. A system is more than a mere aggregate of mutually coherent theories.

As a second pass we might supplement the first with the requirement that a systematic theory be not only coherent, but comprehensive. On this conception, a coherent theory is more systematic the wider range of phenomena it describes. The idea is that metaphysics should be systematic because it should aim at being maximally comprehensive (it should be a theory of everything) and coherent. For instance, we should aim to make our theory of time cohere with our theory of persistence, our theory of material constitution, our theory of causation, our theory of modality, and so on for every topic in metaphysics. While I agree that metaphysics should aim to be coherent and maximally comprehensive (coherent across a maximally comprehensive range of topics), this is not enough for systematicity. A mere coherent aggregate of theories is not a system, and that defect is not made up by simply aggregating more theories. The conjunction of the correct answers to every 1st-order metaphysical question is, trivially, coherent and maximally comprehensive, but need not be systematic.³ Coherence and comprehensiveness alone are not sufficient for systematicity.

Sometimes metaphysical theories are described as being systematic because they are both comprehensive and *inter-connected*. The difficulty arises, however, in saying what exactly inter-connectedness means, and why an inter-connected set of claims constitutes a system. It might mean they logically entail one another, but this an implausibly strong criterion on a system. What is more, there are sets of mutually entailing sentences that are clearly not systems. For any sentence p consider the set that contains p and, for every logical tautology, the conjunction of that tautology and p ; every sentence in this set is logically equivalent to every other, but it

claims in a coherent theory to be true); it is less clear whether it is a sufficient condition. See Segal (this volume) for discussion of other relations by which philosophical questions might be ‘connected.’

³ It might be objected that the conjunction of all metaphysical truths will contain truths about explanatory relations among these truths, and thus solves the problem I pose for the mere comprehensiveness conception of systematicity. This is the point of the qualification ‘1st-order’: the conjunction is limited to answers, e.g., to questions about whether Humeanism is true about causation, not about explanatory relations between, e.g., the true theory of causation and the true theory of modality.

clearly does not constitute a system. So inter-connectedness, understood as mutual logical entailment, appears to be orthogonal to systematicity.⁴

Intuitively, what is missing from these accounts is the idea that a systematic theory should be *explanatory*. The reason a mere conjunction of mutually coherent theories (even a maximally comprehensive such conjunction) is not systematic is that such a conjunction might draw no explanatory connections among its component theories. For instance, we do not want our theory of time to merely cohere with our theory of persistence and our theory of material constitution; we want our theory of time to explain our theory of persistence, etc.

This fourth pass is getting closer to a plausible conception of systematicity, but it needs to be refined. The systematicity of a theory depends not only the comprehensiveness of its ‘explanatory domain’ (the range of phenomena it explains) but also on the parsimony of its explanatory primitives. Of two equally comprehensive theories, the one with fewer explanatory primitives is *ceterus paribus* more systematic. By ‘explanatory primitives’ I mean the parts of the theory that explain other parts of the theory but are not themselves explained by anything in the theory. The systematicity of a theory, on this conception, depends on two axes that can vary independently of one another: the comprehensiveness of its explanatory domain and the parsimony of its explanatory primitives. I am going to be purposely loose about what an ‘explanatory’ primitive is; it will include unanalyzed notions, un-explained metaphysical first principles, fundamental ontology (i.e., entities not reducible to other entities in one’s ontology), etc. *Ceterus paribus* a theory with a more comprehensive domain is more systematic; likewise, *ceterus paribus* a theory with a more parsimonious set of explanatory primitives is more systematic.⁵ This delivers the right intuitive verdicts. The reason Spinoza

⁴ I think a similar worry arises for Aaron Segal’s work on systematicity (Segal 2015 & this volume.) What Segal calls a *general metaphysical thesis* (GMT), roughly, an answer to every metaphysical question, while comprehensive, need not be systematic. This is evident from the fact that the complete and true metaphysical theory is, trivially, a GMT, but it is far from trivial that the complete metaphysical truth is systematic (reality may be highly non-systematic); consequently, merely being a GMT is not sufficient to be systematic. Consequently, Segal’s argument that the ‘metaphysical ocean’ is composed of GMTS that ‘span’ that ocean (see Segal’s paper for definitions of these technical terms) is an argument that philosophical questions must be answered within GMT, not an argument that they must be pursued with a system.

⁵ The difficult case arises when one theory is more parsimonious, but less comprehensive, than another; I will not attempt to adjudicate in general which of two such theories is more systematic.

is widely considered the most systematic of early modern philosophers is that he tries to derive all of his metaphysics, philosophy of mind, epistemology *and ethics* from a relatively compact set of explicitly stated definitions and axioms. The reason David Lewis is considered a paradigm of systematic metaphysics in the analytic tradition is that he is able, using only the ontology of possibilia, mereology, the relation of an object to its singleton set, and the notion of perfect natural resemblance, to explain so much: *de re* and *de dicto* modality, causation, counterfactuals, laws, and much else.⁶

This is a plausible conception of systematicity, one that is operative, both implicitly and explicitly, in much of contemporary metaphysics.⁷ I will assume that it constitutes a ‘regulative ideal’ for metaphysics: *ceteris paribus* metaphysics should be systematic in this sense. But why?

Before I address that question directly, I want to clarify the other term in my theme, metaphysics. There are many different conceptions of metaphysics in contemporary philosophy, which can be grouped into two broad camps: deflationary (e.g., Carnap, Hirsch, Thomasson) and inflationary (e.g., Sider, Schaffer, Williamson). This chapter is only concerned with inflationary metaphysics,⁸ which I will characterize, following Peter Van Inwagen, as ‘the study of ultimate reality.’⁹ Metaphysics is not about how we know reality, or how reality ‘appears’ to us, or how reality is represented in our conceptual and linguistic schemes. It is about what, ultimately, is real. I want to make a small modification to Van Inwagen’s definition, as follows:

⁶ For discussions of Lewis’s systematicity see Nolan 2015 and Segal 2020 & this volume.

