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On the Ruins of Babel

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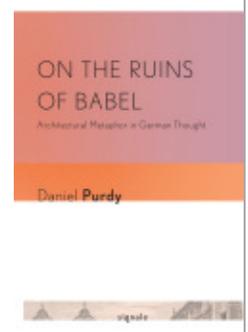
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How Much Architecture Is in Kant's Architectonic of Pure Reason?

Kant defines the architectonic as the art of philosophical systems.¹ Classical architectural theory, we will show in this chapter, provided Kant with a precise terminology to depict that thought that organizes experience. Unlike the a priori categories, which make possible our comprehension of physical sensations, the ideas that shape architectonics are consciously chosen by philosophy. They do not have the same conditioning function as the categories. The architectonic idea stands outside scientific discourse, but this does not mean that it operates prior to our understanding of the world; rather, it is a last step in a long chain of critical reflection about empirical reality. Kant emphasizes that the architectonic is associated with the highest level of reflection about experience. The architectonic entails the arrangement of sensory data according to a method. The “architectural” quality of system building consists in shaping and designing knowledge according to an idea that was not generated by any individual science but instead is derived from an examination of human existence in its entirety. Architecture provides a

1. Kant phrases the sentence according to the philosophical convention of providing a definition. Leibniz follows a similar formulation when he commences to explain his understanding of “analysis”: “Aside from the wit one has from nature or acquired through exercise, there is another art for finding mediating ideas and that is the art of analysis.” G. W. Leibniz, *Neue Abhandlungen über den menschlichen Verstand*, in *Philosophische Schriften*, ed. Wolf von Engelhardt and Hans Heinz Holz (Frankfurt: Suhrkamp, 1985), 3.2: 253.

technology and a metaphor for the always expanding problem of how to process the vast information generated by the sciences.² Among the many implications of Kant's architectonic, it offers a method of data storage and retrieval that supplants the older *ars memorativa*.

The previous chapter linked the stylized metaphors that appear in the prefaces to Kant's *Critique of Pure Reason* with the long history of philosophical borrowings from architecture. The current chapter will discuss metaphors as technical jargon. We will enter into the specific applications of architectural procedure in Kant's arguments. The previous chapter presented a selected history of the building trope; we will now show its operation in Kant's system. This division between Kant's metaphors and his technical language is not meant to reinforce the old prejudice that serious philosophy is never found in the rhetorical prefaces of major works, but only in its internal arguments. Quite to the contrary, we will argue that the architectural figures that characterize the system from the outside permeate its interior as well.

The architectonic is Kant's critical response to the cosmological speculation of his early writing. Whereas once God might have been seen as the architect who designed the universe, Kant argues that philosophy is now responsible for arranging knowledge according to a purpose that arises from its own investigations. The architectonic participates in the tradition that humans form a second creation, which stands apart from and, by the eighteenth century, competes with the divine. Without Promethean fanfare, the architectonic stands in for the creator of the teleological proof. Kant proposes the architectonic as a scientific evaluation of information, the last instance of reflection about the conditions and ends of knowledge, operating outside the work of most direct scientific investigation with the end of arranging knowledge according to human values, or, as Kant refers to them, Ideas.

Kant incorporates architecture and natural sciences into a larger, more abstract understanding of the process wherein rational thought arranges information. It is well understood that the natural sciences are important models for Kant's epistemology. Kant sees the history of science as a movement of expanding and ever more certain knowledge. Natural scientists, as opposed to metaphysicians, develop standards of knowledge, which are generally acceptable, thereby allowing universal agreement on certain theories. Kant maintains that the sciences have made advances in knowledge with much greater certainty than metaphysics. Whereas Kant may have understood the history of science as progressive, just as important was the self-organization that rational thought underwent as it examined its own data. This critical turn in thought, to "survey" or "oversee" its own contents, was not

2. Claus Zittel, "Mirabilis scientiae fundamenta: Die Philosophie des jungen Descartes (1619–1628)," in *Seelenmaschinen: Gattungstradition, Funktionen und Leistungsgrenzen der Mnemotechniken vom späten Mittelalter bis zum Beginn der Moderne*, ed. Jörg Jochen Berns and Wolfgang Neuber (Vienna: Böhlau, 2000), 335.

unique to the scientific methods of Kant's era. Architecture as taught in the classical texts also emphasized the need to integrate diverse practices and knowledge. The system of systems entails the unity of diverse knowledge under the roof of a single idea, which stands apart from the individual sciences, and which organizes them for a purpose, a *Zweck*, that lies beyond the mere cataloging of knowledge. Kant distinguishes between ideas, which guide an individual science, and the Idea, which motivates the architectonic arrangement of all sciences together. At its highest degree of articulation, just at the point where rational thought is most careful in examining itself, Kant expects scientific reflection to evaluate how all the different systems of knowledge serve human existence.

While Kant borrowed concepts from classical and Renaissance architectural treatises, his reformulation of these terms was in turn reintegrated into eighteenth-century architectural discourse.³ In the debate over the need for an architectural academy in Berlin, the founders adopted a distinctly Kantian tone in legitimizing their institution. In his essay "Some Thoughts on the Necessity of Endeavoring to Unify the Various Departments of Architecture in Both Theory and Practice," Friedrich Gilly applies Kant's architectonic perspective within his own discipline. Gilly opens by stating that it is no longer possible for a single architect to master all the knowledge of his profession: "So vast is the range of the several arts and sciences, and so numerous are the fields of action that they encompass, that practitioners, mindful of their own limitations, must for their own sakes restrict themselves to one or another aspect of their chosen subject."⁴ Specialization was inevitable given the expansion of the various architectural subfields. Using metaphors already familiar to architects, Gilly argues for a critical integration of these specialized fields: "They may nevertheless, on occasion, profitably adopt a more elevated vantage point and survey the whole, of which their own work is a part, and which endows that work with its characteristic form and purpose."⁵ To Prussian intellectuals at the end of

3. One immediate source for Kant would have been the writings of Francesco Algarotti, the Italian architect, who sojourned at the court of Frederick the Great, and who reiterated a Vitruvian understanding of architecture as the elevated discipline that integrates all others within its design: "Architecture belongs to another order than poetry, painting, and music, all of which have beauty before them. Architecture does not. They need merely keep their eyes open, so as to view the things around them and develop from them a system of imitation. Architecture has to move the spirit upwards and formulate a system based on general concepts that are not visible to the eye. One can say with justice that architecture is to the arts what metaphysics is to the sciences." Francesco Algarotti, *Versuche über die Architektur, Mahlerey und musicalische Opera*, trans. R. E. Raspe (Cassel: Johann Friedrich Hemmerde, 1769), 17. Algarotti proposes that at the most abstract elevation architecture and metaphysics were smoothly compatible because both endeavored to arrange diverse components into a single order. His defense of the Renaissance stands against the sentimental taste that judged buildings emotionally. Within the shifting contours of eighteenth-century architectural discourse, Kant leaned toward this Renaissance lineage, as much for its formal rationality as for its insistence on methodical engineering.

4. Friedrich Gilly, "Some Thoughts on the Necessity of Endeavoring to Unify the Various Departments of Architecture in Both Theory and Practice," in *Essays on Architecture*, trans. David Britt (Santa Monica: Getty Center for the History of the Art and the Humanities, 1994), 165.

5. *Ibid.*

the eighteenth century, this single vantage point would clearly have been Kantian. While Gilly argued for the establishment of an academy, his argument holds out the possibility that a single individual might master all the fields that the academy taught. For eighteenth-century architects, from Laugier to Gilly, the architectonic vantage point might be assumed by a creative genius, who redefines the field. This supreme perspective has tantalized modern architects ever since. Kant's own epistemological renunciation of any personal claim to architectonic knowledge aside, the possibility that one architect might hold the godlike position of integrating all disciplines within one plan has proven very tempting to the profession.

Articulated Thought; or, The Difference between Worms and Animals

The *Critique of Pure Reason* makes explicit an architectural distinction that appears at several key points in Kant's argument, namely, the difference between the accumulation of material and the articulation of knowledge. Kant returns to this opposition at several important points in the *Critique of Pure Reason*. In many ways it explains his understanding of reason (*Vernunft*) as *nachdenken*, that is, as a reflection that rearranges existing knowledge into a more complex unity.⁶ The distinction allows Kant to show how the writing and rewriting of knowledge lead to its systemization. By tracing its sources and implications, we will show the importance of architecture theory for German thought at the end of the eighteenth century. At the same time we hope to isolate turns of thought that distinguish the eighteenth-century German discussion of *Bildung* while connecting it with earlier efforts to encapsulate antiquity in art. Architecture is a natural medium for defining the literary movement known as German classicism, for even if the Napoleonic wars retarded construction projects in central Europe, the encounter with Roman antiquities was decisive in the formulation of a philosophical and literary program.⁷

Articulation entails a turning of thought back on itself in order to (re)place elements in a distributed relation. To be articulate as a speaker requires that one have the balance and order proper to rhetoric, a science that shares or rather lends many terms to architecture, whether in the ancient or in the deconstructive tradition. A politician must weigh his words as much as an engineer his materials. Both

6. As he describes how reason inevitably searches for answers to metaphysical questions, Kant inserts *nachdenken* almost as an afterthought, yet his entire procedure, in the *Critique* and through his long writing career, entails a rethinking of what has been thought: "Daher hat die menschliche Vernunft seitdem, daß sie gedacht, oder vielmehr nachgedacht hat, niemals einer Metaphysik entbehren... können" [A842/B870].

7. On the difficulties of defining German classicism, see Dieter Borchmeyer, "What Is Classicism?" in *The Literature of Weimar Classicism*, ed. Simon Richter (Rochester, NY: Camden House, 2005), 45–61.

public speaking and building require reflection on a plan before proceeding, or thinking back over a problem before beginning to solve it. Kant's use of the term "articulation" combines both senses of *nachdenken*: thinking after the fact so as to plan something out in advance. One means of coupling these two, seemingly contradictory gestures is to understand them as part of a continuous learning process. This movement of thinking back on a question in order to plan out a new answer amounts to a rewriting of past efforts in order to start anew. Both Descartes and Kant link this process of thinking with the architect's preparations before building. Certainly Alberti and Palladio emphasize the importance of studying ancient ruins in order to develop new buildings. The journey to Rome belonged to the *nachdenken* of any Renaissance architect, out of which new plans were made. Imitation was not so much the goal as the critical examination and evaluation of how buildings had been put together so as to discover what had made them stand so long, what had made them fall apart, and why they were beautiful. For Kant, as well as Goethe, reflection before articulation was part of the long-term education of the intellectual. Kant's renewed efforts to answer metaphysical questions are summarized as *nachdenken* in order to compose a new plan. The articulation of thought entails renovating existing knowledge, rather than tearing down and rebuilding its foundations as Descartes might. Both Kant and Goethe describe the need to revise the design of their thought rather than to dismantle it. At middle age amid Roman ruins, Goethe describes himself as an architect intent on rearticulating all the characteristics he has accumulated over his life. The turn toward articulation in German thought at the end of the eighteenth century constitutes a methodological alternative to Descartes' sweeping away of the ancient. Even when he recounts the collapse of metaphysics, Kant suggests a more cautious reconstruction.

The architectonic in the *Critique of Pure Reason* explains the value and purpose of composing knowledge as a unity. Kant does not claim that any one would actually possess complete knowledge. He separates the architectonic concern for establishing relationships between disciplines from an encyclopedic desire to know all. In a sense the architectonic section of the *Critique* seeks to explain the rationale for arranging knowledge as a whole. It tells why a plan for indexing and reflecting upon knowledge is necessary, without making explicit the reasons for doing so. Susan Bernstein uses Deleuze's suggestive image of the *pli* to describe articulation as the turn of thought to consider its own material. She observes that the architectonic "marks a fold between induction and deduction, between the technical or rhapsodic gathering of the historical and its recasting as a necessary systems of relations."⁸ Bernstein directly links Kant's architectonic with Goethe's notion of *Bildung* as the slowly unfolding organization of the self-conscious subject.

8. Susan Bernstein, "Goethe's Architectonic *Bildung* and Buildings in Classical Weimar," *MLN* 114.5 (1999): 1014.

Her reading then goes on to question the aesthetic ideologies inherent in both the architectonic and *Bildung*.

