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# 6 Empirical, rational, and transcendental psychology: Psychology as science and as philosophy

Although Kant never developed a theoretical psychology of his own, he discussed psychological topics throughout his life. These discussions ranged from early, brief remarks on mind–body interaction in the *True Estimation of Living Forces* (§§5–6, 1:20–1) of 1747 to the relatively late, extended treatment of the faculties of cognition in the *Anthropology*, published from Kant's lecture notes under his supervision in 1797.[1] In his lectures on metaphysics, from the 1760s onward, he followed common practice and regularly discussed what he and his contemporaries called "empirical" and "rational" psychology (records of these lectures survive through student notes: 28:59–122, 221–301, 583–94, 670–90, 735–75, 849–74, 886–906). And in the preface to his *Metaphysical Foundations of Natural Science* (1786) he examined the question of whether empirical psychology could ever achieve a scientific status like that of physics, notoriously answering that it could not (4:471). For our purposes, however, the central problems pertaining to Kant's relation to psychology arise in the *Critique of Pure Reason*. In the *Critique* Kant distinguished his philosophical aim from that of empirical psychology. He also investigated the possibility of empirical and especially of rational psychology. In addition, and problematically, he adopted, even in the avowedly philosophical portions of the work, an implicitly psychological vocabulary. Because of his extensive use of this vocabulary, interpreters have, from the instant of the *Critique's* publication, disputed the extent to which Kant rested his arguments on psychological ground.[2]

Efforts to determine Kant's explicit and implicit relation to psychology face two problems. The first owes to the fact that in Kant's time psychology was not an established science with an accepted





body of doctrine; it was a science in the making, and its creators disagreed over how it should be made. Many authors, including Christian Wolff and his followers, treated psychology as the rational and empirical study of an immaterial, substantial soul; Kant began with this conception, but he ultimately supported a conception of psychology as a natural science, according to which all mental phenomena are subject to natural law.[3] The problem, then, is that of distinguishing instances in which Kant uses the term "psychology" according to his own definition from those in which he follows the usage of his contemporaries. The second problem is that of determining whether the *Critique* contains its own "transcendental psychology" divorced from empirical and rational psychology, and if it does, whether this is a merit or a demerit. Interpreters of Kant are divided over both questions. Those who judge the presence of psychology to be a demerit tend to deemphasize the psychological discussions in the *Critique*; others, however, are happy to find a full-blown empirical psychology in that work. Although this is not the place for a full review of psychological interpretations of Kant or an assessment of what has been called "psychologism," it is fitting to investigate Kant's reasons for distinguishing his transcendental philosophy from empirical (and rational) psychology, and to examine how he used psychological vocabulary in his philosophical work.

I organize the psychological topics of the first *Critique* under four headings: the refutation of traditional rational psychology as given in the Paralogisms; the contrast between traditional empirical psychology and the transcendental philosophy of the Deduction; Kant's appeal to an implicit psychology in his taxonomy and theory of cognitive faculties throughout the *Critique*; and his new definitions of and support for empirical and rational psychology in the Doctrine of Method.

## 1. REFUTATION OF RATIONAL PSYCHOLOGY

Kant's vigorous attack on traditional rational psychology in the Paralogisms of Pure Reason constitutes his most extensive explicit discussion of psychology in the *Critique*.[4] Kant defined rational psychology, or the "rational doctrine of the soul" (*rationale Seelenlehre*), as the science of the object of inner sense, or the "I": "the expression 'I', as a thinking being, indeed signifies the object of that

psychology which may be entitled the 'rational doctrine of the soul', provided I seek to learn nothing more of the soul than what can be inferred independently of all experience (which determines me more specifically and *in concreto*) from this concept 'I', so far as it is found in all thought" (A 342 / B 400). As he succinctly put it, "I think" is "the sole text of rational psychology, from which the whole of its teaching must be developed" (A 343 / B 401). Kant dismissed the objection that the assertion 'I think', being based on inner experience, is itself empirical, contending that it abstracts from any specific object of perception, and so is not "empirical knowledge," but rather "knowledge of the empirical in general" (ibid.). As portrayed by Kant, rational psychology first applies the metaphysical concept of substance to its text, and then argues from the substantiality of the soul to its immateriality, from its simplicity to its incorruptibility, from its identity through time to continuity of personhood, and thence to the soul's spirituality and immortality (A 345 / B 403).

The only name Kant mentions in connection with rational psychology in either version of the Paralogisms is Moses Mendelssohn's. In the B version of the Paralogisms Kant credits Mendelssohn for raising and removing an objection to the traditional argument for the soul's immortality. According to the traditional argument, the soul, being simple, cannot cease to exist as bodies do, through the separation of its parts; Mendelssohn added a further argument to block the objection that a simple being might cease to exist simply by vanishing (B 413–14).[5] The unembellished argument from simplicity to incorruptibility and immortality had been common fare in previous rational psychology (as Kant well knew); indeed, such arguments belonged to its special province. Thus Wolff, in his *Psychologia empirica* (1st ed., 1732), argued from the empirical fact of consciousness to the conclusion that the soul exists (§§11–21). But he reserved for his *Psychologia rationalis* (1st ed., 1734) demonstrations that "body cannot think" because it cannot represent (§44), and that "the soul cannot be material" (§47); from these conclusions he further argued that "the soul is a simple substance" (using as a premise that it cannot communicate with – induce motion in – body, §46). His assertion of the soul's simplicity, along with an elaboration of the requisites for the continuity of one's personhood (cf. A 361–5), figured prominently in his alleged proof of the soul's immortality (§§729–47).[6] Similarly, Wolff's disciple Alexander Baumgarten argued in his *Metaphysica*



