

Dissertation Overview

“Infinity and Givenness: Kant’s Critical Theory of Sensibility”

Kant’s distinction between sensibility and intellect is arguably the keystone of his critical philosophy. In his practical works, it is precisely in virtue of our amphibious nature as sensible, yet rational agents that we are subject to the moral law in the form of an imperative. And in his theoretical writings, Kant argues that proper attention to the difference between sensibility and understanding reveals the possibility and the limits of all human knowledge. Now there is a venerable tradition in Western philosophy, dating back to its very beginnings, of distinguishing the mind’s cognitive faculties into “higher” and “lower” varieties.¹ And there is remarkably widespread agreement about the rough extensions of these notions. The higher and lower cognitive faculties are each pegged to particular prototypical forms of mental activity. Paradigmatic exercises of the higher cognitive powers include acts of forming and applying concepts, making judgments, and drawing inferences.² Paradigm cases of the lower cognitive faculties include sensation, perception, subjective feeling (e.g. pain), and desire.

¹ See, for example, Parmenides’s Poem; Plato, *Phaedrus*, *Republic*; Aristotle, *De Anima* III.3 (427b7-16); Augustine, *On the Trinity*, XII.1; Aquinas, *Summa Theologica* I, Q.77, art. 5. Kant clearly has this philosophical lineage in view in R1643 (c. 1765-75), Ak. 16:63: “*Epicurus* asserts the essential difference between the sensitive and the intellectual but maintained that the sensible alone contains truth and distinctness and can become a science. [¶] *Plato* asserts the essential difference between the sensitive and the intellectual but maintained that only the intellectual produces [gebe] science. [¶] *Aristotle* asserts that there is no essential difference between the two, that both spring from the senses, and that reason is only a particular use of the former [sc. the sensitive] through which it can become science.”

² There are, of course, more specific modes of mental activity that are also associated with the higher cognitive powers, such as grasping the abstract in the concrete, generalizing from the particular to the universal, and, indeed, operating with abstract and general representations as such. Is there a distinct power associated with each such act type? Or are multiple act types associated with some powers? On these questions, there is considerable disagreement. Indeed, there is disagreement about what sorts of considerations are relevant to settling these questions. The very idea that a philosophical account of knowledge and of the mind should involve distinguishing a variety of powers, faculties, and capacities is itself a striking fact, worthy of study in its own right. It is not immediately obvious what it means to attribute a faculty to the mind, much less how such ostensibly non-identical powers are to be individuated and interrelated. We will have occasion to reflect on the ontological and methodological underpinnings of attributing faculties to the mind, especially in chapter 2. But the primary focus of this study is on a particular strain within the tradition of “faculty psychology” in the philosophy of mind – namely, the theory of sensibility as a cognitive faculty. We will eventually become concerned to distinguish between the notions of power, capacity, faculty, ability, and so on. But such subtleties needn’t detain us here. For discussion, see §3.4.2 note 70.

The criteria on which these distinctions turn, however, are far less clear. Indeed, it is sometimes difficult to ascertain whether a given thinker even has considered views about the intensions of these notions or the criteria we should employ in distinguishing among these faculties (and the types of mental acts and representations associated with them). Such considerations are often peripheral to a thinker's overall system. But for Immanuel Kant, they are absolutely central. Indeed, the fundamental strategy of his critical philosophy is to determine the nature of the mind's powers in order to adjudicate what we can know, what we should do, and what we dare hope.³ And if his accounts of our cognitive faculties have the consequences he claims for them – e.g. that what we can possibly experience is transcendently ideal and represents the limits of what is humanly knowable – they must differ radically from traditional accounts, which do not seem to have such consequences.⁴

Much ink has been spilled discussing the details of Kant's views of the higher cognitive faculties – reason, the understanding, imagination, the power of judgment. Yet his views about the lower cognitive faculties – notably sensibility – have received considerably less attention. The best and most extensive discussions of Kant's theory of sensibility are to be found in studies of his philosophy of mathematics. This should not be greatly surprising, since one of Kant's more notorious heterodoxies – and, hence, one of the more promising indications of his account's distinctive features – is that sensibility has an essential role to play in our knowledge of pure mathematics. Yet the radicality of Kant's position on this point has not, I think, been sufficiently appreciated.⁵

³ Kant, of course, says that philosophy is structured by *four* fundamental questions, including “what is the human?”. However, a philosophical account of the cognitive faculties is part of an answer to the question of humanity. So the first three questions (of metaphysics, morals, and religion) are actually subsidiary to the fourth, anthropological question in the guise of critical philosophy (*J-Logic*, Ak. 9:25). See also A804-6/B832-4.