One who is resistant to metaphysics may wonder: Why even speculate on how one science relates to another? What is the point of ordering the sciences in the first place? One might suspect that Kant is here reviving an older cosmological (perhaps Leibnizian) architectonic, which posits a harmonious order to the universe created by God. "Architectonic" sounds like a reinvention of older metaphysical thinking: it seems to engage in cosmological speculation about how the universe hangs together. Kant is clearly drawn to such accounts; he often describes how reason (at various levels of his argument) seeks to explain the unity of all experience. The term's previous applications by Gottfried Leibniz and Alexander Baumgarten asserted a universal harmony. A patient reading will show that Kant rearticulates the term, so that by the time he arrives at his conclusion, he has turned the architectonic away from cosmology and toward an ethical, humanist form of pre-Socratic (and early Socratic) *Lebensphilosophie*. Ultimately, Kant will argue that the unity of knowledge enables the individual to critically examine existence. Kant will posit that the sciences should be conceived as a whole so that they may serve humanity. This turn from the widest, most systematic understanding of knowledge to the *Lebensphilosophie* of early Greek thinkers is the *Critique's* last articulation. The system distinguishes Kant's ethics of knowledge from an array of good intentions. Kant does not elaborate on this last Socratic turn in his argument. As happens in the last sections of the *Critique*, one senses that Kant is quickly sketching out an argument that could take much longer if it had been given the attention that, say, the deduction of the categories received. Still, an unusual connection between systematic thought and moral philosophy appears in the last pages of the architectonic section. In order to understand how Kant turns an ontological principle toward an existential end, we need to recognize the sympathies between his architectonic and ancient theories about building and the education of the architect.

Kant's description of the organic unity of a system of knowledge compares readily with the Vitruvian and Renaissance definitions of a well-proportioned, symmetrically arranged, and thoroughly integrated building. Kant's architectonic combines Vitruvius's long list of faculties required for the architect's education with the organic model of organization. He makes an abstract systematic principle out of Michelangelo's equation of anatomy and architectural education: "There is no question but that architectural members reflect the members of Man, and whoever has not been or is not a good master of the (human) figure and likewise of anatomy cannot understand (anything of them)."⁹ Without espousing the existence of a cosmological order, Kant took the step of presuming that all knowledge could be organized anatomically through rational thought. By presuming a unity, Kant

9. Quoted in James Ackerman, "Architectural Practice in the Italian Renaissance," *Journal of the Society of Architectural Historians* 13.3 (1954): 3.

postulates that is possible to recognize if some piece is missing from the whole.¹⁰ This unity is articulated (*gegliedert*) in contrast to accumulated knowledge, which Kant refers to as *gehäuft*, literally meaning “piled up.” Vitruvius explains that orderly arrangement begins by treating individual members separately and then placing them in a proportioned whole.¹¹ In the preface to his fourth book, he cites his own treatise as a “corpus” that brings together the scattered and disordered bits of architectural knowledge the ancient world possessed:

I have observed, Emperor, that many in their treatises and volumes of commentaries on architecture have not presented the subject with well-ordered completeness, but have merely made a beginning and left, as it were, only desultory fragments. I have therefore thought that it would be a worthy and very useful thing to reduce the whole of this great art to a complete and orderly form of presentation, and then in different books to lay down and explain the required characteristics of different departments.¹²

Indra Kagis McEwen has pointed out that Vitruvius is the first Roman writer to insist that his writing constituted a “body” of knowledge.¹³ Cicero, for example, uses *corpus* to refer to the body politic, whereas Vitruvius repeatedly uses it in reference to the collection of written knowledge.¹⁴ Given Vitruvius's expectation that the architect learn many arts, and given his elaborate discussion of the relation between the human body and the arrangement of buildings, it is not surprising that readers for centuries also applied his organic architectural metaphors to the organization of all knowledge. Cesare Cesariano's first Italian translation includes a commentary that compares the arrangement of Vitruvius's ten books to the human body. Whereas Vitruvius refers to the Latin “ordina” when describing the arrangement of treatises, buildings, and bodies, Cesariano's commentary refers to “membriculi Articularii,” suggesting the complex body that appears in Kant's text.¹⁵

As we will argue later, the architectonic of the first *Critique* extends Vitruvius's plan for systematizing his own discipline. While Vitruvius is concerned with elegance and “appropriateness,” Kant, we shall see, expects an epistemological and moral purpose from the careful arrangement of scientific knowledge. He does not

10. Kant, *Kritik der reinen Vernunft*, 653 [A833/B861].

11. Vitruvius, *The Ten Books on Architecture*, trans. Morris Hicky Morgan (New York: Dover, 1960), 13.

12. *Ibid.*, 101.

13. Indra Kagis McEwen, *Vitruvius: Writing the Body of Architecture* (Cambridge, MA: MIT Press, 2003), 7–10.

14. Klaus Sallmann compares Vitruvius's books to a ring of columns that together support a great load. He argues that Vitruvius does not take up Horace's idea of *humanitas*. Klaus Sallmann, “Bildungsvorgaben des Fachschriftstellers: Bemerkungen zur Pädagogik Vutruvs,” in *Vitruv-Kolloquium*, ed. Heiner Knell and Burkhardt Wesenberg (Darmstadt: Deutscher Archäologen-Verband, 1984), 18.

15. Cesare Cesariano, *Vitruvius, De architectura* (1521) (Munich: Wilhelm Fink, 1969), LXI.

emphasis the beauty of systematic knowledge, even though the classical tradition does. Vitruvius most famously cites the human body as the example of symmetrical proportion: "In the human body there is a kind of symmetrical harmony between forearm, foot, palm, finger and other small parts; and so it is with perfect buildings."¹⁶ Kant also invokes a bodily metaphor to describe the systematic organization of knowledge: "[It is] like an animal body, the growth of which is not by the addition of a new member, but by the rendering of each member, without change of proportion, stronger and more effective for its purposes."¹⁷ However, Kant's analogy is situated within a natural historical framework concerned with the growth of individual bodies and the advancement of species; thus he distinguishes between sophisticated bodies possessing articulated organs and simpler organisms, such as worms. The difference between an animal and a worm reinforces the distinction between articulated thought, which distributes knowledge across the many subdivisions of a philosophical system, and accumulated knowledge, which merely collects data, adding it to the body of already existing information without any effort at order.

Kant's adaptation of the Vitruvian analogy shows that much as the classical tradition continuously reapplied the body metaphor for unity, each iteration revealed the altering biological conception of an organism. The historical development of science, particularly biology, meant that each time bodies are mapped onto buildings the definition of the "body" had changed. Far from constituting a fixed analogy, the many evocations of the body/building relation shift with the history of the two terms.¹⁸ The body is conceived differently; it is divided up according to new criteria, grasped by new categories, perceived according to varying agendas. Sometimes it is human, as in Vitruvius; other times it is placed within broader taxonomies. Gender becomes an explicit factor for the orders of columns, as Vitruvius clearly presumes a male form when presenting his initial comparison.

Kant's organic model is much more abstract than Vitruvius's. The Roman focuses on specific parts in order to meld an idealized male body with geometry. For Vitruvius, the correlation between building and body is carried out by geometrical comparisons. A circle and a square are the middle terms in the analogy:

For if a man be placed flat on his back, with his hands and feet extended, and a pair of compasses centered at his navel, the fingers and toes of his two hands and feet will

16. Vitruvius, *Ten Books on Architecture*, 14.

17. Immanuel Kant, *Critique of Pure Reason*, trans. Norman Kemp Smith (New York: St. Martin's Press, 1965), 653–654; Kant, *Kritik der reinen Vernunft*, ed. Jens Timmermann (Hamburg: Felix Meiner, 1998), 861 [A833/B861].

18. For Kant's incorporation of the epigenesis theory of reproduction into the first *Critique*, see John Zammito, "This inscrutable *principle* of an original *organization*: Epigenesis and 'looseness of fit' in Kant's Philosophy of Science," *Studies in History and Philosophy of Science* 34 (2004): 73–109; and Helmut Müller-Sievers, *Self-Generation: Biology, Philosophy, and Literature around 1800* (Stanford, CA: Stanford University Press, 1997), 48–64.

touch the circumference of a circle described therefrom. And just as the human body yields a circular outline, so too a square figure may be found from it. For if we measure the distance from the soles of the feet to the top of the head, and then apply that measure to the outstretched arms, the breadth will be found to be the same as the height, as in the case of plane surfaces which are perfectly square.¹⁹

Vitruvius's famous placement of the male figure within geometry was critically reformulated in the first modern architectural treatise, Alberti's *On the Art of Building*.²⁰ Alberti wrote in large part to rectify the errors and omissions he perceived in Vitruvius.²¹ He shifted away from the idealized male body as the model for all construction. In order to legitimate his own expanded correlation between bodies and buildings, Alberti claims that the ancients did more than study one body type; they considered all shapes.²² With some irony, he credits "the ancients" with doing precisely what Vitruvius did not. Alberti's treatise is followed by more intense investigations of human anatomy as it related to building design. Alina Payne summarizes the importance of anatomy for Renaissance architecture: "The growing scientification of the human body—its analysis and display as a section through a building, layer by layer, mobile joint by mobile joint—had brought about an abstract conception of its parts and their role in the functioning of the whole that permitted leaps into the world of moments and construction."²³ The Venetian architect Vincenzo Scamozzi, for example, gives considerable anatomical detail to his rendition of the familiar analogy:

The section of the well-proportioned building is like the anatomy of a human body. As in the latter one can see the connection between bones, the linkages of the nerves,

19. Vitruvius, *Ten Books on Architecture*, 73.

20. Two recent studies on Alberti's relation to Vitruvius begin by discussing the modern writer's frustration in understanding passages of the ancient text: Hartmut Baumann, "Die Aufbauprinzipien von L. B. Albertis De re aedificatoria," *Zeitschrift für Kunstgeschichte* 53.4 (1990): 444–446; Caroline van Eck, "The Structure of 'De re aedificatoria' Reconsidered," *Journal of the Society of Architectural Historians* 57.3 (1998): 280–281.

21. Alberti's frustrations are expressed most in the opening to his book 6, where he describes the Roman as "an author of unquestioned experience, though one whose writings have been so corrupted by time that there are many omissions and many shortcomings. What he handed down was in any case not refined, and his speech such that Latins might think that he wanted to appear a Greek, while the Greeks would think that he babbled Latin. However his very text is evidence that he wrote neither Latin nor Greek, so that as far as we are concerned he might just as well not have written at all, rather than write something that we cannot understand." Leon Battista Alberti, *On the Art of Building in Ten Books*, trans. Joseph Rykwert, Neil Leach, and Robert Tavernor (Cambridge, MA: MIT Press, 1988), 154.

22. "By studying in Nature the patterns both for whole bodies and for their individual parts, they understood that at their very origins bodies do not consist of equal portions, with the result that some are slender, some fat, and others in between; and observing the great difference in purpose and intention between one building and another . . . they concluded that, by the same token, each should be treated differently." Alberti, *On the Art of Building*, 303.

23. Alina Payne, *The Architectural Treatise in the Italian Renaissance: Architectural Invention, Ornament, and Literary Culture* (Cambridge: Cambridge University Press, 1999), 211.

and the intersection of the veins, with the covering of soft tissue; so in the former one can see the trimming of the columns, and walls, the interlocking of the cornices, the entwining of those things that ornament, and finally the shells that cover the internal parts.²⁴

Kant does not focus on anatomical details except as a basis for distinguishing species from one another. Yet at each stage in the history of the Vitruvian metaphor, the principle of unity is upheld over any disorder. The Renaissance inclusion of anatomy could easily have undone the classical model. If one were to use the interior of bodies to supplement Vitruvius's focus on the face and limbs, all sorts of nonsymmetrical shapes might be introduced. The organs, as well as the muscles and nerves, are not as beautifully balanced as a statue of Apollo. The compactly folded-up string of tubing that makes up the intestines does not conform to the Vitruvian system. Guts have more in common with contemporary, anticlassical blob buildings. Each adaptation of the Vitruvian model demonstrates a commitment to preserve the principle of unity even as it is reiterated within a new scientific context. When Kant includes comparative anatomy in his organic model, he adjusts the classical statement by setting the articulate body against the accumulative and by evaluating the internal organization of these bodies on the basis of how they allow for their own growth. He does not, however, abandon the presumption that bodies are wholes.

While geometry is certainly important to Kant as a method of demonstrating conceptual relations, he does not, however, apply its terms to the organic unity. Overall, the tendency was to use the body/building analogy in such a manner that the body was represented as a living entity, capable of movement and development. The symmetrical relations of the face and limbs are decisive for Vitruvius, whereas Alberti adapted the body/building analogy to focus more on their activity. He credits the Romans with studying the organization of bodies in order to understand their practical use. This economical approach meant that animals as well as humans became the model for construction.²⁵ Alberti's inclusion of animals within architectural discourse may not have been followed by later Italian writers; however, his anatomical interest was. The internal arrangement of vertebrates seemed to confirm and expand Vitruvius's original comparison. Alberti would focus on specific features, such as the connection of muscle tissue to bones as a guide for building roof trusses.²⁶ Kant, in turn, concentrates on the internal relation of organs as they shape the growth of the body.