(1st ed., 1739) that, because the human soul is characterized by a single power, the power of representation (§744), it must be simple; from this conclusion he further reasoned that it "has no quantitative magnitude," and therefore that "the physical corruption of the human soul is intrinsically impossible (§§15, 705); i.e., the human soul is absolutely physically incorruptible" (§746). The latter conclusion figured crucially as a premise in his demonstration of the soul's immortality (§781).[7] Such arguments were not original with Wolff (earlier versions had been discussed by Descartes and Leibniz), nor were they limited in Kant's time to Wolff's followers (or to Mendelssohn): Christian Crusius in his *Entwurf der nothwendigen Vernunft-Wahrheiten* (1745), a work whose subject was limited to *a priori* metaphysics, including "metaphysical pneumatology" (or rational psychology), argued from the premise that the soul is a simple substance to the conclusion that it is incorruptible (§§473–4).[8]

Kant sought to expose the illegitimacy of these traditional arguments by showing that they exceed the bounds of possible experience and hence advance claims that transcend the domain of possible metaphysical knowledge. Thus, in the A version of the Paralogisms he begins his examination of the arguments of rational psychology with the following reminder, to which he repeatedly refers: "In the analytical part of the Transcendental Logic we have shown that pure categories, and among them that of substance, have in themselves no objective meaning, unless they rest on an intuition and can be applied to the manifold of this intuition as functions of synthetic unity" (A 348–9). He goes on to argue that although the "I" is the *logical* subject of all our thoughts, it cannot be regarded as a substance because it cannot be given in intuition; the pure category of substance can be properly applied only to objects that can be given in experience, that is, to objects of possible experience (A 349–50). Similarly, the claim of rational psychology, that the soul is simple, may be granted with respect to the "I" as the formal unity of thought (that is, as the formal concept of the unity of representations in a single subject), but this formal concept cannot be made to yield the conclusion that the soul is a simple substance (A 351–6). For, Kant contends, the logical unity of the "I" does not lead analytically to its substantial simplicity: The unified self might, for all we know, arise "from a collective unity of different substances acting together" (A 353 – though presumably not from mere organized matter, B 419–20); the claim of rational

psychology that the unity of thought arises from a simple substance is synthetic. For the purposes of rational psychology it would not do to base this synthetic proposition in experience, for experience cannot ground the necessity that rational psychology, as a science of reason, demands. In any case, the simple substance supposed to be the substratum of thought lies outside experience, as its putative substratum. For the latter reason, the proposition that the soul is simple could not be synthetic and *a priori*, given the earlier reminder that synthetic *a priori* knowledge is limited by the requirement that the categories must be applied to intuition, that is, to objects of possible experience (A 353). As Kant explains, the rational psychologist confuses the unity of the "I" as a formal condition of thought with the supposed ontological simplicity of the soul as a substance (A 354–5). Kant repeats these arguments in abbreviated form in B. (Of course, there are important differences between the two versions of the Paralogisms on other matters.)

In the end, Kant contended that although traditional rational psychology has no doctrine to teach, once criticized it can play two roles in the Critical Philosophy: It can serve to *discipline* the impulses of speculative reason by reminding us that both materialism and spiritualism are unfounded metaphysically (B 421; see also A 379, 383); and its idea of the soul as simple can serve a regulative function in the investigation of inner experience (A 672 / B 700).

## II. THE DEDUCTION: TRANSCENDENTAL PHILOSOPHY VS. EMPIRICAL PSYCHOLOGY

In the Transcendental Deduction Kant sought to establish the existence and objective validity of the categories (see Chapter 4 of this book). His arguments for these conclusions were not psychological, or so he claimed. In stark contrast with the most noteworthy of his eighteenth-century predecessors and contemporaries, Kant denied that empirical psychology was of use in answering philosophical questions about what he termed the "origin" and "validity" of cognitive claims. Although in neither version of the Deduction does he discuss empirical psychology in depth, in both he clearly distinguishes the aims and methods of transcendental philosophy from those of empirical psychology.[9]



The belief that the empirical study of the mind can importantly inform investigations of the characteristics and limitations of human cognition was widely shared by Kant's contemporaries, even when these contemporaries disagreed on other fundamental matters. David Hume is the most familiar of the authors who advocated using, as he termed it, a "science of human nature" to ground explanations of human cognition. Having marshaled skeptical arguments against the view that human reason can ground assertions of matters of fact that go beyond current evidence, he turned to empirically based associationistic psychology in order to explain human tendencies to form beliefs, and proceeded to reduce the principles governing belief-formation about matters of fact to three laws of association.[10] Moreover, the very Wolff who adopted a modified Leibnizian ontology of the soul as a spiritual substance nevertheless contended that empirical psychology is more fundamental than rational psychology in establishing doctrines about human cognition. He advocated taking an empirical approach toward the fundamental cognitive powers of the soul, and even toward the principles of logic.[11] Later, Johann Tetens undertook to investigate the "human understanding" using the method of "observation," a method he credited to Locke and to recent "psychologists" working toward an empirical theory of the soul (*Erfahrungs-Seelenlehre*).[12] By contrast, Crusius stands out among Kant's immediate predecessors because he denied that empirical psychology was relevant to his philosophical investigation of human reason; he argued that his investigation was metaphysical, that metaphysics seeks propositions known with absolute necessity, and that consequently it must proceed in an *a priori* manner (*Entwurf*, §459; cf. *Pure Reason*, A 848 / B 876).