⁴ Kant himself is eager to emphasize the revolutionary nature of his account in lambasting Locke and Leibniz for their respective crimes of “sensualizing” the intellect and “intellectualizing” sensibility. Cf. A271/B327.

⁵ There may be many reasons for this. It may have something to do with the natural association of perceptual language with mathematical perspicuity (cf. Domski, “Kant on the Imagination and Geometrical Certainty”). It

Kant's heterodoxy begins to verge on paradox once we note that he seeks to ground even our knowledge of the mathematically infinite on precisely this sensible foundation. The paradox here is that sense perception remains, for Kant, a paradigmatic exercise of sensibility. Yet we manifestly cannot perceive the infinitely large or the infinitesimally small.⁶ Rationalists and empiricists alike historically cite precisely this finitude of sense perception in support of the nearly universally shared view that knowledge of the mathematically infinite is possible only if it is in no way sensible.⁷ How then can Kant consistently conceive of sensible intuition as having its paradigmatic manifestation in sense perception while it is also supposed to ground infinitary mathematics? And what might recommend such a conception over other traditional accounts of the lower cognitive faculties? What sorts of considerations might lead us to associate two such ostensibly disparate cognitive achievements with one and the same faculty? Why is this a philosophically attractive way of carving up the powers of the mind? And why should this notion – which appears almost willfully gerrymandered in its unusual combinations of different mental activities – merit the name 'sensitivity'?

These are the guiding questions the present work is meant to answer. To come to grips with Kant's theory of sensibility, I argue, we must develop a conception of intuition that reconciles infinity with the givenness of perception. It is this givenness of content, I

may also have something to do with the essential role of perception in diagrammatic reasoning: cf. Shabel, *Mathematics in Kant's Philosophy*; Manders, "The Euclidean Diagram" and "Diagram-Based Geometrical Practice"). Or it may be due, in part, to the rich subsequent development of intuitionism in the philosophy of mathematics – for example, in the work of Hintikka, Parsons, and Posy. Whatever the reason, such familiarity has occluded some of the novel and distinctive features of Kant's views.

⁶ Nor does Kant claim that we can; see the conclusion of §4.3. In this, Kant departs from Leibniz, who maintains that we can (and, indeed, must be able to) perceive infinitely complex contents, although we do so only confusedly. See §0.1, below.

⁷ To the best of my knowledge, Kant is the first – and perhaps the only – great thinker in the history of Western philosophy to challenge this claim. In debates about the possibility of infinitary mathematical knowledge, one philosopher's *modus ponens* has been another's *modus tollens*. Either they hold that infinitary knowledge is possible because not all knowledge is sensible, or they hold that infinitary knowledge is impossible because all knowledge must be sensibly grounded. Only Kant challenges the shared conditional premise, reconceiving the nature of sensibility.

argue, that underlies Kant's fundamental characterization of intuition. For Kant, both sense perception and mathematical knowledge of the infinite are paradigm instances of sensibility, because both present contents that discursive thought can accommodate but not generate – because both exhibit the givenness of content proper to sensibility. Moreover, I argue that the same sorts of considerations and modes of argumentation that lead Kant to identify givenness of content as the essence of sensibility also bring to light a series of further characteristics. I thereby provide a more systematic and more detailed account of the features that Kant attributes to sensible intuition than any currently available in the literature. On my reading, human intuition is (i) object-giving, (ii) receptive, (iii) sensible (i.e. dependent on causal affection), (iv) immediate, (v) manifold, (vi) ego-centrally oriented, (vii) holistically articulated, (viii) infinitely complex (ix) singular representation of (x) compositional, (xi) mereologically structured, (xii) particulars (xiii) in space and time.