⁷ I take it to be implicitly operative in David Lewis’s rejection of candidate explanatory primitives (e.g. an unanalyzed necessitation relation between universals; Lewis 1983, p. 366) unless they bring with them substantial explanatory pay-offs (e.g. mere possibilia; Lewis 1984b, p. 4), and the attempt to reduce, as far as possible, other notions to explanatory primitives (e.g. the project of reducing set-theory to a single primitive notion, that of singletons, and mereology, because mereological fusions are ‘ontologically innocent’; Lewis 1991, p. 81–7). It is also operative in Sider’s argument that a primitive notion of structure should be accepted because of the explanatory work that it does (Sider 2011, p. 10–18), as well as in Schaffer’s argument that we should not multiply fundamental entities without a gain in explanatory fecundity (Schaffer 2015).

⁸ Consequently, I will not try to clarify what exactly deflationary metaphysics is, or how it differs from inflationary metaphysics, except to say that deflationary metaphysics holds (and inflationary metaphysics denies) that answers to metaphysical questions are either easily answered by reflection on semantic and conceptual rules (Thomasson, Hirsch), or are semantically defective (Carnap).

⁹ Van Inwagen 2008, p.1. It is difficult to distinguish inflationary from deflationary metaphysics because many of the things the inflationary metaphysician wants to say (e.g. that metaphysics is the study of ultimate reality), the deflationist can say as well (because they have a deflationary conception of what ‘ultimate’ and ‘reality’). The situation parallels, in some ways, the situation of quasi-realism vs. realism in meta-ethics. See Dreier 2018.

metaphysics is the study of the ultimate *structure* of reality. Metaphysics aims not only to state truths about ultimate reality, but to state truths that get its structure right. While Van Inwagen does not state this directly, I think it is very much in the spirit of his definition (and in the spirit of much of contemporary inflationary metaphysics.)¹⁰ In terms of Strawson's famous distinction between descriptive and revisionary metaphysics, inflationary metaphysics is revisionary metaphysics that aims to revise our conceptual scheme to bring it into alignment with the structure of ultimate reality.¹¹ In the rest of this section, unless otherwise noted, 'metaphysics' refers to the study of the ultimate structure of reality in this inflationary sense.

To return to our main question, why should the study of the structure of ultimate reality, metaphysics, be systematic?

One potential answer emerges from reflecting on the methodology of metaphysics. It is widely accepted in contemporary philosophy that metaphysics rests on inference to the best explanation (IBE), sometimes called 'abduction.'¹² It might then be argued that, because we should believe the metaphysical theory that is the best explanation, and systematic explanations are *ceteris paribus* better explanations, we should *ceteris paribus* believe systematic metaphysical theories. This appears to provide a compelling account of why metaphysics should *ceteris paribus* be systematic.

While I do not dispute that there is a sense of 'better' in which systematic theories are *ceteris paribus* better explanations than non-systematic ones, this short argument to systematicity is not sufficient. A metaphysical theory, I have stipulated, aims to be both true and joint carving (i.e., accurate to the structure of ultimate reality). But if ultimate reality is non-systematic in its structure (i.e., the complete true theory stated in absolutely structural terms is highly unsystematic) then the desiderata of systematicity and of structuralness will pull in different directions: a true systematic theory will be non-structural and a structural theory will be non-systematic. To illustrate this point, consider Lewis's amended version of the best-systems theory of laws:

¹⁰ Most notably Sider 2011.

¹¹ Strawson 1959. More precisely, inflationary metaphysics aims *potentially* to revise our conceptual scheme in this way; it is, technically, consistent for inflationary metaphysics to hold that our conceptual scheme is fine just the way it is because it aligns perfectly with the structure of ultimate reality.

¹² Biggs 2011; Hawley 2006; Paul 2012; Sider 2009, p. 385, 2011, p. 12–15; Williamson 2016; and Biggs & Wilson 2017.

the set of laws is the system of true generalizations cast in absolutely natural terms that maximizes (i) simplicity and (ii) fruitfulness (it entails more truths than other candidate systems of laws).¹³ However, if no perfectly natural property is instantiated by more than one spacetime point, then there are no laws; ultimate reality in this case is maximally non-systematic. The only set of truths in perfectly natural terms that entails all of the physical truths is simply the union of every truth about the instantiation of perfectly natural properties at individual points in spacetime. Any simpler set of truths (e.g., a set of generalizations) would either be false, or be cast in less than perfectly natural terms (e.g., disjunctions).¹⁴ The mere fact that systematicity is an explanatory virtue is not enough to explain why the study of the structure of ultimate reality should be systematic, without the additional assumption that ultimate reality itself has a systematic structure.

One natural response to this argument would be to say that abduction to systematic theories has worked in natural science, and so the onus is on the skeptic to argue that it will not be similarly successful in metaphysics. But this overestimates the role that the predictive success of abduction-based natural science can play in justifying an analogous method in metaphysics. Let us idealize for a moment and assume that our best natural scientific theories are true. But the truth of our natural scientific theories does not mean that they are accurate to the underlying structure of physical phenomena. By permutation arguments made famous by Hilary Putnam and extensively discussed by David Lewis and Ted Sider, the truth of a theory underdetermines the referents of its sub-sentential expressions.¹⁵ Even if we assume that physical reality has a privileged structure, our true natural scientific theories could still be getting that structure wrong.¹⁶ But that means that our systematic natural scientific theory might be a distortion of an underlying non-systematic structure in physical reality. The empirical success of natural scientific theories based on inference to the most

¹³ Lewis 1983, 367–8.

¹⁴ Ignoring merely logical properties like self-identity (which is presumably perfectly natural), because we are interested in the systematicity of metaphysics and physics, not logic.

¹⁵ Putnam 1977, 1980, 1981, p. 22–48; Lewis 1984; Sider 2011, p. 28–32.