Kant explicitly sets the project of the Deduction apart from empirical psychology at the beginning of his discussion. He acknowledges that empirical study might be of use in determining the "occasioning causes" by which the pure categories and forms of intuition are "first brought into action," and he credits Locke with performing the service of showing that they arise only with experience. He continues, however, by explaining that because a deduction of the categories must justify their *a priori* applicability (that is, their applicability independent of experience), the Deduction itself cannot use principles drawn from experience:

A *deduction* of the pure *a priori* concepts can never be obtained in this manner; it does not lie anywhere along this path, for in view of their subsequent employment, which must be entirely independent of experience, the pure concepts must be in a position to show a certificate of birth quite other than that of descent from experiences. This attempted physiological derivation, which cannot properly be called a deduction because it concerns a *quaestio facti*, I shall therefore entitle the explanation of the possession of pure cognition. It is therefore clear that the only deduction that can be given of the pure concepts is one that is transcendental, not empirical, and that the latter type of deduction, in respect to pure *a priori* concepts, is nothing but an idle pursuit, which could occupy only those who have failed to grasp the completely peculiar nature of these modes of cognition. (A 86–7 / B 119)

At first blush this passage may not seem pertinent to empirical psychology; it contrasts a transcendental deduction with an empirical or *physiological* explanation. But Kant here, as elsewhere, employs the term "physiology" to mean the "science of nature" in general; in accordance with this usage, he equates empirical psychology with the "physiology of inner sense" (A 347 / B 405). Kant several times reiterates the point that the empirical laws of inner sense – that is, the laws of empirical psychology – cannot serve to ground the Deduction (or its subarguments). At two places in the A Deduction he argues that the "laws of association," which are merely empirical laws, cannot provide the needed account of the necessary synthetic unity of apperception (A 100, 121). In the B Deduction he makes a similar point in distinguishing the empirical unity of consciousness, based on association, from "original" unity of consciousness, by stressing the contingency of the empirically based unity and thus its unsuitability for explaining the necessity and universality of the original or "objective" unity of consciousness (B 139–40). In the B Deduction he also distinguishes the transcendental synthesis of the imagination, which he ascribes to the "productive" imagination, from the synthesis produced by the "reproductive" imagination under the aegis of the empirical laws of association; the former, which concerns the *a priori* grounds for the applicability of the categories to sensibility (and hence to all objects of possible experience), he ascribes to transcendental philosophy, and the latter to the field of psychology (B 152).

Kant believed that empirical psychology, owing to its empirical status, could not serve as the basis for his deduction of the categories.



So much is clear. But it may also be that, independently of this problem, Kant found the distinctive content of empirical psychology – its mode of conceptualizing mental processes – to be conceptually incapable of serving the purposes of the Deduction. Although he did not explicitly distinguish the problem of the empirical status of empirical psychology from the problem of its conceptual inadequacy, it will be useful for us to distinguish and develop both problems.

Kant held that a deduction serves to answer what he, in accordance with the juridical terminology of his day, called the "question of right" (*quid juris*) as opposed to the "question of fact" (*quid facti*).[13] In a legal case, the question of fact asks, for example, who has possession of a piece of property, while the question of right demands the grounds for legal title to it. In the Deduction, the "right" under dispute pertains to the propriety of applying the categories in an *a priori* manner. As Kant puts it: "among the various concepts which form the highly complicated web of human knowledge, there are some that are destined for pure *a priori* employment (completely independent of all experience), and their right to be so employed always demands a deduction; because proofs from experience do not suffice to legitimize this kind of employment, we are faced with the problem of how these concepts can relate to objects that they do not derive from any experience" (A 85 / B 117). From this passage, the insufficiency of empirical proofs for establishing the *a priori* applicability of the categories may seem quite straightforward: What is demanded is justification for applying the categories independently of experience – ipso facto, empirical considerations, which essentially include an appeal to experience, cannot meet this demand.

But as these very passages, and indeed the subsequent development of the Deduction, make clear, Kant's reason for banishing empirical proofs and hence empirical psychology from the deduction of the categories is not merely that they are empirical and hence do not pertain to the *a priori*; it is rather that because they are empirical they cannot meet the standards of justification demanded by the Deduction. For what needs to be established is the *objective validity* of any *a priori* employment of the categories (A 89 / B 122), as well as the necessity and universal validity of principles derived from the categories, such as the law of cause (A 90–2 / B 122–4; A 766–7 / B 794–5). But as Kant remarks in the Introduction, "experience never

confers on its judgments true or strict, but only assumed and comparative universality, through induction, so that properly one can only say: So far as we have observed up to now, there is no exception to this or that rule. If, then, a judgment is thought with strict universality, that is, so that no exception whatsoever is allowed as possible, it is not drawn from experience, but is valid absolutely *a priori*" (B 3–4). The same holds for necessity (B 3; see also A 91 / B 124). Consequently no empirical investigation, and hence no finding of empirical psychology, could support the claim that the categories have necessary and universal validity. As Kant further observes, it is for this reason that empirical laws of association, which govern the connections among representations, cannot serve to explain the necessary connectability of representations, or what Kant calls the synthetic unity of apperception (A 100, 121; B 151–2).