24. Quoted in Payne, *Architectural Treatise*, 233–234.

25. Alberti, *On the Art of Building*, 158: "As for Italy, their inborn thrift prompted them to be the first who made their buildings very like animals. Take the case of the horse: they realized that where the shape of each member looked suitable for a particular use, so the whole animal itself would work well in that use."

26. Alberti, *On the Art of Building*, 81.

Most notably, by comparing the accumulation of knowledge internal to a system with the elongation of worms or snakes (*Gewürme*), Kant suggests not only a biological metaphor that lacks the capacity for self-awareness and reflection, but also a creature loaded with Christian imagery. In Luther's translation of the Bible the worm and all creatures like it are the lowest living form listed in Genesis 1:26. The eighteenth-century poetry continued to juxtapose humans and worms. In his unfinished poem on eternity, Kant's favorite poet, Albrecht von Haller, represents the mathematical sublime of endlessness with the wormlike size of the human:

O culmination of greatness!
 What is the person who compares himself to you!
 He is a worm, a sand pebble in the world;
 The world itself is but a point when I measure it against you.

Vollkommenheit der Größe!
 Was ist der Mensch, der gegen dich sich halt!
 Er ist ein Wurm, ein Sandkorn in der Welt;
 Die Welt ist selbst ein Punkt, wann ich an dir sie messe.²⁷

Goethe's *Faust* reiterates the comparison, though more in despair than in glorification:

The gods I don't resemble! Too deep is the feeling!
 The worm I resemble, who crawls through the dust.

Den Göttern gleich' ich nicht! Zu tief ist es gefühlt!
 Dem Wurme gleich' ich, der den Staub durchwühlt. (line 652)

Within earlier architectural theory, the figure of the worm is mentioned without cosmological grandeur to indicate architectural failure, as in a wall that lacks geometrical precision. Alberti asks:

Who would not rebuke severely a person who, unconstrained by circumstance, built a wall that wandered like a worm, now here, now there with no order, no method, with some sections long and some short, the angles unequal and the composition unshapely, especially if the *area* is obtuse on one side and acute on the other, its method confused, the order disturbed, without forethought or careful plan?²⁸

27. Albrecht von Haller, "Unvollkommenes Gedicht über die Ewigkeit," in *Deutsche Dichtung im 18. Jahrhundert*, ed. Adalbert Elschenbroich (Munich: Carl Hanser, 1960), 33.

28. Alberti, *One the Art of Building*, 311.

Particularly important as far as Kant is concerned are Alberti's last critical comments; the "worming" wall demonstrates a confused method, a disturbed order, a lack of plan or forethought.

Christo draped fabric over buildings or stretched it across landscapes to create just the disordered look Alberti disparaged. The worm, furthermore, is a figure that we can connect to Greg Lynn's theorization of the fold as it stands in opposition to the organic body. When Lynn cites the flatworm as an alternative to the organic paradigm, he is invoking Deleuze and Guattari's "body without organs," reversing Kant's preference for articulation over accumulation. The flatworm, or planarian, when cut into pieces, can regenerate into multiple bodies that are nevertheless not symmetrical replications of the original. For Lynn the flatworm represents the possibility that a single body might proliferate variations of itself that do not automatically imitate the form from which they sprang.²⁹ Kant includes just such shapeless proliferation within his theorization of accumulation, for the regenerative quality that Lynn cites in the planarian caused a sensation when it was first recognized in 1740 with Abraham Trembly's discovery of the polyp. Kant was familiar with the strange shapes into which polyps reproduced themselves asexually. In the *Critique of Judgment*, he suggests that polyps are the lowest form in a hierarchy of comparative anatomy.³⁰ Kant's worm does not completely correspond to Lynn's characterization of the fold, for Kant argues that the worm is incapable of incorporating differences. While contemporary theory celebrates Leibnizian fabrics, Kant understood his predecessor's metaphysics as a failed system, which could not be reconciled with Newtonian physics.

While Kant's terms are explicitly biological, the theory of the articulated body was already explicit in fifteenth-century Italian accounts of the perfect structure. Alberti writes extensively about the need to divide the whole building into compartments so that each may be examined individually both in terms of its particular utility and its position within the whole plan. That Kant's account matches Alberti should come as no surprise. Kant was well read in the Latin classics and would probably have found Alberti's treatise more accessible than later Italian works. Alberti, unlike Vitruvius, stresses the need to articulate components, thereby providing a more abstract standard for integration. Alberti links compartment to the Vitruvian terms *firmitas*, *commodus*, and *venustas*; however, his own comparisons with animal bodies later in the text suggest the term could be applied more broadly:

All the power of invention, all the skill and experience in the art of building, are called upon in compartment; compartment alone divides up the whole building into the parts

29. Greg Lynn, "Multiplicities and Inorganic Bodies," in *Folds, Bodies, and Blobs: Collected Essays* (Brussels: La Lettre Volée, 2004), 44–45.

30. Immanuel Kant, *Critique of Judgment*, trans. J. H. Bernard (New York: Hafner Press, 1951), §80, p. 208.

by which it is articulated, and integrates its every part by composing all the lines and angles into a single, harmonious work that respects utility, dignity and delight.³¹

By dividing the plan into parts, Alberti argues, one can decide whether any one could be left out without damaging the whole:

Could anything be omitted from any of these, through inattention and neglect, without detracting from the dignity and worth of the work? The greatest care and attention, then, should be paid to studying these elements, which contribute to the whole work, so as to ensure that even the most insignificant parts appear to have been formed according to the rules of art.³²

What for Alberti are standards for planning a building become for Kant the criteria for judging the coherence of a system of knowledge. Behind the art of system building lies the art of building.

The questions of how to define proportion and what its absence meant to the beauty of a building were highly refined by the eighteenth century. Proponents of French classicism, for example, had already at the end of the seventeenth century accused Roman baroque structures of lacking a clearly defined order in which the elements can be recognized. Such buildings were said to depart from ancient forms. According to the valences of classical discourse, the opposite of proportion was a *pile*, a mass of stone without shape. Eventually, Heinrich Wölfflin would make this late classicist slur into the basis of his epochal history. He remarks: "This very antipathy to any form with a clear contour is perhaps the most basic trait of the baroque style."³³ The rhetoric of antithesis characterized buildings with a high degree of architectural intention as mere piles of stone. François Blondel, in his *Cours d'architecture*, denounced Bernini's colonnade for St. Peter's as "an unformed mass of columns without arrangement." Walter Kambartel, in 1972, translated the French "un amas informe de Colonnes sans arrangement" into a German that Kant would have used as well: "einen unförmigen Haufen von Säulen ohne Arrangement."³⁴ Kant himself uses the term *Haufen* to describe the mere accumulation or piling on of empirical impressions in much the same manner that Blondel accuses Bernini of simply having layered columns around the plaza of St. Peter's. André Felibien similarly refers to misproportioned buildings as a "confused mass": "Nous voyons des bâtimens qui ne

31. Alberti, *On the Art of Building*, 23.

32. *Ibid.*

33. Heinrich Wölfflin, *Renaissance and Baroque*, trans. Kathrin Simon (Ithaca, NY: Cornell University Press, 1964), 64.

34. Walter Kambartel, *Symmetrie und Schönheit: Über mögliche Voraussetzungen des neueren Kunstbewußtseins in der Architekturtheorie Claude Perraults* (Munich: Wilhelm Fink, 1972), 21.

sont qu'un amas confus de corps avances & arriere-corps."³⁵ The classicist tendency to attack Bernini, a habit that Goethe and K. P. Moritz adopted as well, is less important for understanding Kant's architectural thinking than the manner in which neoclassical architectural theory defined its antithesis: all structures that did not have an articulated proportion were characterized as a mere chaotic mass. Eighteenth-century Germans knew *Haufen* from Luther's Bible to mean "a huge pile of stones," or "a chaotic crowd."³⁶ By lumping anything that was not strictly proportioned into a single broad category, the classical discourse enacted the judgment it made against other styles.³⁷ All things unproportioned were placed together, regardless of their particular style, that is, disproportionate proportions. Thus both baroque and Gothic buildings could be subsumed under the same category as confused masses.

Kant's appropriation of the distinction between an articulated structure and a pile did not focus on such stylistic debates. Instead, he used the architectural opposition between a well-defined arrangement and a mere mass to stress the importance of making critical distinctions. Rather than marking one's adherence to an ancient canon of thought, the *Critique of Pure Reason* repeatedly insisted on the epistemological principle that empirical impressions needed to be arranged according to some overarching principle if they were to be understood as knowledge. The neoclassical concern for proportion as a matter of balance and symmetry was not itself important for the *Critique*. Kant refunctionalizes architectural terms such as "proportion," "symmetry," and "eurythmy" by using the more general term "articulation." The canonical terms are uncoupled, subsumed, and abstracted under a new organizing principle. To be sure, at various points, Kant still displays an interest in symmetry for its own sake, yet we should not confuse the arrangement of the book with Kant's argument concerning the art of system building. While there may be a lopsided symmetry in the *Critique's* contents, the art of system building does not concern itself with symmetry. Kant's transcendental method focuses on the rational process that underlies any proportioned structure, namely, the act of arranging material according to some Idea. Symmetry as it was debated among architects would have been understood by Kant as the arrangement of building material according to an idea of the beautiful. The art of system building lies somewhere between the idea that provides the orientation for a system's structure and the material that constitutes the structure. So, for example, the gesture of creating a system requires

35. A. Felibien, *Entretiens sur les vies et les ouvrages des plus excellens peintres anciens et modernes avec la vie des architectes* (1666–1685), in the Trévoux edition (1725) I, p. 73; cited in Kambartel, *Symmetrie und Schönheit*, 26.

36. For a discussion of the theological implications of *Haufen* among Moravians and Pietists, see Julie Tomberlin Weber, "Translation as a Prism: Broadening the Spectrum of Eighteenth-Century Identity," in *Ethnographies and Exchanges, Native Americans, Moravians, and Catholics in Early Modern America*, ed. A. G. Roeber (University Park, PA: Penn State University Press, 2008), 200–203.

37. The Gothic Frankl follows Richard Krautheimer in ascribing this position to Alberti. Paul Frankl, *The Gothic: Literary Sources and Interpretation through Eight Centuries* (Princeton, NJ: Princeton University Press, 1960), 257.

both distance from the material and the capacity to arrange it according to critical thought. For Kant the architectonic consists in the critical distance of thought that rearranges the empirical impressions given to it by perception, just as an architect designs the materials available for construction. The antithesis of a system with its architectonic order remains the "pile" of sensory impressions. Kant's rearticulation of the architectural discourse amounts to an expansion of terms used in more tightly focused debates between Italian baroque and French classicism in which hyperbolic distinctions are deployed against competing styles.

Kant follows the Renaissance presumption that a natural organism does not contain unnecessary organs.³⁸ Alberti had stressed that every compartment of a building needed to fit harmoniously, and Palladio followed this definition, though he more explicitly stated that every component had to be necessary to the whole.³⁹ Every component of a building is likewise justified by a purpose. When the architect is warned not to leave a crucial component out of his plans, this presumes that his tendency is to build simply, to include fewer elements rather than too many. Kant's architectonic would similarly test whether a science could be excluded without harm. This procedure of eliminating what is deemed unnecessary is only one of the ways in which architectural procedure is related to Kant's logical method.

Leibniz, who most likely coined the philosophical use of "architectonic," had a very different understanding of the term from Kant. When Kant states that reason is by nature architectonic, he presumably has Leibniz's claim of universal harmony in mind. Architectonic, in this context, refers to the tendency to recognize a pattern in natural phenomena. This cosmological habit is distinct from the architectonic Kant proposes as a methodological step at the end of the *Critique of Pure Reason*. The tendency to see all things in the universe as part of a master plan is distinctly at odds with Kant's intention to critically evaluate all systems of knowledge. Leibniz reverses Alberti's and Kant's procedure when he argues that God created the best possible universe. Rather than testing a plan to see if anything could be removed, Leibniz argues that we cannot conceive of any quality that the architect of the universe should have added in order to make the world more perfect: "I think that one acts imperfectly if he acts with less perfection than he is capable of. To show that an architect could have done better is to find fault with his work."⁴⁰ Contrary to the stripped-down functionalism of the organic body, Leibniz conceives imperfection as the failure to add what is needed. Both Alberti and Kant characterize imperfection as excess, as the inclusion of that which could be eliminated. Implicit then in any conception of

38. Wölfflin summarized Alberti: "The proportions of the whole and of the parts must be based on an underlying unity; none must appear accidental and each must follow from the other as a matter of necessity, as the only possible and natural one." Wölfflin, *Renaissance and Baroque*, 66.

39. Alina Payne traces the concept of *necessità* through the lineage of Renaissance treatises; see her *Architectural Treatise*, 184.