¹⁶ The ‘no-miracles’ argument (Putnam 1975, p. 73) is, at best, an argument that our best natural scientific theories are true (and thus that they refer to something), not that they are joint-carving.

systematic explanation gives cold comfort to the idea that the study of ultimate reality should itself be systematic.¹⁷

Another natural response is to point out that systematic theories are to be preferred on pragmatic grounds. Of two equally comprehensive theories, the one that is more parsimonious in its explanatory primitives, and is thus more systematic, is more easily deployable in explaining specific phenomena. But within the context of inflationary metaphysics this is not sufficient. It explains why it is pragmatically rational to use more systematic theories, but it does not explain why more systematic theories are *ceteris paribus* more accurate to the ultimate structure of reality. After all, it might be that the ultimate structure of reality is highly non-systematic, but the human cognitive apparatus is organized in such a way that theories adequate to the non-systematic structure of ultimate reality are so complicated and unwieldy that for practical purposes we have to use more systematic theories that distort that structure. The pragmatic justification for systematic theories would still hold in this scenario but would be in tension with metaphysics' aim to describe the ultimate structure of reality.^{18, 19}

At the end of this chapter, I will consider what further commitments the contemporary metaphysician could take on to explain why metaphysics should be systematic.

2. *Kant and the Systematicity of Reason*

¹⁷ This means that my question (why should metaphysics be systematic?) applies just as much to natural science as to metaphysics. I pursue it at the level of metaphysics here because, first, that is the topic of this volume and, second, because I agree with Kant that the answer in the case of metaphysics will also explain why natural science should be systematic (why we are entitled to assume that nature is systematic.)

¹⁸ Nor will a purely Bayesian account suffice, for familiar reasons. The axioms of probability dictate how we should update our credences given our prior probabilities; they are neutral as to what the prior probabilities are. Thus, they are neutral between a systematic prior probability (i.e. one that assigns a higher probability to a systematic theory than a non-systematic one) and an anti-systematic one (i.e. one that assigns a higher probability to a non-systematic theory). Nor will it help to claim that a preference for systematic theories is constitutive of rational theory choice (Schaffer 2015), for then my question simply becomes: why will rational theory choice so understood tend to get the ultimate structure of reality right?

¹⁹ Nor is the idea that metaphysics ultimately rests on the PSR (e.g., Della Rocca 2010) sufficient to motivate the systematicity of metaphysics. To see this, notice that the PSR is compatible with the grounding relation (or whatever relation holds between a sufficient reason and that for which it is a sufficient reason) being many-one; so as we regress from a given fact, existent, etc. to its grounds, to their grounds, etc. we get a massive profusion, rather than a pruning, of entities. This, intuitively, is not a very systematic metaphysics.

Kant's most complete account of systematicity in metaphysics is found in the 'Architectonic of Pure Reason' section of the first *Critique*. The Architectonic section begins as follows:

By an **architectonic** I understand the art of systems. Since systematic unity is that which first makes ordinary cognition [*Erkenntnis*] into science [*Wissenschaft*], i.e., makes a system out of a mere aggregate of it, architectonic is the doctrine of what which is scientific [*des Scientifischen*] in our cognition in general, and therefore necessarily belongs to the doctrine of method. (A832/B860)²⁰

Kant equates the systematicity (systematic unity) of a set of cognitions with its constituting a science, so the architectonic, the account of what makes cognition systematic, will also be an account of what makes cognition science.

Kant goes on in the next paragraph to assert that rational cognition, cognition through reason, must be systematic and thus scientific:

Under the government of reason our cognitions cannot at all constitute a rhapsody but must constitute a system, in which alone they can support its [reason's] essential ends [*Zwecke*]. I understand by a system, however, the unity of the manifold cognitions under one Idea. This is the rational concept of the form of a whole, insofar as through this the domain of the manifold as well as the position of the parts with respect to each other is determined *a priori*. The scientific rational concept thus contains the end [*Zweck*] and the form of the whole that is congruent with it. The unity of the end, to which all parts are related and in the Idea of which they are also related to each other, allows the absence of any part to be noticed in our knowledge of the rest, and there can be no contingent addition or undetermined magnitude of perfection that does not have its boundaries determined *a priori*. (A832/B860)²¹

This passage contains the core of Kant's conception of systematicity and will repay close attention on our part. A system is a manifold of cognitions unified by an Idea such that (i) that manifold has a unified end; (ii) the Idea specifies what that end is; (iii) the end determines which parts the system must have and how they

²⁰ On the connection between science and system see also B109, A841/B869, Prol. 4:306, MFNS 4:467, CJ 5:381, JL 9:139.

²¹ The same quasi-organic conception of systematicity (the Idea of the whole determines the parts) can also be found at A645/B673, CPrR 5:10; CJ 5:381; 20:247; JL 9:72; LL 24:560, 597, 631, 648–9, 724, 831, 891; LM 29:803, 463; and LPR 28:994.

must relate to one another; and (iv) it can be determined *a priori* whether any part is missing. ‘Idea’ is Kant’s term for a concept generated by the capacity of reason. An Idea is a concept that transcends any possible experience; no possible experience can present us with an object corresponding to an Idea of reason.²² In the case of systems this means that experience alone cannot tell whether some manifold does, or should, constitute a system, nor to what degree a system, what the Idea of a system is, or to what degree a system realizes its Idea.

The Idea specifies the end of the system as well as the parts necessary for that end, and in both cases does so *a priori*. This means that any putative science is a science properly so-called in virtue of having a purely rational Idea that determines its articulation into parts.²³ The parts of the system are specified by the Idea functionally rather than numerically, i.e., the Idea specifies that the system must have a part that serves a specific function, not necessarily how many such parts it has. The parts of a science will include both concepts and principles but may include other functional articulations as well (e.g., into a Doctrine of Elements and a Doctrine of Method.)²⁴

To make this very abstract account slightly more concrete let us focus on the model Kant explicitly draws on throughout the Architectonic: a living organism as a system.²⁵ The Idea of an organism is a concept of its end, i.e., that state the achievement of which would constitute the proper functioning of the organism and would thus make that organism a good instance of its species. This Idea is a rational, rather than empirical, concept because experience alone only tells us how organisms are constituted, not how they ought to be constituted (how they are constituted when they are functioning well as good members of their species.) This end of the organism (its state of proper functioning), in turn, specifies certain functional parts (organs) the organism must have to achieve that end; an animal, for instance, must have organs of motion, of perception,

²² A311/B367, A313/B370, A320/B377, A327/B383–4, A771/B799, etc.