Kant does not make explicit the second of the aforementioned reasons that empirical psychology cannot serve the needs of the Deduction (namely conceptual inadequacy), but it lies implicit in his division between questions of fact and questions of right. Kant considered empirical psychology to be a branch of natural science, the branch that investigates the laws of inner sense – that is, the laws that govern the sequence of representations present to the mind. The only laws of empirical psychology Kant explicitly mentions are the laws of association. In the Deduction his only explicit criticism of these laws is that they are empirical and hence cannot explain the possibility of necessary judgments. But even if the laws could be established universally and necessarily Kant would still reject them from the Deduction, for such laws could do no more than describe the sequence of representations in inner sense in terms of mere causal sequences. The laws of association are couched in the language of natural law, which is a language of factual relations. But the Deduction requires an argument cast in the language of right or entitlement, for it aims to show that the application of the categories to all possible experience is justified. A natural law showing that the categories apply necessarily to all possible experience would not show this application to be justified, any more than in Kant's moral theory a universal and necessary natural law that caused one to act in accordance with the moral law, and did so independently of one's grasp of the moral law, would make one's actions moral.

The reasons Kant gives for rejecting empirical considerations from moral theory interestingly parallel the two sorts of considerations given here for rejecting empirical psychology from the Deduction. In both the first and second *Critiques* Kant at first rejects practical principles of action based on desire or inclination merely on the grounds that they are empirical and hence unable to serve in a true science of morality possessed of necessity, observing that such a science must be established *a priori* (*Pure Reason*, A 54–5 / B 79; *Practical Reason*, 5:21–2). But in fact, he also held that even if the laws of desire could be known to hold universally and necessarily they still would not provide a suitable basis for morality, for their content would be "physical" rather than moral (*Practical Reason*, 5:26) and they would be unable to specify what ought to be done, being limited to what necessarily and universally is done (A 549–50 / B 577–8). Similarly, a universal and necessary law of association would merely show that all representations *are* connected according to a rule, but it would not justify the objective validity of the law of cause, for that would require showing that the mind *is entitled* to require that all representations be so connected. Perhaps because, in his view, the principles of desire and the laws of association could be rejected on the grounds that they are empirical and hence lack necessity, Kant devoted little attention to showing that as laws of nature they could not in any case yield a moral law or answer the question of epistemic right. Nonetheless, it is reasonable to conclude that in each case even if the laws were necessary, they could not speak to the matters in question.



## III. THE FIRST *CRITIQUE*: AN EXERCISE IN TRANSCENDENTAL PSYCHOLOGY?

Although Kant himself was clear in denying the possibility of traditional rational psychology and in expounding the irrelevance of empirical psychology to his project in the first *Critique*, there have been readers of this work, from the time of its publication down to the present, who have contended that it is primarily a work in psychology. Assessments of the precise character of this psychology have varied, as have judgments about its propriety for Kant's purposes. Some have held the psychology to be empirical in spite of Kant's protests, others have suggested that the psychology purports to be noumenal, while still others have assigned it its own transcen-

dental status. Further, some have contended that it was proper for Kant to ground his work in empirical psychology, even though he did not recognize this fact, while others have found Kant's (alleged) use of psychological concepts in the Aesthetic and Deduction to reveal a deep-seated conceptual confusion, a confusion ultimately labeled "psychologism." Finally, those who judge the psychology to be noumenal object that it violates Kant's prohibition of claims to know the noumenal self.[14]

Evidence that Kant engaged in psychology has not seemed difficult to find. For beyond the few passages of the Paralogisms and the Deduction canvassed in our investigation of Kant's negative claims about psychology, both the Aesthetic and Deduction liberally invoke terms and concepts that seem prima facie equivalent to those used in the empirical and rational psychology of his contemporaries. Thus, he distinguishes between "inner" and "outer sense" as two sources of knowledge (A 22 / B 37), thereby seemingly subscribing to the scholastic distinction, adopted by Baumgarten, between external senses such as touch and vision and an internal sense directed toward states of the mind itself. The Aesthetic and Analytic posit a division of the cognitive faculties into sensibility, imagination, understanding, judgment, and reason, thereby echoing similar divisions in scholastic and Wolffian psychology.[15] Further, having asserted that geometry must be based on *a priori* intuition, and in connection with his own distinction between the "form" and "matter" of intuition, Kants asks: "How, then, can there be inherent in the mind an outer intuition, which precedes the objects themselves, and in which the concept of these objects can be determined *a priori*?", a question that seems to require that an innate causal sensory mechanism be specified, such as seems in fact to be posited by Kant's answer to the question: "Manifestly, not otherwise than insofar as the intuition has its seat in the subject only, as the formal disposition of the subject to be affected by objects, and thereby to obtain *immediate representation*, that is, *intuition*, of them; therefore only as the form of outer *sense* in general" (B 41). In the Deduction Kant introduces premises that ascribe a special activity to imagination and understanding, that of synthesis, and he writes as if this activity were a causal process in the mind: "By *synthesis*, in its most general meaning, I understand the act of putting different representations together, and of grasping their multiplicity in one cognition"



(A 77 / B 103). Of course, he places great weight on the requirement that representations be connectable through a synthesis, which he expresses as the demand for a unity of apperception.