Now each of these features of sensible intuition has – in one form or another and with more or less clarity – already come to light in the literature, especially in work on Kant's philosophy of mathematics. And there has even been extensive discussion about how two such features – viz. immediacy and singularity – relate to one another.⁸ But there has been, as yet, no sustained attempt to understand why Kant takes these (and precisely these) features to characterize a unified and unitary cognitive capacity. Though great scholarship has been dedicated to isolated details of Kant's theory of intuition – particularly in his philosophy of mathematics – this work is rarely guided by an overarching concern with the philosophical methodology and mode of argumentation that leads Kant to group precisely this set

⁸ The rough trajectory of the debate developed in the following order. Beth, "Über Lockes 'allgemeines Dreieck'"; Hintikka, "On Kant's Notion of Intuition (Anschauung)"; Parsons, "Kant's Philosophy of Arithmetic"; Thompson, "Singular Terms and Intuitions in Kant's Epistemology"; Hintikka, "Kantian Intuitions"; Wilson, "Kant on Intuition". Mitscherling, "Kant's Notion of Intuition: In Response to Hintikka"; Gloy, "Die Kantische Differenz von Begriff und Anschauung und ihre Begründung"; Kolb, "Thought and Intuition in Kant's Critical System"; Falkenstein, "Kant's Account of Intuition"; Kelley, "Intuition and Immediacy in Kant's *Critique of Pure Reason*"; Smit, "Kant on Marks and the Immediacy of Intuition".

of features together as characteristic of sensibility. To adapt a remark of Kant's, our treatment of the elements of his theory of human intuition has been, at best, rhapsodic.⁹ We still lack a systematic understanding of what unites these criteria into a coherent and complete¹⁰ account of the lower faculty of cognition. We lack a "guiding thread" that, when methodically followed, enables us to trace back each such feature to the unified source from which they all derive.

Two notable illustrations of this unfortunate trend are Charles Parsons and Michael Friedman. Parsons takes the essence of sensible intuition, for Kant, to lie in its immediacy, by which he understands "phenomenological presence [sc. of objects, contents] to the mind, as in perception".¹¹ And he integrates this notion of phenomenal presence into a comprehensive phenomenology of experiential knowledge and an attractive form of intuitionism in mathematics. Friedman, by contrast, argues that Kant's notion of intuition is meant to ground infinitary mathematics in the absence of a logic capable of polyadic quantification (especially schemata of the form $\forall x\exists y(\dots)$). Each of these groundbreaking readings of Kant contains important insights, but neither can fully capture Kant's position. Indeed, the insight contained in each reveals that the other must involve significant distortions. Kant's enduring commitment to infinitely complex intuitive contents (such as continuous spatio-temporal manifolds), which Friedman rightly emphasizes, shows that phenomenal presence to the mind cannot be an essential criterion of intuitive representation. For such contents necessarily outstrip the acuity of our awareness and the limits of our attention.¹² On the other hand, Friedman's focus on the nested quantifications required to provide a logical

⁹ Cf. A81/B106.

¹⁰ Complete, that is, from the perspective of critical philosophy. There is, no doubt, much more to be said about features of human intuition that are not apparent from the standpoint of transcendental reflection.

¹¹ Parsons, "Kant's Philosophy of Arithmetic", 112; "The Transcendental Aesthetic", 66. For my critical discussion of this view, see the conclusion of §4.3.

¹² For a more detailed account of this point, see §0.2, below.

foundation for the calculus (and other forms of infinitary mathematics) loses touch with Parsons's insight that Kant's principal motive for invoking intuition in his epistemology is to secure thought's relation to the knowable world by presenting *actual objects* to the mind – an epistemic requirement that is quite unaffected by Frege's logical innovations or the mathematical achievements of Cauchy and Weierstraß.