²³ In MFNS (4:468–9) Kant distinguishes between science properly so-called (*a priori* apodictically certain cognition of the necessity of its principles) and improper so-called (empirical cognition of contingent principles). I take it that science properly so-called in that text corresponds to science *simpliciter* in the Architectonic.

²⁴ A15/B29; cf. A847/B875.

²⁵ Kant’s more complete exposition of how it is possible to judge living things as systems is given at CJ, 5: 371, 377; 20:217. Compare these passages with A834/B862, quoted above.

of nutrition, of reproduction, etc., to function properly as an instance of its species. The Idea of the organism ‘allows the absence of any part to be noticed in our knowledge of the rest’ (quoted above) because it allows us to tell if the organism is lacking any organs necessary for its proper functioning, e.g., if it is lacking organs of digestion.²⁶

It is important to note just how strong Kant’s criterion of systematicity is in the Architectonic section. It is not sufficient for being a system that a putative science consists in an ordered hierarchy of ever-greater generalizations; this structure is realized in what Kant calls ‘systematically ordered facts about natural things’ (MFNS, 4:468), which constitute neither a science nor a system proper. Nor is it sufficient for systematicity that the higher-level generalizations *explain* the lower-level generalizations. For such a ‘system’ of laws would not necessarily have the structural features Kant regards as constitutive of systematicity: it would not necessarily be unified under an Idea that specifies the end of the system. Nor is the explanatory relation between higher- and lower-level laws sufficient for the strong condition Kant puts on a system: the Idea of the whole must determine the parts (in this case, subordinate principles) and their inter-relation *a priori*.²⁷ To use an example familiar to Kant, just because the law of universal gravitations explains the orbital laws of the planets in the solar system does not mean that those laws can be derived from it *a priori* (those laws depend upon the relative masses and positions of the planets, which are not derivable *a priori*). But the demandingness of his conception of systematicity merely raises the argumentative stakes for Kant. Why should metaphysics be systematic in this highly demanding and, one might object, idiosyncratic sense?

Although Kant does not make his argument fully explicit, I think that an implicit argument for the systematicity of rational cognition does arise from his remarks about the ends of reason, and the ends of specific rational sciences, in the Architectonic section. To see this, we need to look beyond the organic model I explicated in the previous paragraphs to what lies beneath it: the structure of subordination among ends.

²⁶ Kant’s account of living systematicity in the CJ is complicated by the fact that he denies that we can know that living things are genuine systems (‘natural ends’ in which the whole is the cause of the parts—5:373), rather than mechanically generated by their parts (5:387). We must judge about living things as if they are systems, but whether they are or not surpasses our cognition (5:376).

²⁷ The very same conception of systematicity is invoked A645/B673, where Kant is discussing the regulative idea of systematicity in nature.

What is doing the explanatory work in Kant's organic analogy is the notion that an organism has a single end, to which all other ends are subordinate (they are means to that end.) If we apply this to a given science (a body of cognitions with scientific form) we get a structurally analogous result. Kant assumes that a science has a single end.²⁸ The end of natural science, for instance, might be to cognize Nature as a whole. This single governing end of the science (call it the *ultimate* end of that science) then specifies the necessary means to that end, the subordinate ends that become ends of reason insofar as reason takes on the ultimate end of that science and incorporates the necessary means to that ultimate end among its ends. This entails the 'organic' systematic structure of a science we explored above: the ultimate end of the science determines the necessary means to its end, and this in turn determines the functional parts of that science, the subordinate ends necessary to achieving its ultimate end. To return to our example, if a necessary means to the end of cognizing Nature as a whole is cognizing the laws of Nature (because Nature is essentially lawful²⁹), then natural science must involve cognition of natural laws. While some means-end relationships are only cognizable empirically, every science properly so-called has a pure rational part that determines its Idea (the end of that science) and determines *a priori* the necessary means to that end. This entails exactly the conclusion Kant draws in the passage from earlier: 'the domain of the manifold as well as the position of the parts with respect to each other is determined *a priori*' (quoted above).³⁰

The reason a science has a single ultimate end is that the ultimate end of a science is part of what individuates sciences; if 'one' science had two ultimate ends it would in reality be two distinct sciences.³¹ If there is no subordination relation between these two ends, then this is a mere aggregate of sciences, not a system. For them to constitute a system, one of their ends would have to be subordinated to the other, or

²⁸ 'Nobody attempts to establish a science without grounding it on an idea' (A834/B862); combined with the passage quoted in the main text, this entails that a science must have a single end, that specifies its component parts, etc.

²⁹ '[T]he word nature already carries with it the concept of laws' (MFNS, 5:468).

³⁰ This interpretation of the systematicity of science in terms of ultimate and subordinate ends finds further textual support throughout the Architectonic (A833/B861, A834–5/B862–3, A838/B866), Prol. 4:349, FI 20:214.

³¹ Sciences are partly individuated by their ends, but not fully. The complete individuation of Kant sciences is complex, depending as it does on the individuation of the mental capacities of which a given science is an exercise. See CJ 5:174–5 for an illuminating discussion of the individuation of capacities in Kant.

both would have to be subordinated to some further end. Then, and only then, would they both constitute parts of a single science, i.e., a rationally unified system.³²

I have argued that the systematic structure of a science can be derived from the assumption that every science has a single ultimate end (because sciences are partly individuated by their ultimate ends) and the principle that a science must contain the *a priori* necessary means to that ultimate end (those means whose necessity for a given end are comprehensible *a priori* through reason). That second principle might seem to stand in as much need of an explanation as anything else. But this is simply an expression of the fact that a science is an exercise of the capacity for reason and the end-setting of reason is subject to a requirement of rationally comprehensibility (comprehensibility by reason itself). If reason sets itself an end, but this end is not subordinate to some higher end (not a means to that end), it thereby sets that end as an ultimate end. If it failed to set the necessary means to that end, it would do so irrationally, i.e., contrary to its own principles. Therefore, in setting the end that partly individuates a science (e.g., maximal cognition of corporeal nature), which is thus not subordinate to any end within that science, reason thereby sets that end as the ultimate end of that science, and, insofar as it is rational, sets the *a priori* necessary means for that end.