At one point Kant claims to have direct knowledge, seemingly through introspection, of the self as the subject of the synthetic activities underlying the unity of apperception. In a discussion of the Third Antinomy, he asserts:

> Man, however, who knows all the rest of nature solely through the senses, knows himself also through pure apperception, and indeed in acts and inner determinations that he cannot reckon among the impressions of the senses. He is thus to himself, on the one hand phenomenon, and on the other hand however, in respect of certain faculties, a purely intelligible object, because the acts of these faculties can in no way be classed with the receptivity of sensibility. We entitle these faculties understanding and reason. . . .
>
> (A 546–7 / B 574–5)

However problematically and atypically, Kant here asserts outright that he knows himself as a purely intelligible object. More typically, he maintains that the only knowledge we have of ourselves is empirical; yet even in making this point he nonetheless allows that we have "consciousness" of the self as the locus of the synthesizing activity:

> in the transcendental synthesis of the manifold of representations in general, and therefore in the synthetic original unity of apperception, I am conscious of myself, not as I appear to myself, nor as I am in myself, but only *that* I am. This *representation* is a *thought*, not an *intuition*. Now in order to *know* ourselves, there is required in addition to the act of thought, which brings the manifold of every possible intuition to the unity of apperception, a determinate mode of intuition whereby this manifold is given. . . . The consciousness of one's self is thus far from being a cognition of one's self. . . .
>
> (B 157–8)

Even here, Kant is willing to assert that "I exist as an intelligence which is conscious solely of its power of combination" (B 158), an assertion it would be difficult to justify except by appeal to consciousness of the self as synthesizer. Additional passages in which Kant seems to ground his assertions in a sort of reflective introspection are not difficult to find, as when he begins the Introduction to the second edition of the *Critique* with the remark that "long prac-

tice has made us attentive to and skilled at separating" the elements of cognition that "our own faculty of cognition" adds to the "raw material" provided by the senses; that is, by long practice we can become skilled at separating pure from empirical cognition (B 1–2).

The central arguments of the *Critique* exhibit, then, at least four seemingly psychological features: (1) the division of the mind into cognitive faculties (inner and outer sense, imagination, understanding, judgment, and reason); (2) the positing of apparently innate mental structures, such as the forms of intuition or the categories; (3) the appeal to mental activities such as synthesis in explaining the conditions on the possibility of experience, and hence in "deducing" the validity of the categories; and (4) the apparent appeal to introspection in establishing the existence of the synthesizing activity of apperception, and in making other distinctions, such as that between empirical and pure cognition. We need to consider whether some or all of these instances are correctly classified as psychological, and what would follow if they are.

Let us consider points (3) and (4) in tandem. On one construal of these points, Kant becomes subject to the charge that in describing the synthetic activity of understanding, he purports to describe the noumenal activity of the self, thereby violating his own stated prescription against claims to know noumena; he also becomes guilty of describing such activity on the basis of experience, in violation of his assertion that noumena lay beyond the pale of experience. In fact I have found only one passage in which Kant claims to have *knowledge* of the self as an intelligible object (the one already quoted). It is plausible to suppose that in discussing the Third Antinomy, with its assertion that we can "think" the noumenal self, Kant in a momentary lapse overstepped his bounds and claimed that this thinking of the noumenal self amounts to "knowing" it as an intelligible object. But even if, as here suggested, one discounts the noumenal reading of synthesis, that would not remove all difficulty. For it is clear that Kant distinguishes the transcendental synthesis entailed by the unity of apperception from the merely empirical synthesis known through inner sense and hence available as phenomenon. Indeed, the transcendental synthesis presumably could not be phenomenal, for it is the process by which the phenomena of inner sense are first constituted. But if the transcendental synthesis is neither phenomenal nor noumenal, what is its status?



One way of answering this question is to assign the transcendental synthesis, and indeed the forms of intuition and the categories, their own "transcendental" status, making them neither objects of inner sense (and empirical psychology) nor noumenal processes (and objects of rational psychology). Such a strategy of course requires determining how, precisely, a "transcendental" process should be conceived. We may further consider the possibility that the forms of intuition and the categories (from item 2) are themselves neither objects of empirical psychology nor features of the noumenal self, and ask whether they, along with the attendant division of the faculties (as in item 1), should also be assigned a transcendental status.

How might one decide whether items (1)–(4) constitute a transcendental psychology, or indeed a psychology of any kind? One way to determine whether something is psychological is to delimit a domain of subject-matter as psychological and to consider whether the target items belong to that domain. At the time of Kant the domain of psychology was denominated in various ways. Some took its subject-matter to be soul (considered as a simple substance), while others took its object to be mental phenomena, or those phenomena available to "inner sense." In either case, the considerations previously reviewed disqualify transcendental psychology from membership in the domain of psychology proper. The subject-matter of Kant's transcendental investigation is epistemic. In investigating the cognitive faculties, the forms of intuition, the categories, and the transcendental synthesis Kant is seeking conditions for knowledge; his investigation is directed neither at the soul as a simple substance nor at the phenomena of inner sense. It remains to be considered whether in carrying out this investigation he was forced to rely on psychology.

Kant stresses the epistemic character of his investigation in an oft-quoted passage from the Preface to the first edition. He observes that his search for the "rules and limits" of the understanding has both an objective and a subjective side.