40. G. W. Leibniz, *Discourse on Metaphysics*, trans. George Montgomery (LaSalle, IL: Open Court Publishing, 1902), 5.

the natural body as a living entity is the presumption that only that which is required for staying alive matters, at least within nature. Excess ornamentation has for Alberti a monstrous quality—in the sense of a body with distended features: “The faults of ornament that must be avoided most of all are the same as those in works of Nature, anything that is distorted, stunted, excessive or deformed in any way. For in Nature they are condemned and thought monstrous, what would be said of the architect who composes the parts in an unseemly manner?”⁴¹ This conception of nature and the organism reinforces the classical concept of the ornament as unnecessary.

Kant considers the proportioned body in terms of its development, whereas Vitruvius presumes a static, ideal body. Kant does not confine his analogy to the human body, whereas Vitruvius presumably operates within the assumption that the human is the highest form. For Kant the implied hierarchy that the organic model inevitably draws does not exist between the human form and all others, but between complex organisms and simpler ones. As we have seen, Kant was by no means the first to adapt the analogy so as to include more than humans. Alberti had taken animal bodies generally as the natural template for architectural symmetry.⁴² Kant’s organic model is distinct from the Vitruvian because his presumes that bodies grow over time. The difference between the organism and the worm lies not only in their internal structural arrangement, but also in the manner in which both life-forms extend themselves: the organism distributes matter throughout its internal arrangement while the worm adds material on at the ends. The organism expands, whereas the worm lengthens.

Articulation versus accumulation is also a fundamental distinction in construction. In order for the symmetrical relation of a building’s parts to be possible, each element needs to be distinct, which means that it is positioned apart from, but in relation to, the other elements of the building. The worm comparison suggests a process of expansion in which new material is simply added onto the end, wherever there is space, rather than distributed throughout the body. Medieval cities were characterized as uncontrolled masses that expanded without organization. When rationalists criticized the layout of medieval cities, they pointed out that builders would simply add on to existing structures. We have already discussed why Descartes claimed that such cities were less attractive. Their twisting, turning alleys are an accumulation, unlike a city in which houses were built on a grid, which articulates boundaries between public and private spaces. The densely tangled layout of streets and buildings in Paris had long been a problem according to architects and public officials interested in regulating the populace. By the time Laugier wrote his essay in the middle of the eighteenth century, the confusion was a well-worn topic: “It would be tedious

41. Alberti, *On the Art of Building*, 311.

42. *Ibid.*, 303. Lisa Kanerva discusses Alberti’s many references to “animal-like buildings” in her *Defining the Architect in Fifteenth-Century Italy: Exemplary Architects in L. B. Alberti’s “De re aedificatoria”* (Helsinki: Suomalainen Tiedeakatemia, 1998), 122–127.

to revive here the distressed comments which the whole nation has been making for a long time about the chaos of hovels which completely hide the beautiful façade of the Louvre. It is to be hoped that one day the palace will be completed and that the buildings that crowd round the entrance and obstruct its approaches will then be razed to the ground.⁴³ In *Poetry and Truth*, Goethe also describes the common practice in old cities of expanding the upper floors of houses so that they hung over the ground floor, crowding and darkening the street below.⁴⁴ He describes in detail how his father undertook various "repairs" in order to expand the upper floors of the family house, thereby circumventing new restrictions on just such construction. This process of small alterations would result in a building with little overall coherence, no proportion or symmetry. Goethe describes his father as "little concerned with external architectonic appearance."⁴⁵ All these criticisms demonstrate a preference for self-conscious ordering, an aversion to the serpentine flow of the arabesque, and a blindness to the charms of haphazard accumulation, be they medieval or baroque.

While Goethe and Descartes connected architectonic order with beauty, and though Kant does not address aesthetics directly in the first *Critique*, his understanding of the integrated system does correspond to the classical definition of the beautiful building. When he defines the architectonic as the "art of the system," he is for one thing using the term in a rhetorical formula (the art of diplomacy, the art of noise, etc.). More importantly, though, the phrase shows how the debate over whether architecture was a science or an art framed Kant's work, for by defining the architectonic as the "Kunst der Systeme," Kant is really postulating an art that organizes the sciences. Architecture was the discipline in which it was most difficult to determine where the art began and the science left off. The architectonic amounted to the subtle turn in rational thought that moved from knowledge to aesthetics, a boundary that Kant guarded insistently in the *Critique of Judgment*, but which has been challenged by those who argue that Kant understates the role of imagination in both the first and the third *Critique*.⁴⁶ Even without such a critical reading of Kant, we should take the artistic character of systems very seriously. The tension between art and system is resolved only at the very end of the *Critique*, as a turn toward early Greek *Lebensphilosophie*.⁴⁷ Although he separates the two

43. Marc-Antoine Laugier, *An Essay on Architecture*, trans. Wolfgang Herrmann and Anni Herrmann (Los Angeles: Hennessey & Ingalls, 1977), 92.

44. "In Frankfurt, wie in mehreren alten Städten, hatte man bei Aufführung hölzerner Gebäude, um Platz zu gewinnen, sich erlaubt, nicht allein mit dem ersten, sondern auch mit den folgenden Stocken überzubauen; wodurch denn freilich besonders enge Straßen etwas Düsteres und Angstliches bekamen." Johann Wolfgang Goethe, *Dichtung und Wahrheit*, in *Werke*, ed. Erich Trunz and Hans Joachim Schrimpf (Munich: Beck, 1981), 9: 15. [*Werke* is cited hereafter as HA with volume number and page number.]

45. Goethe, *Dichtung und Wahrheit*, HA 9: 16.

46. Heidegger, for example, stresses the importance of the transcendental imagination within Kant's system. Martin Heidegger, *Kant und das Problem der Metaphysik* (Bonn: Friedrich Cohen, 1929), 120 ff.

47. Tassilo Eichberger prefers the Greek *techné* over the more specific eighteenth-century aesthetic sense of the term *Kunst*. Tassilo Eichberger, *Kants Architektur der Vernunft: Zur methodenleitenden Metaphorik der Kritik der reinen Vernunft* (Freiburg [Breisgau]: Alber, 1999), 42.

modes of judgment from one another in the *Critique of Judgment*, in the *Critique of Pure Reason* Kant posits an aesthetic form as the ideal organization of scientific knowledge. A system of knowledge, whether it be an individual discipline or the architectonic combination of them all, is best organized much like an autonomous work of art, as a unified organism with parts that serve the whole. That Kant refers to this unity as architectonic demonstrates the resonance of Renaissance theory and its desired unity of the sciences, the body, and art. Kant will address aesthetics in the *Critique of Judgment*, but already in the section on the architectonic of reason, we see Kant's presumption that art and the beautiful are organized systematically as an organic whole. The link between Kant, eighteenth-century aesthetics, and classical architecture becomes even more visible when we review sixteenth-century Italian definitions of beauty. Palladio states in the first chapter of his first book on architecture: "Beauty will result from the form and correspondence of the whole, with respect to the several parts, of the parts with regard to each other, and of these again to the whole; that the structure may appear an entire and complete body, wherein each member agrees with the other, and all are necessary to compose what you intend to form."⁴⁸ Palladio's definition has particular relevance to Kant's epistemology, for the former's description appears in the section entitled "Of the Several Particulars That Ought to Be Considered and Prepared before We Begin to Build." Just as Kant investigates the conditions for knowledge, so Palladio defines beauty before construction. It exists in the plan for the building, preceding whatever sensual pleasure the building will provide for its inhabitants and visitors. As Goethe will discover, the organically integrated beauty of a Palladian villa exists not only as a drawing but also as an abstraction, an exercise in contemplation. When Palladio makes the statement that beauty (*bellezza*) results from these plans, he is simply drawing out an ideal implicit within Alberti's assertion that the integrated building possesses dignity and grace. For both architects, there is much beauty in the thought of a building, even before the ground has been broken. This admiration for the plan alone links Kant's concept of the system with the more broadly discussed theories concerning the autonomous work of art. Kant's language of systems, in the *Critique of Judgment* and elsewhere, has much in common with eighteenth-century characterizations of the beautiful because it borrows directly from Renaissance architecture.

The Table of Categories

Kant hoped that readers would keep an image of the entire *Critique of Pure Reason* in mind as they proceeded through its many rooms. This concern becomes most tangible in his presentation of the a priori categories of the understanding. In "The Analytic of Concepts," he struggles with the question of how to build his

48. Andrea Palladio, *The Four Books of Architecture* (New York: Dover, 1965), 1.

own argument upon the ruins of older philosophical systems. As part of his answer, he once again invokes the distinction between accumulated and articulated knowledge. In the preface to the "Analytic," he starts by providing a new conceptual arena within which to deploy the distinction; however, as he proceeds into the body of his argument, he makes the highly unusual move of turning the articulation/accumulation distinction onto the material form of the text itself. Kant departs from the usual linear typeface of the book when he presents lists of logical judgments and categories in a geometrical shape. The three diamond-shaped lists provide a geometrical order, an articulation, that departs visually from the sequential, that is, accumulative, movement reading usually takes. The tables, literally and figuratively, break the linear flow of reading as they transform philosophical argument into a geometrical schema. Unlike modern concrete poetry, which gives visual shape to writing in order to disrupt the construction of meaning, Kant's recourse to geometry reinforces the architectonic form of transcendental philosophy through the visual presentation of words.⁴⁹ If, as Lessing argued in *Laokoon*, literature arranges meaning temporally as a succession of events, then the allure of architectural forms in literature would be the possibility that this sequential order would be reconfigured spatially. Angelika Corbineau-Hoffmann brings the question closer to Kant when she suggests that architecture holds out the possibility that writing might occupy a place that is not immediately conditioned by temporal movement.⁵⁰ The tables present a geometry of the text that replaces the sequence of reading. As they shape the words on the page, the tables demonstrate the abstract referential character of the writing. They emphasize that words refer to ideas, allowing the reader to contemplate the categories in spatial-visual terms common to architectural plans. Kant makes clear that these two-dimensional forms are themselves but a preparatory device for understanding the interaction of the categories as a three-dimensional sphere. This last step remains unrepresented, however; Kant leaves it to the reader to extrapolate the space of logical relations from diagrammatic lists of the a priori categories.

Just at one of the most complex stages of his argument, Kant turns to a visual mode of representing thought associated with architecture. He interrupts the flow of his prose to present several schematic plans of how the logical categories stand in relation to each other. Not only does he stop writing out his argument; he presents a succession of tables without much introduction. They appear rather suddenly on the page, as if they carried some argumentative weight of their own: the first, an organization of the different logical forms under which judgments are made; the second, a list of the categories that condition understanding.

49. Craig Saper, "The Music of Visual Poetry and Architecture," *Yearbook of Interdisciplinary Studies in the Fine Arts* 1 (1989): 159.

50. Angelika Corbineau-Hoffmann, "Architekturen der Vorstellung: Ansätze zu einer Geschichte architektonischer Motive in der Literatur," in *Architektur wie sie im Buche steht*, ed. Winfried Nerdinger (Munich: Architekturmuseum München; Verlag Pustet, 2007), 27–28.

The tables are presented here, in the Norman Kemp Smith translation. The Table of Judgements appears first.⁵¹ The Table of Categories appears a few pages later.⁵²

Table of Judgements

I. *Quantity of Judgements*

Universal
Particular
Singular

II. *Quality*
Affirmative
Negative
Infinite

III. *Relation*
Categorical
Hypothetical
Disjunctive

IV. *Modality*
Problematic
Assertoric
Apodeictic

Table of Categories

I. *Of Quantity*

Unity
Plurality
Totality

II. *Of Quality*
Reality
Negation
Limitation

III. *Of Relation*
Of Inherence and Subsistence
(*substantia et accidens*)
Of Causality and Dependence
(cause and effect)
Of Community (reciprocity
between agent and patient)

IV. *Of Modality*
Possibility—Impossibility
Existence—Non-existence
Necessity—Contingency

It is well worth considering why, at what many Kant scholars would call the center of his argument, Kant stops to present a list arranged in a particular visual order. Without a doubt, the implications of this section of the *Critique* for Kant's entire argument are immense. As Reinhart Brandt notes, "All critique, transcendental philosophy, and metaphysics (of morals and of nature) has its foundation in the table of judgements. If there is a single foundation on which the doctrines

51. Kant, *Critique of Pure Reason*, 106–107.

52. Kant, *Critique of Pure Reason*, 113.

of Kant's philosophy are built, it must be the table of judgements."⁵³ Heidegger, likewise, stresses that this section serves as "the key to understanding the entire book, as the foundation of Kant's metaphysics."⁵⁴ Kant must demonstrate the existence of the categories if he wants to prove that understanding is structured by rational principles within cognition and not by the empirical world. Without the structuring order of the categories, Kant's idealist turn would fall into the claim that knowledge of the world is radically subjective, with no interpersonal certainty. Whimsy would become the rule, and no claims to knowledge would have a universal legitimacy. Yet the tables themselves have an arbitrary quality. They are particularly strange because one might ask how Kant arrived at these particular categories, a point particularly worth making because he credits Aristotle for having uncovered certain categories but then criticizes him for presenting them in a haphazard manner dispersed unsystematically through his writing.⁵⁵ Many commentators have questioned why Kant does not argue for the specific categories. Why does he simply present a list as if it were taken from lecture notes or some handbook in logic?⁵⁶ Where is the philosophical justification for these particular categories as a priori implicit within any synthetic act of understanding? How are we to compare the visual significance of the arrangement with the content of each list? Is there a qualitative difference between the visual presentation of the table and the written argument of the *Critique*? Both Reinhard Brandt and Barbara Bauer allow that there might be some demonstrated quality in the table that might not be communicated in a discursive form, but how does one philosophically evaluate this visual significance?⁵⁷ Certainly, in the second edition of the *Critique of Pure Reason*, Kant presents an interpretation of the table wherein he explicates its layout, yet this

53. Reinhard Brandt, *The Table of Judgements: Critique of Pure Reason A67–76; B92–101*, trans. Eric Watkins, North American Kant Society Studies in Philosophy 4 (Atascadero, CA: Ridgeview Publ., 1995), 1.