This is an account of why a single science has a systematic structure. However, most of the Architectonic section is devoted, not to the systematic unity of individual sciences, but to the systematic unity of all sciences whatsoever.³³ But the systematicity of all sciences is simply an instance of the same means-end structure we saw in the case of individual sciences, if we follow Kant in assuming that human reason has a *single* ultimate end. Assuming that the capacity of reason as such has a single end specified by a pure rational Idea, by the reasoning from above it follows that this Idea determines *a priori* certain subordinate means towards that end, which constitute functional parts (organs) of the exercise of reason (rational science) as such. Thus, if we assume that human reason as such has an ultimate end, it follows that the exercise of reason must constitute a

³² The assumption that every science as such has an end is implicit in the argument of the Architectonic (see note 30 above) but made explicit at LL 24:504 and LM 29:766.

³³ According to the older usage on which philosophy includes all sciences and, e.g., natural science is natural philosophy.

system, and the functional parts of that system, individual sciences, must stand in rationally comprehensible means-end relations to one another.

3. *The Systematicity of Metaphysics*

This is an account of why individual sciences and their unified totality must have systematic form. But what does this have to do with metaphysics? To answer that question we have to understand Kant's conception of metaphysics and how it fits into the systematic structure of philosophy he describes in the Architectonic section.

Kant distinguishes the scholastic concept of philosophy from the world-concept (*Weltbegriff*) of philosophy.³⁴ The scholastic concept of philosophy considers each individual science in respect of its particular ultimate aim (e.g., maximally cognizing corporeal nature), but considers these different systems as unified only by the general end of maximizing cognition. The scholastic conception of philosophy thus ignores any relations of rational subordination between different sciences; for the scholastic, the sciences are merely an aggregate, unified, if at all, by the common end of maximizing knowledge. It is the world-concept of philosophy that considers the ultimate end of human reason and is thus able to unify all of philosophy (and all of the sciences) into a systematic whole oriented towards that end, rather than merely as an aggregate of sciences each aiming at maximal cognition of their domain. It is the philosopher in this second, cosmic, or perhaps more intuitively, 'cosmopolitan,' role that specifies the ultimate end of reason (and thus the ultimate end of humanity) and how all of the individual sciences contribute to that end.

It is in this context that Kant writes:

Now the legislation of human reason (philosophy) has two objects, nature and freedom, and thus contains the natural law as well as the moral law, initially in two separate systems, but ultimately in a single philosophical system. The philosophy of nature pertains to everything that **is**; that of morals only to that which **should be**. (A840/B868)

³⁴ I translate *Weltbegriff* as world-concept because, although it is awkward, the alternatives are worse: 'cosmopolitan' brings in the notion of *polis* and citizenship, which is absent in *Weltbegriff* (I take it that Kant intentionally uses this term rather than *weltbürgerlicher Begriff*, cosmopolitan concept); 'cosmic' is also acceptable, but the idea that the *Weltbegriff* considers human reason in its purposive relation to the totality of what exists is already contained in 'world-concept,' as long as we bear in mind that world = *Welt* = cosmos.

This means that theoretical philosophy and practical philosophy originally constitute two separate sciences, each of which its own ultimate end, but which will eventually be united into a single system of philosophy under a single ultimate end of all reason as such.³⁵ Kant does not tell us, at least not in the Architectonic, what that ultimate end of reason is or how it unifies the ultimate ends of theoretical and practical philosophy.

Our task now is to locate metaphysics within this taxonomy, but this is made more difficult by the fact that Kant has a broader and a narrower conception of metaphysics. Kant goes on to distinguish the *a priori* part of philosophy from empirical philosophy.³⁶ Within the former (pure rational cognition) Kant distinguishes, in both theoretical and practical philosophy, between a propaedeutic critique that explains the possibility of *a priori* cognition of that kind (i.e., how pure cognition of what *is* is possible, and how pure cognition of what *ought* to be is possible) and the system of rational cognitions of that kind (i.e. systematic pure theoretical philosophy, systematic pure practical philosophy). But he also admits a broader sense of metaphysics that includes *both* critique and metaphysics in the narrower sense. In the narrower sense, metaphysics is systematic pure rational cognition in theoretical and practical philosophy. In the broader sense it includes also the critique of theoretical and practical reason that explains the possibility of metaphysics in the narrower sense.³⁷ In the narrower sense, Kant never wrote a work of theoretical metaphysics and, of his practical works, only the *Metaphysics of Morals* is a work of practical metaphysics (hence the title).³⁸ In the broader sense, both the *Critique of Pure Reason* and the *Critique of Practical Reason* are works of metaphysics.

We now have an account of why metaphysics, for Kant, ought to be systematic. Metaphysics in the narrower sense consists of two rational sciences, that of nature and that of morals. Being rational sciences, each must have an ultimate end that determines and unifies all of its subordinate ends. Whether metaphysics in the broader sense, in which it includes critique, should be systematic is slightly harder to determine. In the theoretical case, Kant states explicitly that, while the *Critique of Pure Reason* is not the eventual ‘system’ of

³⁵ Cf. CPrR 5:91.

³⁶ A840/B868.

³⁷ A841/B869.