The interpretive and philosophical achievements contained in Parsons's and Friedman's work are both genuine and significant. And they are particularly laudable for seeking to thoroughly integrate their interpretations of Kant's theory of intuition into global accounts of Kant's system as a whole – though with special attention to his epistemology and philosophy of science. Nevertheless, each of their readings distorts essential features of Kant's theory of sensibility, albeit in different ways. In Parsons's case, his focus on (and unfortunate way of construing) the immediacy of sensible intuition leads him to downplay (and ultimately reject¹³) its infinite complexity. In Friedman's case, his focus on the role of intuition in infinitary mathematics leads him to undervalue its more fundamental epistemic role in placing the mind in a knowledge-enabling relation to real, mind-independent objects. In both cases, focus on one feature leads to distortion of other features.

Now some may take the unevenness of these interpretations to be symptomatic of tensions internal to Kant's own views. Perhaps the Kantian rug will just never lie flat – and the only question is which areas one wants to press smooth and thus which parts one is content to leave bumpy. But I would suggest that these distortions in fact result from inattention to a specific set of methodological questions: namely, (i) how do these characterizations of intuition emerge as integral parts of a unified investigation into a cognitive faculty, and (ii) what are the sorts of considerations drive such an investigation? If the various characteriza-

¹³ See Parsons, "Infinity and Kant's Conception of the 'Possibility of Experience'".

tions of intuition Kant puts forward are severally motivated by different sorts of consideration, which belong to a motley of distinct philosophical projects, then it is only natural to expect that those features may sometimes stand in tension with one another. Yet to acquiesce that there will inevitably be such tensions in Kant's account – that there will always be bubbles in the rug – is to assume that there is no unified line of thought that governs his argument(s).

One aim of my dissertation is to question this assumption by inquiring whether there is some unifying rationale – some guiding line of thought and method of argumentation – that Kant employs in establishing that various features are characteristic of a given cognitive faculty. In order to understand how the elements of his account interrelate, I seek to understand how he arrives at each such element. I face up to the threat that different aspects of Kant's account of sensible intuition may stand in tension with one another by seeking to uncover a unifying rationale that binds them all together. That is, I seek to understand why Kant's account of sensible intuition invokes precisely the features it does, and how those features interrelate, by considering how they might successively come to light in the course of a single, systematic line of thought. Provided that such a reconstruction has an adequate textually basis, I take it to be preferable to readings that cannot make the Kantian rug lie flat.

Thus, if it is successful, the strength of the sort of reading I am offering lies not just in its detail but in its attempt to explain how an appreciation of any one of these features is conditioned by an understanding of the others. I seek to explain, that is, why this plurality of features constitutes a unified mode of representation. This systematic concern is not simply a further advantage of the interpretation I advance. Nor is it merely a way of ensuring that one does not neglect or distort other details of Kant's account. A concern with the philosophical methodology and mode of argumentation that leads Kant to adduce precisely the

features of intuition that he does is, I shall suggest, a precondition for making contact with Kant's theory of intuition in the first place. For Kant is not simply listing formal features of some of our mental acts. He is arguing that certain features should be viewed together as expressions of the selfsame capacity.

So the second aspect of my dissertation's contribution to the literature – beyond its detail – is an innovative description and defense of Kant's *a priori* methodology in advancing his critical philosophy.¹⁴ On this point, too, much ink has been spilled. But what has been written about Kant's argumentative method in establishing the principles of the critical philosophy has focused almost exclusively on his account of the higher cognitive faculty (or faculties). There are vast literatures on topics that bear disproportionately on Kant's account of the intellect.¹⁵ And much of this work is concerned, among other things, with Kant's philosophical methodology – with the status of his claims (*qua* logical, metaphysical, phenomenological, epistemological, empirical, etc.), with the sort of project he is engaged in, with nature of the considerations to which he appeals, with the sort of inferences he is making, with the kind of perspective, reflection, and abstraction his argument demands, and so on.

Now it is altogether understandable that discussions of Kant's method have focused on the higher cognitive faculties. For Kant's characterizations of his method in prosecuting

¹⁴ A detailed summary of my interpretation on this point can be found in §0.3, below. For the moment, I am simply trying to motivate the idea that an investigation into the details of Kant's theory of human intuition should be guided by such a systematic concern with methodology.