> The one refers to the objects of pure understanding, and is intended to demonstrate and render comprehensible the objective validity of its *a priori* concepts; just for that reason it is also essential to my purposes. The other seeks to investigate the pure understanding itself, its possibility and the cognitive faculties upon which it rests, and so examines it in its subjective aspect; although this latter exposition is of great importance for my chief

purpose, it is not essential to it. For the chief question always remains: What and how much can the understanding and reason know apart from all experience? and not: How is the faculty of thought itself possible?

(A xvi–xvii)

Here Kant distinguishes the investigation of "cognitive faculties" and of "the faculty of thought itself" from the explication of the objective validity of knowledge claims, and particularly (as becomes clear) of claims to synthetic *a priori* knowledge.

Despite Kant's own clear statement that his enterprise is aimed at determining conditions and constraints on knowledge, he obviously did refer to the "subjective" side of the investigation quite regularly, as evidenced by our items (1)–(4). So even if the cognitive subject-matter Kant considers is epistemic as opposed to psychological, perhaps he nonetheless relied on psychological concepts and modes of explanation in constructing his exposition, or explanation, of the possibility of synthetic *a priori* knowledge.

One way to determine whether his explanations are psychological is to consider whether he appeals to psychological argumentation when introducing such concepts as that of a form of intuition or a category. Does he appeal to the data of inner sense? Does he invoke a ready-made psychological theory? The answer, I think, is that however much he may have been indebted to suggestions from psychological theory in his own understanding of the concepts he introduced, his arguments for introducing them were not psychological but transcendental. Although it is notoriously difficult to state the essence of such arguments, it is clear how the arguments proceeded in practice. Kant argued by elimination from a set list of candidate explanations of the possibility of a given cognitive achievement; by considering whether each of the explanations was adequate to the task of explaining this achievement, he arrived at the conclusion that only one such explanation was. By way of example, consider his argument from the second edition version of the Aesthetic for introducing space as a form of sensibility:

> Geometry is a science that determines the properties of space synthetically and yet *a priori*. What, then, must the representation of space be, in order that such knowledge of it may be possible? It must in its origin be intuition; for from a mere concept no propositions can be obtained that go beyond the concept – as happens in geometry (Introduction, V). But this intuition must be *a priori*, that is, it must be met with in us prior to any perception of an object, and must therefore be pure, not empirical, intuition. For geometrical propositions are one and all apodictic, that is, are bound up with the consciousness of their necessity; for instance, that space has only three dimensions. Such propositions cannot be empirical or (in other words) judgments of experience, nor can they be derived from such judgments (Introduction, II). (B 40–1)



In the quotation, Kant considers three possible bases for geometry. It might be based on the analysis of concepts, in which case it would be analytic; it might be based on experience, and thus be synthetic *a posteriori*; or it might be synthetic *a priori*. He rules out the first of these possibilities, that geometry is analytic, by contending that geometry cannot be based on concepts alone; he later explains that geometrical demonstrations always depend upon a process of construction that requires an essential appeal to intuition, and hence goes beyond the mere analysis of concepts (A 712–38 / B 740–66). Against the second possibility, Kant argues that the intuitions in question must be pure, not empirical, in order to explain the apodictic certainty of geometry. Kant therefore concludes that geometry must have a synthetic *a priori* foundation in intuition; not in an actual intuition given before experience, but in an *a priori* constraint on any possible intuiton, which requires that all "outer" intuitions conform to the space of Euclid's geometry (see Chapter 2 in this book). His claim is not, then, that a certain form of intuition is innate – a claim about the psychological development of individuals presumably to be grounded in empirical study of the abilities of infants and young animals – but that a certain form of intuition must be posited because it provides the only means of explicating actual geometrical knowledge (see 11:79). Similarly, in the Deduction he attempts to show that the categories provide conditions for the very possibility of experience (see Chapter 4). Again, it would be irrelevant to argue that the categories are innate, for such an argument could only support an empirical claim about the psychological development of an individual; it could not establish that the categories are necessary for determining the synthesis required by the unity of apperception.

If it belongs to philosophy rather than to psychology to investigate the conditions for synthetic *a priori* knowledge, by examining and ruling out on conceptual grounds various candidate explications of

the possibility of such knowledge, then Kant was right to call his investigation "transcendental philosophy" rather than "transcendental psychology." Of course, even in arguing for his transcendental philosophy Kant surely must appeal to experience to ground some basic claims, for example, that we experience in space and time, that we are finite intelligences, that we have sensations and feelings. But this sort of "empirical" data was accepted even by Crusius, the most avowedly aprioristic metaphysician of Kant's time (*Entwurf*, §§425–6). And reasonably so. If it were otherwise, any sort of reflection on human experience whatsoever would count as "empirical," effectively rendering all philosophy empirical by stipulation. For the purpose of reading and interpreting Kant, and for many other purposes, we are well advised to distinguish between treating reflection on ordinary experience as a minimal starting point for philosophy and adopting an empirical approach when formulating and confirming explanatory theses in philosophy. Kant argued that his Critical Philosophy could not take the latter approach; he took the legitimacy of the former for granted.