54. "Das Verständnis dieses Paragraphen ist der Schlüssel zum Verständnis der Kritik d.r. V. als einer Grundlegung der Metaphysik." Heidegger, *Kant und das Problem der Metaphysik*, 53.

55. "Dann wird aber überhaupt unsicher, welchen Charakter diese Urteilstafel hat. Kant selbst schwankt und nennt sie bald eine 'transzendente Tafel', bald eine 'logische Tafel der Urteile'. Fällt so nicht der Vorwurf, den Kant der kategorientafel des Aristoteles macht, auf seine Urteilstafel zurück?" Heidegger, *Kant und das Problem der Metaphysik*, 51.

56. For Kant's sources, see Heinz Heimsoeth, "Herkunft und Entwicklung von Kants Kategorientafel," *Zur Kantforschung der Gegenwart*, ed. Peter Heintel and Ludwig Nagl (Darmstadt: Wissenschaftliche Buchgesellschaft, 1981), 25–32.

57. "What justifies this table and the systematicity and completeness Kant claims for it? Is it 'evident and incapable of proof'? While a certain degree of plausibility is supposed to result from the arrangement of the logical functions in an intuitive table whose four headings the reader can grasp in a single intuition (*uno intuitu*), its discursive support can be realized only by a reader who is aware of information and interpretations of the text that Kant presupposes." Brandt, *Table of Judgements*, 1. Bauer follows Brandt's lead: Barbara Bauer, "Die Philosophie auf einen Blick: Zu den graphischen Darstellungen der aristotelischen und neuplatonische-hermetischen Philosophie vor und nach 1600," in *Seelenmaschinen: Gattungstraditionen, Funktionen und Leistungsgrenzen der Mnemotechniken vom späten Mittelalter bis zum Beginn der Moderne*, ed. Jörg Jochen Berns and Wolfgang Neuber (Vienna: Böhlau, 2000), 484.

description cannot exhaust the significance of its visual organization. The discourse about the table does not supplant the table itself.

What end do the tables serve? For a start, Kant is working within the norms of his age. As Foucault remarks, "The drawing up of 'tables' was one of the great problems of the scientific, political and economic technology of the eighteenth century."⁵⁸ In a specifically epistemological context, Peter Baumanns reads the table as a response to the empiricist *tabula rasa*.⁵⁹ By choosing a four-cornered diamond shape for his list, Kant suggests that the formal positioning of the categories contributes some validity to their deduction, or at the very least the form assists the reader in understanding the argument.⁶⁰ Kant refers to each as a *Tafel*, which today suggests a blackboard but might once have indicated any surface on which geometrical figures could be sketched. Of course, in ordinary speech, the term refers to a table upon which a meal is served.⁶¹ The *Tafel* thus might be a spread of plates and food for the reader to consume, one placed (laid out) in such a manner that the position of each item tells something important. The *Tafel* prepares an activity, namely, the consumption of the meal. The formal (logically and ceremonially) arrangement of the *Tafel* explains the sequence of the meal. The arrangement tells how the meal will be eaten, which foods in what order. It tells us something about those who participate. The arrangement of the *Tafel* guides the subsequent event. Kant was very fond of large midday meals with invited guests and placed great importance on the rituals of dinner conversation. A guest who could not contribute to the conversation, who had little to say for himself, would likely not receive a second invitation. Banquets, furthermore, stand at the origin of the memory arts, a subject we will discuss in detail in the next chapter. Kant's *Tafel* shares a kinship with the table Simonides recreated in his mind. As Bauer has argued, Kant's *Tafel* is descendant from the many tables, charts, trees, and diagrams used by scholars to present logical categories in visually comprehensible form. As such it participates in the modern reception of the memory arts, that is, the reliance on visual forms situated in space as a means of organizing complex discursive relationships.⁶² In the *Anthropologie*, we find clear evidence that Kant and

58. Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan (New York: Vintage, 1979), 148.

59. Peter Baumanns, *Kants Philosophie der Erkenntnis: Durchgehender Kommentar zu den Hauptkapiteln der "Kritik der reinen Vernunft"* (Würzburg: Königshausen & Neumann, 1997), 240.

60. Barbara Bauer draws a compelling connection between Kant's presentation and the early modern tradition of graphically representing philosophical systems according to the emblematic adaptation of the classical *ars memorativa*. See Bauer, "Die Philosophie auf einen Blick," 481–519.

61. Nietzsche writes about *Tafeln* in *Thus Spoke Zarathustra*, but he is thinking more along the lines of Moses than Kant. A *Tafel* can also be a tablet on which laws are written. Exodus 24:12: "Und der HERR sprach zu Mose: Komm herauf zu mir auf den Berg und bleib daselbst, daß ich dir gebe die steinernen Tafeln, Gesetz und Gebot, die ich geschrieben habe, um sie zu unterweisen." Zarathustra says that he is surrounded with broken old tablets and half-written new ones. In a Nietzschean sense Kant's table of categories is the rendering of a new law of truth. Baumanns, *Kants Philosophie der Erkenntnis*, 240.

62. See also Lina Bolzoni's history of table and charts used by Renaissance logicians in *The Gallery of Memory*, trans. Jeremy Parzen (Toronto: University of Toronto Press, 2001), 23–73.

his audience were quite familiar with these ancient arts. In one lecture, he compares the famous polyhistorians with a train of one hundred camels carrying a load of books, reminding us of the worm that grows by accumulation. Indeed, Kant urges the reader not to judge the memory artists too harshly, for their ability to hold vast information was already praiseworthy, even if they lacked the *Urteilkraft* or ability to judge it.⁶³ The architectonic, on the other hand, reorders the linear sequence of rhetorical speech into a spatial structure. It has the quality of a memory theater in the sense that it provides a means of testing whether one has failed to include some information. Having left some knowledge out, having overlooked some data, is not the same as having forgotten something that was once known. Still architecture, the spatial arrangement of knowledge, is used as a means to determine the completedness of knowledge. Kant's architectonic shares with Descartes the sense that an order will allow one to check, reexamine, knowledge in order to see if there is more knowledge to be acquired. Ultimately, the spatial arrangement of knowledge is more than an ordering; it establishes a method of examination.

Not only does a *Tafel* suggest a physical space within which memory occurs; it also conceives that space as contemplative. Whereas the classical authors imagined mnemonic space as architectural, the eighteenth century was open to using natural tableaux. When in *Poetry and Truth* Goethe describes the view of the Alsatian landscape from the tower of the Strasbourg Muenster as a *Tafel*, he does so to emphasize the calm, detached manner in which he, a new arrival to the region, contemplated his future: "Such a fresh view into a new landscape, where we plan to spend some time, retains its unique character, both pleasant and fateful, so that the whole lies before us like an unwritten slate."⁶⁴ From the tree in "Von deutscher Baukunst" upon which he etches Erwin's name to the woods in *Poetry and Truth* where he meets his beloved, the natural objects around Strasbourg became the surface on which Goethe wrote. A *Tafel* has a preliminary quality: it is viewed at the beginning of an exercise, such as living in Strasbourg or expounding the a priori categories. The *Tafel* allows the eye to wander over objects to the extent that they seem meaningful at first glance. In a word, Goethe's gaze upon the *Tafel* is disinterested, because it occurs at the very opening of an activity. The *Tafel* allows calm thought, and yet, as Goethe admits, it creates some anxiety about how the future will fill in the neutral space. Here, too, at the beginning of Kant's deduction, the *Tafel* allows a moment of calm, and yet fairly contentless, reflection about its elements. Just as the traveler does not have any strong personal feelings about a new landscape, so

63. "Von den Wundermännern des Gedächtnisses, einem Picus von Mirandola, Scaliger, Angelus Politanus, Magliabecchi usw., den Polyhistoren, die eine Ladung Bücher für hundert Kamele als Materialein für die Wissenschaften in ihrem Kopf herumtragen, muß man nicht verächtlich sprechen, weil sie vielleicht die für das Vermögen der Auswahl aller dieser Kenntnisse zum zweckmäßigen Gebrauch angemessene *Urteilkraft* nicht besaßen." Immanuel Kant, *Anthropologie in pragmatischer Hinsicht*, in *Sämtliche Werke* (Leipzig: Insel, 1921), 1: 364.

64. Goethe, *Dichtung und Wahrheit*, HA 9: 357.

too the philosophic reader might have a nonjudgmental response to the preliminary plan of Kant's deduction. Indeed, given the saturation of Kant's architectural description of the *Critique of Pure Reason*, the tables represent a plan of a plan (a diagram of the entire *Critique*).

Derrida's treatment of the tables in *Truth in Painting* shows just how suggestive Kant's terminology is. In his reading of the *Critique of Judgment*, Derrida considers the tables just at the point where Kant applies the four moments of judgments, from the *Critique of Pure Reason*, to judgments of taste. Derrida describes Kant's application of logical categories to tasteful judgements as a "framing," which he quickly points out does not fit well. What might be appropriate for distinguishing modes of logical judgments, Derrida suggests, does not apply to the question of beauty. Derrida then goes on to show the violence that this "framing" performs on aesthetics. "Framing," however, is a term Derrida locates in the third *Critique*: it is not the subject or even a metaphor in the *Critique of Pure Reason*, the work in which Kant first defines the four modes of logical judgment. To make his point that Kant's application of the first *Critique* to the third fails, Derrida imports a term from the third in order to explain an argument in the first. Nothing need prevent Derrida from making this move. He is free to chose his own metaphors. However, in doing so he passes over Kant's own terms. By importing the "frame" into the first *Critique*, Derrida frames the *Tafel*: in other words, he engages in his own act of framing the first *Critique* through the third, even as he points out how the first "frames" the third. The imposition of concepts onto domains where they are ill suited—logical terms in aesthetics—is a practice that Derrida sets in reverse—esthetic terms in logic. The *Tafel* is surrounded by the frame, creating a surreal image—a framed table. Derrida then sets out to dismantle this odd ensemble, yet it is one he has already imposed on the text.

A table provides a surface for a logical deduction and a visual image, a function particularly important for Kant as he "lays out" his categories. Is there some demonstrative quality to the table in its visual presentation? Does Kant introduce the table in the same manner as he would present a geometrical proof? Barbara Bauer very sensitively draws out the visual significance of Kant's table in order to demonstrate its relation to baroque illustrations of philosophical systems. What distinguishes Kant's list from these earlier visualizations of philosophy is its abstract, geometrical simplicity. Bauer understands the table as a rhetorical strategy rather than a mathematical demonstration.⁶⁵ The visual representation of a geometrical problem is central to its demonstration. If one sees a triangle, then one intuits the relation of the sides to each other. Does Kant anticipate a similar effect for his tables? Does the visual representation of the categories have the same explanatory

65. "Die Kantischen Tafeln sind Relikte einer Darstellungsform der Philosophie, die in der Frühen Neuzeit selbstverständlich auf die rhetorische Wirkmacht und Überzeugungskraft der Bilder neben oder anstelle der Worte vertraute." Bauer, "Die Philosophie auf einen Blick," 489.

quality as an architectural plan? To see the drawings of a building's organization is to understand it more abstractly and completely than if one were to read about it.