¹⁵ I have in mind issues such as the status and derivation of the categories, the argument of the Transcendental Deduction, the form of transcendental arguments in general, the nature of apperception, the principle that the 'I think' must be able to accompany all my representations, the arguments for the chief claims in the *Analytic of Principles* (i.e. the Axioms, Anticipations, Analogies, and Postulates), the logical and metaphysical status of the thinking subject, and much else besides.

a critique of pure reason consistently appeal to reason's knowledge of *itself*.¹⁶ If the critical philosophy is to be understood as a form of self-knowledge, it is only natural to look to those sections of the text that have most explicitly to do with apperception, the nature of self-consciousness, transcendental reflection, and so on. But this raises a troubling question about the status of Kant's theory of sensibility in the Transcendental Aesthetic. To what extent can we project the methods of argumentation that Kant employs in investigating the nature of the understanding into the sections of the work where he is investigating sensibility? To what extent is there a unitary mode of philosophical activity or reflection called "*critique*" that runs through the entire Doctrine of Elements? To what extent does Kant's theory of sensibility exhibit the same method and enjoy the same justificatory status as the characterizations of the understanding presented in the Transcendental Analytic? If critique is, in general, reason's knowledge of itself, and if reason and sensibility are specifically different, then how can it be that knowledge of the nature of sensibility is part of what reason knows in knowing itself?

I take it that an adequate understanding of Kant's methodology – even one that is based on sections of the book that principally concern the higher cognitive faculties – ought to yield answers to these questions. Yet they rarely seem to even come into focus in the literature. One strength of the interpretation I defend here is that it not only raises these questions but also seeks to answer them by explaining how the same modes of reflective self-consciousness that yield the celebrated principles of the Transcendental Deduction, *inter alia*, can also yield an appreciation of the fundamental features of sensible representation.

¹⁶ See, for example, Axif., Axiv, Bxxiii, B23, A12f./B25f., A735/B763, A745/B773, A849/B877; *Prolegomena*, Ak. 2:274, 316, 328; *Tone*, Ak. 8:390; *J-Logic*, Ak. 9:14; R2667 (after 1790), Ak. 16:459; notes for the *Metaphysics of Morals*, Ak. 23:402; *Opus Postumum*, Ak. 21:36.

The strategic thrust of my dissertation thus addresses two complementary lacunae in the literature. First, it appreciates that an adequate account of Kant's theory of human intuition requires a sustained engagement with his philosophical methodology. Second, it is guided by the thought that an interpretation of Kant's philosophical methodology – even if some of his most explicit formulations of that methodology occur in the context of his discussion of the higher cognitive faculties – must be able to account for Kant's critical theory of the lower cognitive faculties and the modes of argumentation by which he purports to establish that theory.

Chapter 1 addresses Kant's earliest attempts to distinguish sensible from intellectual representation. I argue that this distinction turns precisely on the representation of infinity. Kant adapts Leibniz's solution to "the labyrinth of the continuum" in maintaining that infinitely divisible manifolds (such as spatiotemporal phenomena) cannot exhibit true unity because there is no non-arbitrary way to identify their parts. Since Kant takes pure reason to demand that composite substances are uniquely (and hence non-arbitrarily) resolvable into simple parts, representing spatiotemporal phenomena cannot be the work of reason, but must be due to another faculty – namely, sensibility. And since any representation of spatiotemporal phenomena as complex wholes depends on an arbitrary manner of identifying parts, what such representations represent is mind-dependent and hence, ideal. This reveals infinity to be a principle motivation for Kant's account of sensibility as well as significant aspects of his concomitant idealism.