³⁸ The titles of Kant’s other works betray the fact that, while they may contribute to the critique or the foundations of metaphysics, they are not works of metaphysics proper: *Prolegomena to any future metaphysics*; *Critique of Pure Reason*; *Metaphysical Foundations of Natural Science*; *Groundwork of the Metaphysics of Morals*, etc.

transcendental (theoretical) philosophy, it must ‘outline’ the Idea of such a system architectonically.³⁹ This means that while it may not execute the demand for systematicity in theoretical philosophy, it must provide the Idea that unifies pure theoretical philosophy. So even if it is not a system strictly speaking it must be a propaedeutic to a system and contain the architectonic Idea that ‘outlines’ the form of that eventual such system. In the practical case, while the *Critique of Practical Reason* and the *Metaphysics of Morals* are individually systematic in Kant’s technical sense, it is less clear whether they share a common architectonic Idea, i.e., a common systematic form.⁴⁰

Whether metaphysics in the broad sense *as a whole* (i.e., both theoretical and practical) constitutes a science depends upon the ultimate end that unifies theoretical and practical philosophy, and whether it belongs to theoretical or practical philosophy (or to neither). The ultimate end of human reason, Kant thinks, is practical-moral: the highest Good, understand as the state-of-affairs of maximal happiness (desire-satisfaction) conditional upon maximal moral virtue. Practical philosophy thus provides the principle of unity for philosophy as such: all other ends of reason are subordinated to the highest Good, either as means to, or conditions of, that end (e.g., morality is a condition of the Highest Good, because it is a constitutive element of it, not merely a means to that end). These subordination relations among ends generate analogous subordination relations among the sciences of which they are the ends: other sciences are subordinate to practical philosophy because their ends are subordinate to the ultimate, practical-moral end of reason as such.⁴¹ Only as a practical-moral philosopher is the philosopher a philosopher in the ‘cosmic’ or ‘cosmopolitan’ sense (*weltbegrifflich*)—a legislator, rather than a mere artist, of reason.⁴²

However, since this volume is about systematic metaphysics and metaphysics is now standardly conceived as a theoretical science (in Kant’s terms), I will set aside questions about the systematic unity of theoretical and practical metaphysics and focus on the question of the systematicity of *theoretical* metaphysics.

4. *The Systematicity of Reality*

³⁹ A13/B27.

⁴⁰ CPrR 5:3–4, 7, 8, 89, 91; MM 6:205, 215, 216, 218, 242.

⁴¹ A816/B844–5; CPrR 5:108, 121.

⁴² A839/B867.

My explication of Kant from the previous two sections revealed that his account of systematicity in metaphysics (and philosophy more generally) rested on at least two premises that many philosophers today might reject: first, that sciences are partly individuated by their ultimate ends; secondly, that there is a single ultimate end of human reason and it is practical-moral. But even more fundamentally, a contemporary metaphysician is likely to object that the Kantian story simply does not answer the question I raised in section one: even granting that metaphysics is systematic in Kant's sense, why think that systematicity so understood reveals the ultimate structure of reality? Why think that reason's demand for systematic unity in science 'tracks' or in any other way corresponds to the ultimate structure of reality? Kant might appear to have given a purely 'subjective' account of the role of systematicity as an ideal set by the nature of our capacities, but we have not yet seen any reason to think that the objects of those capacities (in the case of metaphysics, the ultimate structure of reality) answer those demands.

The answer to this question is tied up with Kant's transcendental idealism, of which, for reasons of space, I can give little more than a brief outline. At the heart of transcendental idealism is a distinction between things in themselves, things that exist and have their natures independently of our minds, and appearances of such things to our minds, whose existence and properties thus depend on our minds. Intuition is the mental state of direct acquaintance with a singular object. Our capacity for intuiting objects is 'sensible' or receptive, meaning that we intuit objects only because things affect us; it is conceivable that another mind, e.g., that of God, has a non-receptive or 'intellectual' faculty of intuition that generates the very existence of the object it intuits. But because we have a sensible capacity for intuition, we do not intuit things in themselves, but only their appearances to our minds.⁴³ Space and time are the forms our sensible faculty of intuition; things in themselves are not in space and time but appear to us as spatiotemporal objects because of the forms of our intuition. A non-spatiotemporal form of sensible intuition (thus, non-spatiotemporal appearances) is logically

⁴³ This direct path from the receptivity of intuition to the ideality of the objects of intuition, a so-called 'short' argument to idealism, does not represent Kant's official argument for transcendental idealism, but an intuitive ground for it, to which he appeals in various texts. The official 'long' argument for transcendental idealism depends on specific features of spatiotemporal representation (i.e., that our basic representation of space and time are intuitive and a priori), lies outside the scope of this essay. For the distinction between long and short arguments for idealism see Ameriks 2003, ch. 5.

possible, but we cannot know whether such a form of intuition (and such objects) is metaphysically possible, much less whether beings with such a form of intuition (and the objects of that intuition) are actual. The spatiotemporal form of objects is *a priori*, determined solely by our subjective form of intuition; the matter of intuition (i.e., which objects appear in space and time, with which determinate spatiotemporal relations) is empirical and depends on how our minds are affected. Since space and time are nothing more than forms of our sensible intuition, all spatiotemporal objects are appearances to our sensibility; for an object to exist in space and time just is for it to be (either possibly or actually) intuited by us.⁴⁴

This is the metaphysics of transcendental idealism, but this metaphysics has epistemological consequences, given Kant's background conception of cognition. To cognize objects, according to Kant, we must be able to intuit those objects (be directly mentally acquainted with them) and conceptualize them (bring them under concepts, combine those concepts in judgments, etc.) This does not mean that we must intuit every object of a certain kind in order to cognize a generalization about all objects of that kind, but it does mean that we must be able in principle to intuit objects of that kind in order to cognize anything about objects of that kind. Since our intuition is limited to appearances, this entails that our cognition is limited to appearances; we cognize only the mind-independent appearances of things, not how those things are independently of our minds. Since spatiotemporal objects are all, and only, appearances of things in themselves to our sensibility, our cognition is limited to spatiotemporal objects; we cognize nothing of the non-spatiotemporal things that appear to us as those objects.⁴⁵

Since our cognition is restricted to appearances, if metaphysics is to constitute cognition it too must be restricted to appearances; it must constitute what Kant calls 'immanent' metaphysics (as opposed to 'transcendent' metaphysics, metaphysics of super-sensible things in themselves.)⁴⁶ Metaphysics is a pure *a*

⁴⁴ A218/B266, A374-5 n., A493/B520; for discussion see Stang 2018.