Nevertheless, Kant's transcendental program has implications for psychology, or at least for empirical science, even if it was not psychological in its fundamental aim nor in its mode of argument. For Kant claimed to establish, through his arguments for space as the form of outer intuition, that physical space must be the space of Euclid. Notoriously, this claim came under attack in the nineteenth century by Bernard Riemann, Hermann Helmholtz, and others.[16] Under this attack Kant's claim about the spatial form of intuition must either be pared back to a psychological claim about the character of human sensory experience independent of the character of physical space – thereby undercutting Kant's conception of the relationship between the grounds for geometry *per se* and the grounds for its application to physical space (B 147; A 165–6 / B 206; A 224 / B 271; A 239 / B 299) – or it must be accepted as a claim about the character of perceptual and physical space that turned out to be empirical, not *a priori*, contingent, not necessary, and indeed, as is widely held, false. However this may be, Kant's transcendental program might nevertheless have psychological implications for our own day, if it should turn out that psychology can produce a science of cognition, as some have suggested. In the end, the psychological relevance of the *Critique* may depend upon whether psychology develops in such a way that Kant's transcendental suggestions about the structure of cognition can be appreciated.



## IV. KANT'S OWN RATIONAL AND EMPIRICAL PSYCHOLOGY

Although we have examined Kant's attempts to set transcendental philosophy apart from empirical psychology, we have yet to examine his considered view of whether empirical psychology can attain the status of science.[17] Perhaps his most notorious remarks on this subject are those from the preface to the *Metaphysical Foundations of Natural Science*, to the effect that empirical psychology will never be a proper science. While we must give these remarks their due, they should not be allowed to obscure Kant's basic position that the phenomena of empirical psychology are strictly bound by the law of cause just as are the phenomena of physics. Let us first consider this latter aspect of Kant's position as it is expressed in the first *Critique* and the *Prolegomena*.

In the third chapter of the Transcendental Doctrine of Method Kant laid out his conception of the systematic relations among the various branches of philosophy. In the body of the *Critique* he had, of course, discussed various branches of philosophy, including metaphysics and rational psychology, but under their traditional descriptions. Now, with a completed critique of pure reason extant, he proceeds to outline the "architectonic of pure reason," which he defines as the art of constructing systems of all knowledge arising from pure reason (A 832 / B 860). This chapter contains some mildly paradoxical branches of "pure philosophy," that is, of the part of philosophy that, in contrast with empirical philosophy, is based solely in pure reason. For, having argued against the possibility of metaphysics traditionally conceived, Kant proceeds to set forth the possibility of a new systematic metaphysics and he includes among its branches a new "rational psychology" containing *a priori* principles governing the phenomena of inner sense. The branches of philosophy he now describes draw their metaphysical principles, at least in the case of the metaphysics of nature, from the Analytic of Principles in the *Critique*; these include the principle of the permanence of substance and the law of cause.

In his architectonic, Kant first divides pure philosophy from empiri-

cal philosophy. He subdivides pure philosophy in turn into (i) the propadeutic investigation of pure reason itself, which he terms "criticism" and of which the *Critique* is an example, and (ii) "the system of pure reason (science), the whole body (true as well as illusory) of philosophical cognition arising out of pure reason (presented) in systematic connection, which is entitled *metaphysics*" (A 841 / B 869). Metaphysics divides into practical and speculative parts, or into a metaphysics of morals and a metaphysics of nature. The latter has two branches, the first being transcendental philosophy, which "treats only of the understanding and of reason itself, in a system of all concepts and principles that relate to objects in general, without taking account of objects that may be given": it provides such *ontology* as is available in Kant's reconstituted discipline of metaphysics. The second branch is the "physiology of pure reason," that is, the rational physiology (or science of nature) of given objects, or of objects that can be given in experience. This pure or rational physiology again has two branches, transcendent and immanent; the first pertains to "that connection of objects of experience which transcends all experience" – here, presumably, is an instance of one of the illusory branches of philosophical cognition Kant has mentioned – and the second pertains to the cognition of nature "insofar as its cognition can be applied in experience" (A 845 / B 873). Transcendent physiology thus includes the empty speculative disciplines of rational cosmology (the connection of nature as a whole) and rational theology (the relation of nature as a whole to a being above nature).

Immanent rational physiology thus provides the only substantive *a priori* principles that pertain to nature as an object of possible experience. The only worked out version we have of this body of doctrine is that found in the *Metaphysical Foundations of Natural Science*. Here Kant applies principles from the Analytic of Principles to the (empirically derived) concept of motion and purports thereby to derive two of Newton's laws of motion in an *a priori* manner. Yet in the Methodology, Kant announces the possibility not only of a rational physics, but also of a rational psychology.[18] This rational psychology would set *a priori* conditions on the object of inner sense, that is, on the succession of representations in time. In the *Critique* Kant does not give any indication of the content of his reconstituted version of rational psychology. But in the *Prolegomena* he gives one hint. In the second part, which treats pure natural



science, he characterizes what he terms "a universal science of nature in the strict sense": "Such a science must bring nature in general, whether it regards the object of the external senses or that of the internal sense (the object of physics as well as psychology), under universal laws." Universal natural science comprises the objects of both physics and psychology. Kant admits that there are only a few principles with the required generality, but he is able to name two: "the propositions that 'substance is permanent', and that 'every event is determined by a cause according to constant laws' . . . These are actual universal laws of nature, which subsist completely *a priori*" (*Prolegomena*, §15, 4:295). Although Kant does not go on to give examples of these principles as applied to inner sense, presumably the persistence of the "I" as the ground of the empirical unity of the self – not as a simple, spiritual being, but merely as a permanent substratum in time – is an example of the first principle, and the law (or laws) of association of representations is an example of the second principle. In any event, it is evident that Kant is committed to the view that the representations of inner sense, no less than the objects of outer sense, are subject to universal natural laws.