Within the Kantian jargon, the visual appeal of a table would be akin to a geometrical proof, an image that carries an explanatory weight: "All concepts are discursive and all constructions intuitive."⁶⁶ Kant separates conceptual discourse from mathematical demonstrations, yet the *Tafel* is one moment in which he combines both as a "construction" that equates with drawing (*zeichnen*), the medium shared by architects and geometers. The connection between geometry and architecture raises the possibility that the *Tafel* amounts to a visual, two-dimensional plan of pure understanding. As such it assists the conceptual thinker without contributing new discursive knowledge: "The mathematician is a great architect. Through his order he can be very useful for philosophy; however, he cannot enrich it with new concepts. Where a concept is assumed, mathematics accomplish everything, but where concepts are discursive, the mathematician can accomplish nothing."⁶⁷ That Kant would present his philosophy as a drawing runs counter to his repeated insistence, in a deliberate critique of Cartesian argumentation, that philosophy cannot rely on mathematics to explain the relationship of knowledge to the world. There is little doubt among scholars that Kant distinguishes sharply between philosophical deductions and geometrical demonstrations; thus for him to rely on a visual presentation of a philosophical argument, such as the printed page showing the *Tafel*, runs against his avowed method.⁶⁸ Mathematics, Kant argues, operates through constructions that do not directly arise from empirical intuitions.⁶⁹ Mathematical proofs consist of demonstrations, as opposed to philosophical arguments, which employ concepts about the empirical world.⁷⁰ "All knowledge arising out of reason is derived either from concepts or from the construction of concepts. The former

66. "Alle Begriffe sind Discursiv und die Constructionen intuitiv, daß z.E. aus einem Punkt über der Linie nur ein Perpendikel möglich sey, beweise ich nicht aus dem Begriff des Perpendikels oder der geraden Linie etc, sonder durch Construction, ich zeichne nemlich alles hin." Immanuel Kant, "Vorlesung über Philosophische Enzyklopädie," in *Gesammelte Schriften* (Berlin: Walter de Gruyter, 1980), 29: 6.

67. "Der Mathematicer ist ein großer Architect. Durch Ordnung kann er der Philosophie sehr nützlich seyn, aber wird sie mit neuen Begriffen nicht bereichern. Wo ein Begriff constraint werden soll, da kann der mathematicus alles thun, aber bey begriffen die discursiv sind, wird er nichts ausrichten." Kant, "Vorlesung über Philosophische Enzyklopädie," 29: 12–13.

68. Various studies reiterate Kant's distinction: Howard Duncan, "The Euclidean Tradition and Kant's Thought on Geometry," *Canadian Journal of Philosophy* 17.1 (March 1987): 24 and 35; Matthias Schirn, "Kants Theorie der geometrischen Erkenntnis und die nichteuclidische Geometrie," *Kant-Studien* 82.1 (1991): 5; and Lisa Shabel, "Kant on the 'Symbolic Construction' of Mathematical Concepts," *Studies in the History of Philosophy and Science* 29.4 (1998): 589.

69. Lisa Shabel interprets Kant as insisting that our pure intuition of space makes geometry as a science possible. A crucial step in this argument, she claims, is Kant's claim that geometrical claims are not formulated a posteriori. Lisa Shabel, "Kant's 'Argument from Geometry,'" *Journal of the History of Philosophy* 42.2 (2004): 204.

70. "Die Philosophie ist eine Vernunft Wissenschaft aus Begriffen und die Mathematic eine Vernunft Wissenschaft aus der Construction." Kant, "Vorlesung über Philosophische Enzyklopädie," 29: 6.

is called philosophical, the latter mathematical.”⁷¹ Kant no doubt has geometry in mind when he argues that mathematics entails the demonstration of constructions that are intuited a priori, though he extends the argument to include algebra. His account of how mathematics demonstrates a proof relies strongly on visual terms. A geometrical construction is *anschaulich*, whereas philosophy relies on words: “I should therefore prefer to call the first kind *acroamatic* (discursive) *proofs*, since they may be conducted by the agency of words alone (the object in thought), rather than *demonstrations* which, as the term itself indicates, proceed in and through the intuition of the object.”⁷² The difference between seeing and hearing suggests an anthropological distinction between perception and modes of thought. Listening and the discursive quality of philosophy are thematized in order to mark the boundaries of systematic philosophy. By repeatedly rejecting mathematics as the basis for knowledge, Kant separates himself from Descartes and Leibniz, both of whom Kant claims deployed mathematical proofs to demonstrate the nature of the world.⁷³

In the section on the architectonic we find a similar moment in which Kant discusses the discursive quality of philosophical argumentation. He distinguishes here between modes of arranging knowledge: either as a system or “rhapsodically,” which means according to the linear narration of oral poetry. The term entered philosophy through Plato’s dialogue *Ion* and was invoked favorably by Kant’s Königsberg contemporary Johann Georg Hamann in his 1761 essay, “Aesthetics in a Nutshell: A Rhapsody in Cabbalistic Prose.” The rhapsode performs epic poetry for a listening audience, who is always caught in the present moment of speaking. The listener in the midst of a performance does not have an overview of the entire work. Memory and anticipation may saturate the work, so that the audience is led to anticipate or recall events, but temporal allusions are always caught in some particular instance. Systematic philosophy, on the other hand, allows, indeed Kant would insist, requires, a comprehensive understanding that narration never provides. (Even the gods in Homer, for all their detachment, are carried along by the war and their own rivalries.) Rhapsody depends very much on the ear, though the speaking poet no doubt contributes to the telling through his body. Kant’s distinction between systematic thinking and rhapsody suggests two different temporalities as well as a different order of the senses. The systematic thinker reflects after the fact. He is not caught up in the stream of sensory experience. Instead he analyses when it is no longer immediate. He waits until after the first impression. This delay suggests that the senses are less important in systematic thought; nevertheless the

71. Kant, *Critique of Pure Reason*, 656; Kant, *Kritik der reinen Vernunft*, 864 [A837/B865].

72. Kant, *Critique of Pure Reason*, 590–591; Kant, *Kritik der reinen Vernunft*, 781–782 [A735/B763].

73. Leibniz points out that the difference between mathematical and linguistic signs means that philosophical and mathematical questions need to be articulated differently, yet in his “Nouveaux essais sur l’entendement humain” he allows Philaethes to posit: “On peut juger du juste et de l’injuste aussi incontestablement que dans les Mathematiques.” Leibniz, *Philosophische Schriften*, 3.2: 296.

process of thought is described in visual terms. Here again Kant compares his writing to the architectural plan and sketch.

Implicitly, Kant does connect a visual process with the table. His textual explanation of how the categories operate explains that each element is put into relation to the others through an act of synthesis performed by the imagination. Where is the imagination in the table? It is nowhere listed among the concepts. Instead imagination is the operation of the concepts listed. The table reiterates the visual character of imagination by showing the categories it deploys in synthesis that constitutes knowledge. In order for knowledge to be understood, it must be arranged according to the concepts shown in the table. The act of moving sensory impressions through the categories is itself performed by the imagination; thus it does not appear listed. The imagistic arrangement of the categories into four lists symmetrically aligned into a cross suggests a factor that arranges the concepts in the table but does not appear within it. The table as formal arrangement requires the engagement of Kant's most elusive and imprecisely defined faculty. The form of the table, its break with normal discursive flow and its rearrangement of the concepts into a diamond, is the table's visual representation of imagination.

The arrangement of the words in the table suggests an order outside the discourse that corresponds to Kant's insistence that the *Critique of Pure Reason* be understood as a whole rather than in its details. The layout of the table gives a visual perception of the architectonic order that lies beyond the immediate discursive argument. The unity of the work is not encapsulated by the text itself, though it is theorized in Kant's discussion of the architectonic. The table has the qualities of a sketch or a plan. It presents the metaphor of architecture within the text as a symmetrical distribution of words. The fact that certain lists are longer than others, that Kant does not present a neatly symmetrical image, where letters and words correspond not only in terms of their signifieds but also typographically, shows that the discursive still has precedence over the architectonic image.

Kant defends the table as providing a plan of his entire undertaking. Again the German stresses the architectural character of Kant's intention. First he couples philosophical thought with the visual contemplation of the table. The playful tone suggests that looking at the table could allow insights into the overall form of rational understanding: "This table of categories suggests some nice points, which may perhaps have important consequences in regard to the scientific form of all modes of knowledge obtainable by reason."⁷⁴ The table then is a visual image of Kant's entire project: "For that this table is extremely useful in the theoretical part of philosophy, and indeed is indispensable as supplying the *complete plan of a whole science*, so far as that science rests on *a priori* concepts, and as dividing it systematically

74. Kant, *Critique of Pure Reason*, 115; "Über diese Tafel der Kategorien lassen sich artige Betrachtungen anstellen, die vielleicht erhebliche Folgen in Ansehung der wissenschaftlichen Form aller Vernunftkenntnisse haben könnten" (Kant, *Kritik der reinen Vernunft*, 159).

according to determinate principles.”⁷⁵ Kant uses the ground/edifice metaphor, but the foundation is nothing more than the table, which gives a visual representation. The grounding should not be understood literally as a foundation based on first principles, but instead as a sketch, a plan that represents the interaction of the categories through their static placement in a four-sided figure. Kant’s epistemology is grounded not on certain knowledge of self-consciousness—*cogito, ergo sum*—but instead it is posited upon a deduction of categories, which are knowable only through a schematic rendering of human reason. The transcendental deduction is an example of how he would wish the architectonic of knowledge to survey all sciences in order to recognize what rational concepts have not been accounted for but lie implicit within the others. The architectonic would allow one to deduce what forms of knowledge must be at work but have not yet been properly recognized.

In his specific comments Kant makes clear that the arrangement of the table into four classes is important. He proceeds to read the four clusters in relation to each other—that is to say, the visual positioning of each list over and against the other is itself an indication of the organization of rational thought. Kant wants to arrange the categories in a four-sided table because this format allows him to show that the four types of categories do not operate sequentially in the process of composing a synthesis of the understanding. The two-dimensional character of the table on the page can be compared to the architectural plan, which in flat images lays out the position of three-dimensional objects.⁷⁶ The “table” is understood as a highly abstract representation of four supports connected by a surface. No one category has precedence over the other; they coordinate with each other, rather than subordinating to each other. The elements are united in a sphere, Kant argues, which makes them a coherent whole in which no one part can be left out, and wherein each element acts on the other.

The two tables have a similar layout in order to support Kant’s claim that the a priori categories are derived from the logic of judgments. This derivation is both

75. Kant, *Critique of Pure Reason*, 115; “Denn daß diese Tafel im theoretischen Teile der Philosophie ungemeyn dienlich, ja unentbehrlich sei, den Plan zum Ganzen einer Wissenschaft, so fern sie auf Begriffen a priori beruht, vollständig zu entwerfen, und sie mathematisch nach bestimmten Prinzipien abzuteilen” (Kant, *Kritik der reinen Vernunft*, 159 [B109]).

76. Brandt’s reading confines itself to understanding the table as a representation on a flat surface. Brandt, *Table of Judgements*, 60: “The table metaphor does not suggest either a temporal affiliation or a genetic principle. All elements are simultaneously and equally justified. They do not arise from a higher principle or a source that generates and defines them. The table of judgements is not a genealogical tree, neither from above nor from below. And yet in this table there is a series designated by numbers: we begin with quantity, and then proceed left to quality, then over to relation, and finally to modality. The numbers indicate that what is in question is neither clockwise nor counter-clockwise circular motion, but rather that the upper triad is set up first in the standard reading sequence, and then one proceeds to modality. We saw above that this corresponds to the irreversible structure of traditional logic. The table may also do justice optically to the special position of modality, which Kant emphasizes in the explanatory passage: the triangle of the first three headings is closed in itself as a complete geometrical figure. By extending it to a rectangle something qualitatively new is added, but in such a manner that the fourth element need only be a reflection or mirroring of the three preceding it.”

genealogical and inherent to the nature of the categories. While not giving a complete history of logic, Kant suggests that the a priori categories of understanding have been recognized in the past; however, they had not been organized in a systematic manner, as he has done with the tables he presents. Aristotle is credited with having isolated several fundamental logical principles, however without having articulated their interconnections, for he, Aristotle, proceeded “rhapsodically.” The systematic presentation of the categories advances philosophical thought, according to Kant, because it organizes logical principles into a unified whole. Writing about the layout, Kant explains:

This division is developed systematically from a common principle, namely, the faculty of judgement (which is the same as the faculty of thought). It has not arisen rhapsodically, as the result of a haphazard search after pure concepts, the complete enumeration of which, as based on induction only, could never be guaranteed. Nor could we, if this were our procedure, discover why just these concepts, and no others, have their seat in the pure understanding.⁷⁷

The rationale is very similar to the arguments Kant presents for an architectonic of all knowledge. Only a vision of the whole will allow one to recognize if any element has been left out. The table, like the architectonic, is modeled on the plan drawn prior to construction so that the entire undertaking can be examined critically before the ground is broken. In contrast, the “rhapsodic” acquisition of knowledge relies on luck and inspiration. Theodor Adorno directly connects Kant’s polemic against rhapsodic thought with the Cartesian rule “that one ‘should in every case institute such exhaustive enumerations and such general surveys’ that one ‘is sure of leaving nothing out.’” For Adorno, Descartes’ rule amounts to the “true principle of systematic thought,” a mode Adorno contrasts with the impulsive style of the essay.⁷⁸ While Kant does acknowledge fortuitous modes of thought, such as genius, in the *Critique of Judgment*, he clearly values systematic articulation over chance insight.