⁴⁵ As even this brief explication shows, there are potential problems in the very foundations of Kantian transcendental idealism. For one, if we cannot know anything about things in themselves, how do we know that they exist, appear to us, and are distinct from appearances? For another, is the knowledge that our sensible faculty is spatiotemporal knowledge of a thing in itself (our minds) or knowledge of appearance? I do not think these problems have ever been adequately solved, in the long history of Kantianism, but for critical discussion see Beck 1978, ch. 2; Marshall, and Stang forthcoming.

⁴⁶ A845/B873.

priori science, so it cannot be about the contingent material features of objects (those that depend on how we are affected). It must be *a priori* cognition of the absolutely necessary features of such objects. Kant's way of accounting for this is that immanent metaphysics is about the formal features of such objects, the features determined by the forms of the mental faculties by which we cognize them. Experience of an object requires intuition and conceptualization, so the form of intuition and the form of conceptualization determine the form of any such experience. Since the objects of experience are appearances, the form of that experience is the form of such objects. Insofar as metaphysics concerns itself with the forms of the capacities operative in experience, sensibility and understanding (the capacity of conceptualization), it will uncover the formal feature of all objects of experience, i.e., all objects in space and time.

But metaphysics is also a science, and, as we have seen, this, according to Kant, requires systematic unity. The source of the demand for systematicity, in Kant's account, is the capacity for reason. Sensibility is the capacity for intuiting objects by being affected by things outside the mind; understanding is the capacity for bringing such given objects under concepts, generating experience and knowledge; and reason is the capacity that demands that the cognitions constituted by intuition and understanding have systematic form.⁴⁷ In the case of empirical cognition, reason's demand that cognition constitute a system can only ever constitute a regulative ideal, for experience depends on empirically given data (objects 'given' to intuition).⁴⁸ In the case of empirical natural science we must meet reason's demand for systematicity by seeking out systematic explanations of natural phenomena, i.e. trying to bring our constantly evolving knowledge of the natural world into systematic form. But because the complete empirical truth about objects outstrips what we have experienced of them after any finite amount of time (no matter how long that finite period of inquiry is), our empirical knowledge will necessarily fall short of the Idea of systematicity, although it may asymptotically approach ideal systematicity over time. Systematicity, being an Idea of reason, can never be experienced or cognized empirically; empirical cognition itself can never fully realize the Idea of systematicity.

⁴⁷ A298/B355, A305/B362.

⁴⁸ A645/B673.

But in the case of immanent metaphysics reason can make a stronger demand because metaphysics, being a pure *a priori* science, does not depend what we passively receive in experience. The scientific status of metaphysics requires that reason here must posit for itself a single ultimate end: theoretical pure *a priori* cognition of the form of all appearances. This specifies the Idea of immanent metaphysics, from which the subordinate components of metaphysics derive: there must be a component that describes the *a priori* intuitive form of cognition (Transcendental Aesthetic) and a part that describes the *a priori* conceptual form of cognition (Transcendental Logic). This specifies not only the systematic form of metaphysics as an activity of human reason, but also the systematic structure of the objects of (theoretical, immanent) metaphysics, because those objects are appearances. The structure of the science by which we cognize such objects is the structure of those objects themselves.

The first *Critique*, although it is not yet metaphysics (in the narrow sense), outlines the architectonic plan of that eventual metaphysics.⁴⁹ It provides the systematic form of that eventual metaphysics and is itself organized according to that form; the systematic form of metaphysics in the narrow and broad sense are the same. Kant is quite explicit that the systematic form of metaphysics as well as its object (spatiotemporal appearance as such) are provided by the table of categories. At the opening of the Transcendental Analytic, having announced his project of deriving the complete table of the non-derivative pure concepts of the understanding (categories), Kant writes:

Now this completeness of a science cannot reliably be assumed from a rough calculation of an aggregate put together by mere estimates; hence it is possible only by means of an **Idea of the whole** of the *a priori* cognition of the understanding, and through the division of concepts that such an idea determines and that constitutes it, thus only through their **connection in a system** [. . .] It is therefore a unity that subsists on its own, which is sufficient by itself, and which is not to be supplemented by any external additions. Hence the sum total of its cognition will constitute a system that is to be grasped and determined under one Idea, the completeness and articulation of which system can at the same time yield a touchstone of the correctness and genuineness of all the pieces of cognition fitting into it. (A64/B89)

⁴⁹ It is not doctrine, but critique (A11/B25).

Read in parallel with the passages from the Architectonic I discussed in Section Two (A832/B860), I think this leaves little doubt that Kant conceives of the table of categories as a system in precisely the technical sense adumbrated there. An Idea of the whole determines every part of the table of categories (each of its four titles, and the three moments of each title) such that if any part were missing, or if any parts were redundant, this could be determined *a priori*. Since the categories are the form of understanding, and understanding is one of the forms that determine experience, the system of the categories also provides the systematic form of all objects of all experience. But the table of categories also provides the form of the ‘system of principles’ of experience; the ‘system’ of dialectical inferences by which reason can be led astray in claiming cognition of things in themselves; and the system of cosmological ideas of a world-whole.⁵⁰ Kant summarizes the point nicely in *Metaphysical Foundations*: ‘the schema for completeness of a metaphysical system, whether it be of nature in general, or of corporeal nature in particular, is the table of categories’ (MFNS, 4:474).

This is Kant’s explanation of what the systematicity of metaphysics consists in, why immanent theoretical metaphysics must be systematic, and why the object of such metaphysics will be systematically structured in the same way (why metaphysics so understood will accurately describe the structure of its object.) It does not explain why the systematic structure of transcendent metaphysics will mirror the systematic structure of its object (things in themselves). But because our theoretical cognition is limited to appearances, this means that there can never be a theoretical science of things in themselves; our only cognitive access to the super-sensible nature of things in themselves is through practical reason.⁵¹ Since things in themselves correspond to what I, following Van Inwagen, have been referring to as ‘ultimate reality,’ Kant’s view is that metaphysics, understood as the theoretical science of the structure of ultimate reality, is not possible for us.