Chapter 2 takes a methodological turn, arguing that, despite similarities in phrasing and argumentative structure, Kant's pre-critical idealism and faculty psychology represent a species of substance metaphysics which is incompatible with his critical doctrines. Kant's critical turn transposes his pre-critical ontology into a non-metaphysical key. Rather than regarding the mind as an immaterial substance equipped with certain quasi-causal powers, Kant analyzes the concept

of finite, discursive cognition we each possess precisely in virtue of being self-conscious, finite knowers. Through such analysis, certain features emerge as necessary to contentful cognition. Kant's critical faculty psychology and its attendant modes of argument group certain features together as logically interdependent and then correlate those clusters of features with distinct functions (faculties) of the mind, about whose physical and metaphysical constitution transcendental philosophy must remain agnostic.

Chapter 3 substantiates this account by showing how a sound argument for the sensibility/understanding distinction can be extracted from the opening claim of the first *Critique* – that “all our knowledge begins with experience” (B1). This means we humans must learn in order to know. We must learn because our thought does not, of itself, amount to knowledge: objects may exist without our thinking about them (i.e. we can be ignorant), and we may think about objects in ways that fail to correspond to them (i.e. we can err). Thus, if our thoughts are to be contentful and truth apt, we must not only have the capacity to think (understanding), but also the ability to be *given* objects to think about (sensibility). This is an analytic claim because it emerges, as promised in chapter 2, from an analysis of our self-conscious grasp of our own form of knowledge as dependent on acquaintance and learning. Despite its analyticity, I suggest, the distinction is progressively (“synthetically”) enriched as the argument of the *Critique* brings further features of our knowledge to light.

Chapter 4 puts this account of sensibility to use by arguing that the intuitive or sensible status of spatial representation is secured by its infinitary structure and not, as most commentators assume, by its singularity. Kant conceives discursive thought as essentially classificatory, governed by specific differentiations of a highest genus into exclusive and exhaustive species. Discursive representations (concepts, thoughts) can thus be arbitrarily complex (specific), but never infinitely complex. Hence, for finite intellects such as our own to so much as entertain

thoughts about infinitary manifolds – which, of course, we do – these manifolds (most notably, space and time) must be given to the mind: i.e. represented in sensibility. This partly confirms my previous suggestion that the notions of sensibility and understanding are progressively enriched over the course of the *Critique*. For if spatiotemporal representation is thus intuitive and, as Kant argues, constitutes the *form* of all intuition, the essential singularity and unity of spacetime entails the singularity of intuition. So the singularity of intuition is not a presupposition of Kant's argument, but a consequence and enrichment of the initial conception of sensibility as givenness.

Chapter 5 concludes by outlining the full account of sensibility that emerges from my interpretation of Kant. Mathematical knowledge of the infinite and sense perception are both paradigmatic instances of sensibility because both represent contents that discursive human thought can accommodate but not generate – because both exhibit the givenness of content proper to sensibility. I proceed to explain how the fundamental criteria of sensible representation are grounded in distinct, *a priori* reflections on apperceptively available, constitute features of potentially knowledgeable thought. (i) Givenness to cognition arises from the object-directed character of all knowledge; (ii) receptivity from the fact that mere acts of spontaneous thought do not, of themselves, amount to knowledge; (iii) affection-dependence (sensibility) from the self-conscious finitude of our perspective on the world and the fact that such a perspective is, for us humans, realized in a spatial framework of potential causal interaction; (iv) immediacy of reference from the fact that discursively mediated representations do not differentiate existing objects from merely possible ones; (v) manifoldness (in multiple respects) from the fact that the object-directedness of knowledge requires intuitions to be capable of (dis)confirming discursive judgments, which exhibit various forms of intrinsic complexity in their categorically articulation; (vi) infinite quantitative manifoldness from the need for intuition to necessarily be capable of con-

firming universal judgments, whose concepts may be instantiated arbitrarily many times, (vii) holistic articulation from the self-conscious partiality of any finite perspective on the knowable world and as well as reflections on the composition of the continuum, (viii) singularity from the essential unity implicit in such a holistically articulated structure of nested finite perspectives, (ix) compositionality as a topological feature of such nesting of perspectives, (x) mereological structure as a more determinate form of compositionality, (xi) particularity as the rich form of singularity emergent on (v)-(x), and (xii) spatiotemporality as the empirically demonstrable *de facto* form of human intuition.