Kant’s explanation as to how he deduced the table has its own rhapsodic, and thus unsystematic, quality. Here, at the most important moment of systematic articulation, Kant falls into a seemingly arbitrary representation. Never is a full account given of the transition from the first table to the second. Why break down logical judgments in four lists of three? Just how were the categories reconfigured from the logical table? No full systematic account is provided. In the second edition, Kant does offer an abbreviated genealogical derivation of three categories—“unity,” “plurality,” and “totality”—as having been only implicitly understood by Scholastic logic [B113–116]. In this passage, Heidegger recognizes an intention to

77. Kant, *Critique of Pure Reason*, 114; Kant, *Kritik der reinen Vernunft*, 157 [A81/B106–107].

78. Theodor Adorno, “The Essay as Form,” in *Notes to Literature*, trans. Shierry Weber Nicholson (New York: Columbia University Press, 1991), 1: 15.

uncover the origins of consciousness's unity with being. As much as later philosophers might elaborate on Kant's historical understanding of the categories, those passages in which Kant discusses how earlier philosophers half recognized the categories are still only elucidations of the visual table. The crucial point of the tables is that they suggest a unified entity. Kant claims that the tables are an advance over earlier epistemology because they suggest through their visual array that the fundamental principles of logical judgment (and the a priori categories) operate in conjunction with each other. The table as visual image represents articulation more clearly than discourse, which is itself a medium of accumulated words in a row. In the commentary of the second edition, Kant explains to readers how they are supposed to interpret the image of the lists as a representation of the categories in operation. For example, disjunctive judgments, which would have to be written in an either/or sentence, are better represented in a visual field than in a grammatical sequence.⁷⁹ While the tables are the only image Kant presents to portray the categories, he states that the operation of the categories shown in the table forms a sphere. If the table shows the static relation of the categories to each other, the sphere is better suited for describing interactive relations such as the simultaneous attraction and repulsion of two bodies to and from each other or the relation of a thing divided into parts, wherein the parts are distinct from each other and yet are all included within the complete thing to which they belong. Kant finds the sphere more apt for representing these intertwined relations. If we think of the table in three dimensions, each one of the four lists with its three categories allows for a twelve-part interaction that Kant conceives of as creating the relations of a sphere. Kant does not provide a complete explanation of how the geometrical representation of the categories occurs. The best we are left with is the suggestion that the interaction of the categories positioned in the table when activated in thought can be described as a sphere. Kant introduces this new geometrical figure in the midst of very specific comments in the second edition without having provided a general explanation for this three-dimensional figuration of the categories. While one could imagine a transposition of the table to a sphere, Kant does not provide one.

The a priori categories are crucial because they are the concepts consciousness employs to synthesize diverse intuitions into a coherent entity. The many confused sensations that the mind receives from the outside world need to be collected, preserved, and aligned by an act of the mind in order for them to be intelligible [A77]. The categories function as concepts that organize sensations into thoughts. Kant stresses the operation as a synthesis, an action (*eine Handlung*), that entails intellectually grasping (*begreifen*) a multitude of sensations. Implicit within Kant's description of synthesis is the hand that collects, acts upon, and grabs hold of sensory data: "By *synthesis*, in the most general sense, I understand the act of putting different

79. Kant, *Critique of Pure Reason*, 117; Kant, *Kritik der reinen Vernunft*, 161 [B112].

representations together, and of grasping what is manifold in them in one [act of] knowledge.”⁸⁰ The synthesis of the understanding is an action, but the table of categories is static representation. It presents a plan whose elements are supposed to show their functional relation to each other through their positions. The placement of the words implies an interaction, a conceptual doing that interacts with another. The process of thinking appears on the page as abstractions set against each other. The four-cornered layout along with their implied interaction is caught up in another tension—that between the immobility of the concepts in the table and the operation of synthesis that Kant credits to imagination (*Einbildungskraft*). The mode of representation (signifier)—through a table in a book—replicates the drama between the elements (signified). The table shows the categories of understanding, but it does not portray the act of synthesis. How these categories operate in understanding is left out of the picture.

The Architect as Master of All and Nothing

The architectonic section of the *Critique of Pure Reason* characterizes the formation of knowledge, both in the epistemological sense of absorbing and analyzing perceptions and in the practical, biographical sense of learning over time, as the reorganization of raw data into a complex, abstract order. The specific movement of understanding implied by the table of categories is compared to the temporal development of knowledge, both biographically for a thoughtful person and discursively for the history of science. This section will examine how Kant places knowledge into a unity that shares surprising features with the liberal arts education put forward in Vitruvius's treatise on architecture. My reading will show how ancient architectural theory provided systematic philosophy with key conceptual terms, as well as with a humanist ideal, akin to the subjective aspirations of eighteenth-century *Bildung*. In the end, ancient architecture serves as a model representation of how the arrangement of freestanding elements into a whole redefines subjectivity. It provides a means to describe the subject statically, as having an internal order that is “structured,” and fluidly, as changing over time (rising, decaying, restoring itself).

Architecture rivaled philosophy from the start by presenting itself as the overarching discipline that integrates other disciplines. Given the complex knowledge required for either undertaking, Vitruvius, the one Roman architect whose treatise on building has survived to the present, opens his *Ten Books on Architecture* with the question of education. What branches of study are required for the successful

80. Kant, *Critique of Pure Reason*, 111; “Ich verstehe aber unter **Synthesis** in der allgemeinsten Bedeutung die Handlung, verschiedene Vorstellungen zu einander hinzutun, verschiedene Vorstellungen zu einander, und ihre Mannigfaltigkeit in einer Erkenntnis zu begreifen” (Kant, *Kritik der reinen Vernunft*, 154 [B103]).

education of an architect? Before listing any specific fields of knowledge, Vitruvius distinguishes between theory and practice in knowledge. Some might expect that he would raise this point in order to insist that architects are far more concerned with the practice of building, yet he warns immediately that the successful architect needs a thorough knowledge of both: "Architects who have aimed at acquiring manual skill without scholarship have never been able to reach a position of authority... while those who relied only upon theories and scholarship were obviously hunting the shadow, not the substance."⁸¹ The difference between theory and practice, Vitruvius goes on to write, corresponds to the distinction between the signified and that which gives it significance, the signifier—a tantalizing comparison on which Vitruvius does not elaborate. Regardless, the first chapter presents a theory of knowledge, which seeks to unify divisions through the practice of educating architects: "One who professes himself an architect should be well versed in both directions."⁸² Evenhandedness, or balance, is an important virtue for ancient writers familiar with Aristotle; thus it seems as sensible for Vitruvius to counsel against an overly theoretical approach to architecture as it is for him to bemoan the absence of abstract thinking in construction. However, it soon becomes clear that the real concern for Vitruvius is that architects might not receive sufficiently philosophical education. Vitruvius lays out the distinction between theory and practice in order to justify a wide curriculum for architects. The organization of Vitruvius's treatise, wherein the discussion of building materials precedes the analysis of proportion and the orders, suggests that in the ancient education of an architect practical knowledge also precedes theory. Vitruvius's famous rule that all structures must be built with a concern for durability, convenience, and beauty also suggests an ascending movement wherein an education in laying out foundations precedes aesthetics. As important as the technique for building a proper wall may be for Vitruvius, he is eager not to have the architect's education remain there. Instead he posits an ascending movement from the material into the abstract that follows the arc of Platonic education. Before entering into the specific questions of proportions, Vitruvius presents a theory of knowledge. Theory, as opposed to the practice of building, has two important roles in Vitruvius's treatise: to define the discipline's educational requirements and to explain the stylistic rules for designing buildings appropriate to their function.

Following the division between theory and practice, Vitruvius lists the many branches of knowledge necessary for an architect: "Let him be educated, skilful with the pencil, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory

81. Vitruvius, *Ten Books on Architecture*, 5.

82. *Ibid.*

of heavens."⁸³ These fields obviously encompass many others. Vitruvius goes on to include arithmetic and optics under geometry. History blends into mythology and religion. Painting and sculpture are mentioned later. Military tactics and fortifications are not immediately included, yet they saturate Vitruvius's writing.

The list seems encyclopedic, but Vitruvius suggests that the architect need not have complete mastery in the fields listed.⁸⁴ In studying philosophy, it suffices to "have followed with attention." An understanding of the primary opinions and an acquaintance with a field are often enough for the architect. One might wonder, based on Vitruvius's description, just how thorough the education of the architect is meant to be.⁸⁵ Is he required to understand all aspects of the field, or does he need to study only those that apply to construction? How well versed in the law does an architect need to be? Vitruvius explains that debates over property boundaries, building codes, and the relations between neighbors are often of decisive importance in the design of a building. The immediate question, then, for the busy architect becomes, Is a knowledge of property rights sufficient, or is a comprehensive understanding of Roman law the only secure basis for resolving housing disputes? Can an architect have a smattering of knowledge, or must the architect be systematic in his studies, learning more than most every other educated professional? Can the architect move lightly among fields, collecting only what will serve his immediate, practical goals of construction, or must the architect grasp the inner organization of these sciences with the same insight and facility as their practitioners?

The opening sentence boldly asserts a hierarchy of knowledge with architecture at the peak: "The architect should be equipped with knowledge of many branches of study and varied kinds of knowledge, for it is by his judgment that all work done by the other arts is put to the test." Architecture is not a subject like any other; it cannot be learned in the same manner as other sciences.⁸⁶ Vitruvius argues instead that it must be acquired in stages that stretch out across an entire life. The different forms of liberal education are organized like the human body—as a single whole composed of different members.

The education of the Vitruvian architect has certain similarities with Socrates' account of how the philosopher moves from loving boys to contemplating the Beautiful. Socrates' rendition of Diotima's speech in Plato's *Symposium* describes how the lover of beauty rises in stages: first, from sensual desire for a particular body,

83. *Ibid.*

84. Alberti would later echo Vitruvius's account, though with a list of character traits that suggested not only that the architect needed to be well educated, but also supreme in many other human qualities: "A great matter is architecture, nor can everyone undertake it. He must be of the greatest ability, the keenest enthusiasm, the highest learning, the widest experience, and, above all, serious, of sound judgement and counsel, who would presume to call himself an architect." Alberti, *On the Art of Building*, 315.

85. Martin Briggs, *The Architect in History* (Oxford: Clarendon Press, 1927), 19, 30–34.

86. Heiner Knell, *Vitruvs Architekturtheorie: Versuch einer Interpretation* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1985), 29.

then to loving many bodies, followed by a learned love of beautiful things until arriving at the form of Beauty.⁸⁷ Vitruvius does not explicitly equate knowledge with an understanding of beauty; thus the educational path he describes does not have the aesthetic character of the *Symposium*. Nevertheless, Vitruvius does present the education of an architect as a spiritual ascent:

Consequently, since this study is so vast in extent, embellished and enriched as it is with many different kinds of learning, I think that men have no right to profess themselves architects hastily, without having climbed from boyhood the steps of these studies and thus, nursed by the knowledge of many arts and sciences, having reached the heights of the holy ground of architecture.⁸⁸

One can still detect the echo of a student-teacher relationship in this description. Vitruvius is particularly concerned that students not rush ahead of their abilities to assume the rank of architect. In the introduction to book 3, he reiterates the common ancient opinion that Socrates was the wisest of men. Unfortunately, few recognize the wisdom in others, and very often the lessons of philosophy are overlooked by those who do not see the virtues that others possess. Because of this common inability to judge others correctly, Vitruvius argues it is necessary for the educated to write treatises, such as his own. Out of this somewhat self-serving argument, it becomes clear that Vitruvius holds Socrates up as the exemplar for the educated architect. Vitruvius's text stands in for the experienced wisdom that would, in a better world, be recognized and respected.⁸⁹ Later, Vitruvius provides a list of the many Greek and Latin treatises he has consulted in preparing his own. Thus the first form of knowledge listed among the architect's many—skill with a pencil, an art Socrates eschewed—serves the Vitruvian architect as a means of assuring his lasting fame, even in the face of career disappointments.

Vitruvius was by no means alone in describing architecture as that art that organizes all others. The Greek word *architecton* did not so much mean “master craftsman” as “craft organizer,” the individual responsible for supervising the various crafts on a large construction project.⁹⁰ The lexical shift whereby the “architect”

87. Plato, *Symposium*, trans. Alexander Nehamas and Paul Woodruff (Indianapolis: Hackett, 1989), 59.

88. Vitruvius, *Ten Books on Architecture*, 10.

89. John Soane also recognizes an ethics in Vitruvius's adaptation of philosophy: “[Vitruvius] particularly inculcates the necessity of philosophy to enlarge the mind of the artist, to free him from arrogance, and to make him courteous, just and faithful; above all things he exhorts him to avoid avarice; as no work can succeed without fidelity and integrity; and not to be covetous, nor to have his mind intent on receiving gifts but to support with prudence and propriety, his dignity and reputations.” John Soane, *Plans, Elevations, and Sections of Buildings* (London, 1788; repr., Farnborough, England: Gregg International Publishers, 1971), 2.