Conclusion

In Section One I criticized contemporary accounts for lacking an explanation of why metaphysics should be systematic. In particular, I argued that their preference for a systematic methodology is justified only if

⁵⁰ A161/B200, A323/B379, A415/B442.

⁵¹ CPrR 5:106.

they assume the ultimate structure of reality is systematic; if it is not, then systematic metaphysical theories will *ceteris paribus* be worse theories (they will get the structure of ultimate reality wrong.) But a contemporary metaphysician might plausibly complain that the price of Kant's own explanation of why metaphysics should be systematic is too high to pay: transcendental idealism and the limitation of our (theoretical) metaphysical cognition to appearances.

I want to conclude by arguing that this response is overly hasty. In order to weigh the relative merits of the Kantian view versus contemporary views, we have to know what additional commitments the contemporary metaphysician would have to take on in order to explain the systematicity of metaphysics. It is over-hasty to simply dismiss transcendental idealism as 'implausible'; we must investigate whether the explanatory work that transcendental idealism does for Kant can be done with less problematic commitments ('on the cheap,' to borrow a phrase from David Lewis.)

The natural and historically salient alternative to Kant's explanation of the systematicity of metaphysics is a theistic one: the ultimate structure of reality is systematic because it is caused by an absolutely perfect being (God), and an absolutely perfect being cannot cause a non-systematic effect. This can be taken to mean either that God causes such a reality to exist because of his perfection of his essence, without choice or purpose (e.g., Spinoza), but for reasons of space I will follow Kant in focusing on the Leibnizian version: due to his own perfection God purposely chooses to create a perfect, i.e., systematic, reality. Although I am not aware of any place where Leibniz explicitly defines systematicity, it would be very natural for him to define systematicity as plurality-grounded-in-unity: an entity (e.g., a substance, a theory, a possible world) is more systematic the more plurality it has and the more that plurality is grounded in a unitary principle.⁵² But this is the same as Leibniz's definition of perfection; thus, a structure is more systematic the more perfect it is. Since God is the *ens perfectissimum*, the most perfect possible being, he is maximally systematic (he has infinitely many properties grounded in absolutely unified essence). Consequently, Leibniz argues, God creates the most

⁵² The closest thing I am aware of is this remark in a letter to Christian Wolff of 18 May, 1715: 'Nothing is more regular than the divine intellect, which is the source of all rules, and produces the most regular, that is, the most perfect system of the world, the system that is as harmonious as possible and thus contains the greatest number of general observations' (Leibniz 1989, p. 233; cf. Leibniz 1969, p. 659).

perfect of all possible worlds, the one that maximizes plurality of phenomena with parsimony of explanatory principles.⁵³ This is massively condensed, but it provides Leibniz with an elegant explanation of why metaphysics, understood as the study of the ultimate structure of reality, whether that ultimate reality be God himself (theology) or the world (cosmology), must be systematic. But notice that the Leibnizian definition of perfection/systematicity is very close (plurality grounded in unity) to the one I suggested guides contemporary metaphysics: parsimony and fecundity of explanatory primitives. This suggests that Leibniz has a better explanation of the systematicity of metaphysics than contemporary metaphysicians do.

Whether or not Kant's transcendental idealist explanation of the systematicity of metaphysics in terms of the demand by reason for systematicity is ultimately a better explanation than the Leibnizian in terms of the metaphysics of perfection is a question I will defer to a future occasion. But I do think this chapter provides strong *prima facie* evidence for thinking that a metaphysician concerned to explain, rather than merely assume, that metaphysics must be systematic would do well to look to pre-Kantian rationalists like Leibniz, Wolff, and Spinoza, and their most trenchant critic, Kant.

Abbreviations for works of Kant

All works of Kant, other than the *Critique of Pure Reason*, are cited by volume and page number in the 'Akademie Ausgabe' (AA):

- A/B *Critique of Pure Reason*, cited by page number in 1781 A edition (AA 4) and 1787 B Edition (AA 3). Translation in *Critique of Pure Reason*. Trans. & Ed. Paul Guyer & Allen Wood. Cambridge: Cambridge University Press, 1998.
- CJ *Critique of Judgment / Kritik der Urtheilskraft* (AA 5). Translation in *Critique of the Power of Judgment*. Trans. & Ed. Paul Guyer & Eric Matthews. Cambridge: Cambridge University Press, 2000.
- CPrR *Critique of Practical Reason* (AA 5). Translation in *Practical Philosophy*. Trans. & Ed. M. J. Gregor. Cambridge: Cambridge University Press, 1996.

⁵³ Leibniz 1969, p. 305–6, 639.

- FI First Introduction to the *Critique of Judgment* (AA 20). Translation in *Critique of the Power of Judgment*. Trans. & Ed. Paul Guyer & Eric Matthews. Cambridge: Cambridge University Press, 2000.
- JL Jäsche Logic (AA 9). Translation in *Lectures on Logic*. Trans. & Ed. J. Michael Young. Cambridge: Cambridge University Press, 1992.
- LL Lectures on Logic (AA 24). Partial translation in *Lectures on Logic*. Trans. & Ed. J. Michael Young. Cambridge: Cambridge University Press, 1992.
- LM Lectures on Metaphysics (AA 28–9). Partial translation in *Lectures on Metaphysics*. Trans. & Ed. K. Ameriks & S. Naragon. Cambridge: Cambridge University Press, 1997.
- MFNS *Metaphysical Foundations of Natural Science* (AA 4). Translation in *Theoretical Philosophy after 1781*. Trans. & Ed. H. Allison & P. Heath. Cambridge: Cambridge University Press, 2002.
- MM Metaphysics of Morals (AA 6). Translation in *Practical Philosophy*.
- Prol. *Prolegomena to any future Metaphysics* (AA 4). Translation in *Prolegomena to Any Future Metaphysics*. In *Theoretical Philosophy after 1781*.

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