90. J. G. Landis, *Engineering in the Ancient World* (Berkeley: University of California Press, 1978), 209.

was transformed from directing laborers to mastering knowledge did not occur with Vitruvius. Indeed, he does not make this distinction as sharply as earlier writers. For example, he contrasts his own pedagogical expectations with those in a lost manual written by Pytheos, the architect of the temple to Minerva at Priene, the first building known to have a plan developed systematically on a grid of squares upon which the structural elements are organized.⁹¹ Pytheos, it seems, maintained that the architect should be more accomplished than men who specialized in their particular fields. The architect, according to Pytheos, must attain perfection in every area. Vitruvius argues that such a standard is both impossible and unnecessary. An architect need not also be a superior musician, sculpture, painter, philologist, and physician. Architectural knowledge in these fields relies on a theoretical understanding, but practical knowledge of every science is beyond the capacity of any one individual. Klaus Sallmann argues that here Vitruvius follows Plato's maxim that the level of education depends foremostly on the purpose for which it is used rather than on the requirements of a particular discipline.⁹²

The concept of an organic unity in which the individual elements are all coordinated to form a whole does not begin with Vitruvius. Aristotle refers to the bodily structure of poetry; however, what makes the link between Kant and Vitruvius plausible is the equation of architecture with the organic unity of knowledge. Kant uses "architectonic" as a metaphor to refer to an as yet unattained integration of systematic knowledge, whereas Vitruvius uses the figure of the architect and his education in order to give "architecture" a systematic character both as a mode of knowledge and a profession. Implicit within both discussions of architecture and the organic unity of all knowledge is the figure of Socrates. Toward the end of his discussion of the architectonic of pure reason, Kant states that true philosophy entails the application of systematic knowledge to the essential ends of human reason. The true philosopher arranges knowledge architectonically with an understanding of moral law. This teacher, as Kant calls him, proscribes the responsibilities that the different forms of knowledge have with regard to human reason. Here Kant is reiterating the distinction between the docile philosopher, who merely knows the logic of a particular system, and the reflective philosopher, who critically appraises systems according to the standards of human reason. The "teacher" Kant mentions remains an ideal, a standard of rational thought to be attained, but not yet possible. Socrates appears as the implicit referent. However, Kant refrains from ascribing agency to the position of architectonic reflection. As John Zammito has suggested, Kant's "Lectures on Philosophical Encyclopedia" may be decisive in understanding the anthropological implications of the *Critique's* opening assertion that reason

91. David M. Jacobson, "Hadrianic Architecture and Geometry," *American Journal of Archaeology* 90 (1986): 69.

92. Sallmann, "Bildungsvorgaben des Fachschriftstellers," 18.

is doomed to look for answers it cannot provide.⁹³ The “Lectures” coincide closely with passages in Kant’s discussion of the architectonic, specifically regarding the purpose of developing such a system of systems.⁹⁴ In the “Lectures” Kant describes a kind of truth that has long remained hidden. The architectural metaphor, with its insistence on digging up old foundations, reappears in the German *verborgen*, which suggests that this truth has lain hidden under the ground, buried with a system of thought, as an insight that critical philosophy unearths first in its epistemological excavations: “A buried idea of philosophy has long lain in humans.” (Ein verborgene Idee der Philosophie hat in den Menschen lange gelegen.)⁹⁵ This hidden idea has been misrecognized, treated as if it belonged to a system of learnedness. Kant identifies Zeno, Epicurus, Diogenes, and Socrates as thinkers whose primary concern was understanding the basic conditions of humanity and finding means to achieve them: “The ancients were teachers of wisdom. They demanded examples from their teachers, they were supposed to live as they taught. Diogenes, the teacher of simplicity, showed through his life how to be satisfied simply.”⁹⁶ Kant specifically contrasts these figures with Plato and Aristotle, who for their age were “Künstler der Vernunft”:

There were at that time also artists of reason such as Plato and Aristotle. The philosophy of Aristotle followed the school method; he was inclined toward the subtleties of speculation. Plato followed the free spirit of his genius. Neither speculation nor analysis stands out in his case, rather more rapture (*Schwärmerey*).⁹⁷

He then identifies Socrates as the first thinker to distinguish between speculation and wisdom, the latter requiring one to examine behavior:

Socrates taught that speculation does not help us fulfill our condition; instead we must examine our behavior, if we want to understand ourselves. He does not use his philosophy in order to occupy our amazement or thirst for knowledge, rather to teach us wisdom.⁹⁸

93. John H. Zammito, *Kant, Herder, and the Birth of Anthropology* (Chicago: University of Chicago Press, 2002), 286–292.

94. On the relation of the manuscript to the *Critique of Pure Reason*, see Manfred Kuehn, “Dating Kant’s *Vorlesung über Philosophische Encyclopädie*,” *Kant Studien* 74.3 (1983): 302–314.

95. Kant, “Vorlesung über Philosophische Enzyklopädie,” 29: 9.

96. “Die Alten [waren] Lehrer der Weisheit. Sie forderten von ihrem Lehrern Beyspiele sie sollten leben wie sie lehrten. Diogenes der Lehrer der Genügsamkeit zeigte durch sein Leben, wie es anging gnügsam zu seyn.” Kant, “Vorlesung über Philosophische Enzyklopädie,” 29: 9.

97. “Es gab auch zu ihrer Zeit Künstler der Vernunft wie Plato und Aristotles. Die Philosophie des Aristotles war nach der Schul Methode, er inclinirte zur Subtiltaet der Speculation. Plato folgte den freyen Lauf seines Genies. Nicht der Speculation, der Analysis, sondern eine gewisse Schwärmerey sticht bey ihm vor.” Kant, “Vorlesung über Philosophische Enzyklopädie,” 29: 9.

98. “[Socrates] lehrte, die Speculationen helfen nichts unsere Bestimmung zu erfüllen; sondern wir müssen unser Verhalten examiniren, ob wir dadurch dazu gelangen können. Er gebrauchte nicht seine

The "Lectures on Philosophical Encyclopedia" are striking because Kant singles out a humanist goal for philosophy in contrast with systematic speculation. In the "Lectures" he associates mathematics and architecture with the organization of systematic thought. The architectonic he opposes explicitly with encyclopedic knowledge, suggesting again the distinction between articulation and accumulation. The encyclopedic thinker gathers facts without considering their relation to the purpose of human existence. In the "Lectures," Kant uses the type of popular assertive language that he eschews in the *Critique*:

The idea of wisdom must lie at the foundation of philosophy, just as the idea of holiness must underlie Christianity. The philosopher is an artist, if he has knowledge of all things. Wolff was a speculative but not an architectonic philosopher and leader of reason. Actually he was not really a philosopher so much as a great artist of the human thirst for knowledge, like many others.⁹⁹

In the architectonic section of the first *Critique*, Kant does not present such a series of abrupt oppositions. Instead the architectonic ordering of knowledge gives over to reflection on how the sciences serve human purposes. In the *Critique of Pure Reason*, Kant alludes to the humanist ideal of philosophy; however, he casts his argument in systematic terms: "The originative idea of a philosophy of pure reason . . . is architectonic, in accordance with the essential ends of reason, and not merely technical, in accordance with the accidentally observed similarities, and so instituted at haphazard. Accordingly the division is also unchangeable and of legislative authority."¹⁰⁰ The idea of the architectonic has both the fluidity of human activity and the law-giving function of moral authority. It is both legislative, in the sense that it defines the human purpose of knowledge, and can be transformed as knowledge accumulates and rearticulates.

Strikingly, at the point where Kant is most systematic, he reverts to a *Lebensphilosophie*, for here at the end of the *Critique*, in the midst of his most all-encompassing claims, he argues that the systematic arrangement of knowledge must serve the moral life. Heidegger notes this turn when he credits Kant with seeking to return to the philosophical questions that preceded metaphysics, another

Philosophie, um unsere Bewunderung, oder Wißbegierde etc zu beschäftigen, sondern uns die Weisheit zu lehren." Kant, "Vorlesung über Philosophische Enzyklopädie," 29: 9.

99. "Die Idee der Weisheit muß der Philosophie zum Grunde liegen, so wie dem Christenthum die Idee der Heiligkeit. Der Philosoph ist ein Künstler, wenn er Kenntniße von allen Sachen hat. Wolff war ein speculativer aber nicht ein architectonischer Philosoph und Führer der Vernunft. Er war eigentlich gar kein Philosoph sondern ein großer Künstler vor die Wißbegierde der Menschen so wie es noch viele sind." Kant, "Vorlesung über Philosophische Enzyklopädie," 29: 8.

100. Kant, *Critique of Pure Reason*, 663; "Die ursprüngliche Idee einer Philosophie der reinen Vernunft . . . ist also architektonisch, ihren wesentlichen Zwecken gemäß, und nicht bloß technisch, nach zufällig wahrgenommenen Verwandtschaften und gleichsam auf gut Glück angestellt, eben darum auch umwandelbar und legislatorisch" (Kant, *Kritik der reinen Vernunft*, 872 [A847/B875]).

move very much at odds with the view of Kant as the systematic thinker. When Vitruvius questions what it means to call oneself an architect, Kant does the same for philosophy. He concludes that better than writing as one of the “Vernunftkünstler,” the philosopher should act as the lawgiver for human reason. Rather than constructing concepts as mathematicians and logicians do, Kant puts forward the ideal of a teacher, who uses conceptual tools to foster the essentially human in rational thought. Earlier, Kant refers to this teacher as the *Urbild* that philosophers should emulate. When Kant writes, “There is still one ideal teacher,” he alludes, if not directly, then to the Socrates represented as the philosopher who assembles and questions the leading practitioners of his age. In the *Critique of Pure Reason*, Kant does not linger long with the figure; he does not even name him. Instead he makes the abstract point that the ideal of the lawgiver exists in all rational beings, thus the critical examination of knowledge as it relates to the complete condition of the human.

The question of whether the architect has knowledge of all other disciplines is tempered when both Kant and Vitruvius situate the goal within a training process. Furthermore, by transforming the integration of all the sciences into moral interrogation of their purpose, one that can be performed by any rational being, Kant presents the architectonic as anything but the state of domination over others. Between Vitruvius’s self-deprecating irony and Kant’s enlightened universalism, the position of the architect alternates between mastery and Socratic irony, between a singular accomplishment and a common questioning.

Here we find a key parallel between the philosopher who interrogates the sciences as to their humane purpose and the architect who maneuvers building technologies according to a distant design. Ever since the Renaissance, architects have made a point of *not* learning the building trades too well. Palladio is the exception that proves the rule for his profession. Similarly, philosophers have studied the sciences often without entering into their academies. For all Kant’s knowledge of physics, he never understood himself as a scientist. The architect/philosopher judges all the fields but is not himself a practitioner. By articulating knowledge, he or she does not reengage with its coming to being. Indeed, the absence of encyclopedic thoroughness is almost a necessity for architectonic reflection. In his notebooks and lectures, Kant reiterates the distinction between the encyclopedic thinkers, who, like Christian Wolff, learn a subject so as to write a treatise on it, and architectonic thinkers, who are concerned with the relations between disciplines.¹⁰¹ For Kant the architectonic thinker is distinctly different from the encyclopedic. By describing

101. Kant’s distinction lives on in German academic criticism, particularly with regard to early modern writers. Joachim von Sandrart, a seventeenth-century art historian, was described in 1986 by Christian Klamm in just these Kantian terms: “So müssen wir denn Sandrart als Geschichtsschreiber wohl zu den halb dilettantisch Material häufenden ‘Polyhistoren’ seines Jahrhunderts rechnen”; quoted in Thomas DaCosta Kaufmann, “Antiquarianism, the History of Objects, and the History of Art before Winckelmann,” *Journal of the History of Ideas*, 2001, 528.

Wolff as merely encyclopedic, Kant implicitly dismisses his own precritical efforts at explaining the natural world through philosophical deduction. Kant concludes that ultimately the philosopher need not know all sciences, but only after decades of having studied them encyclopedically. Derrida makes the point hyperbolically: "An essential and mandatory incompetence, a structural nonknowledge, constructs the concept of philosophy as metaphysics or the science of science."¹⁰² Likewise, the architect as master of many fields may in the end know little about any one of them. Hence both philosophers and architects appear as dilettantes to those who claim to know the facts of their own discipline.

102. Jacques Derrida, *Who's Afraid of Philosophy? Right to Philosophy 1*, trans. Jan Plug (Stanford, CA: Stanford University Press, 2002), 62.