At first blush, Kant's commitment to universal laws of psychology may seem hard to square with his opinion, expressed in the preface of the *Metaphysical Foundations of Natural Science*, that empirical psychology is far removed from "the rank of what may properly be called natural science" (4:471). Upon closer examination, however, it becomes apparent that his denial of scientific status to psychology did not result from any doubt that there are universal natural laws in psychology; rather, it resulted from specific methodological requirements he imposed on any "proper" science, together with his beliefs about the applicability of these requirements to psychology.

Kant would admit nothing to the rank of science whose subject-matter could not be handled mathematically. As he puts it, "in every special doctrine of nature only so much science proper can be found as there is mathematics in it" (4:470). Every proper science also has a pure or rational part that "grounds" the empirical part, and the principles of which apply *a priori* to objects of possible experience. Kant argues that the restriction of science to that which can be treated mathematically follows from the basic condition that in order for a rational special science to apply *a priori* to objects, it must specify *a priori* conditions not only for concepts of its objects, but also for

their intuition. (Recall that for Kant no object can be given without an intuition.) As he puts it, "in order to cognize the possibility of determinate natural things, and hence to cognize them *a priori*, there is further required that the intuition corresponding to the concept be given *a priori*, that is, that the concept be constructed." But, he further contends, "rational cognition through the construction of concepts is mathematical" (4:470). Here he seems to rely on his general doctrine that mathematical concepts must be constructed in intuition. From this doctrine it does not, however, follow immediately that any constructed concept must be mathematical. The doctrine only tells us that mathematics requires *a priori* construction, not that all *a priori* constructions are mathematical. But it is difficult to imagine any basis other than the *a priori* structure of the forms of intuition for "constructing" objects *a priori*, and Kant in effect equates the *a priori* forms space and time, in light of their "formal" characteristics, with the objects of the mathematical sciences, namely, those of geometry and arithmetic.

Granting for the sake of argument that science requires mathematization, let us pursue Kant's argument that psychology (whether rational or empirical) admits no mathematical construction of its objects. He argues that the "empirical doctrine of the soul" cannot achieve the rank of natural science,

> because mathematics cannot be applied to the phenomena of internal sense and their laws, unless one might want to take into consideration merely the law of continuity in the flow of internal changes in inner sense. But the enlargement of cognition so attained would bear much the same relation to that which mathematics provides for the doctrine of body, as the doctrine of the properties of the straight line bears to the whole of geometry. For the pure inner intuition in which the soul's appearances are to be constructed is time, which has only one dimension. (4:471)

The problem is not that there are no laws of psychology, but that such laws apparently cannot be constructed *a priori* except through the minimally informative construction of time as a line. But if no *a priori* construction is possible, psychology can at best be empirical, and can never admit of the necessity and universality that befits science.

This argument is problematic for reasons internal to the Kantian perspective and also because of the constraints it places on empirical



science. Internally, it is not clear that the only *a priori* mathematical result pertaining to internal sense is that of the "straight line" of continuity in time. Indeed, Kant himself, in the Anticipations of Perception, invites one such *a priori* application, in arguing that "in all appearances, the real that is object of sensation has intensive magnitude, that is, a degree" (B 207). Rational psychology apparently can declare that sensations have a degree. This in itself is no great advance over the establishment of continuous linear flow in accordance to law. There would be an advance, however, if it were possible to construct *a priori* a relation between intensity and the laws of succession in time, such as might be expected in a law of association according to which sensations with similar intensity become associated. This task would, however, presumably seem as hopeless to Kant as did the *a priori* construction of the specific laws of attraction and repulsion between "matters," laws that might constitute an *a priori* chemistry (4:470–1).

But granting that psychology cannot construct its laws *a priori*, does that preclude it from the status of science? Why could psychology not discover mathematical laws through empirical research? If it did so, its doctrine could meet one of the prime requirements of science in Kant's day (and our own), for the laws could be used to order systematic explanations; that is, if the laws were mathematical, even if empirically discovered, observed (or expected) phenomena could be derived from them mathematically. The sole problem on this eventuality is that the specific laws, because of their empirical basis, would not be known with universality and necessity, and so would not, in Kant's view, count as science. On the grounds Kant stated in the *Metaphysical Foundations*, nothing can be a science whose basic structure cannot be constructed *a priori*, as the laws of physics were in that work. The requirement of *a priori* constructibility may seem too great a restriction on empirical science, for it would banish from the domain of natural science any body of doctrine, no matter how mathematically well ordered its explanations, whose principles could not be constructed *a priori*. In any event, it turns out that the reason Kant ruled out the possibility of a scientific psychology was not a claim that mathematics could not be applied to inner sense at all, but that it could not be applied *a priori*. Indeed, given what he says in the Anticipations of Perception, it is plausible to suppose that he believed mathematics could be applied to the

matter of perception. Consequently, if one is willing to accept that there can be sciences whose laws cannot be constructed *a priori* but are empirically discovered, Kant has provided no argument against a mathematical science of psychology of that type.

Be that as it may, Kant had a further methodological reason for pessimism about the prospects of empirical psychology. He doubted that experiments could be carried out on the phenomena of inner sense. He argued that such experiments are impossible either on ourselves or through the observation of others. We cannot conduct them on ourselves because "the manifold of inner observation is separated only by mere thought-division, but cannot be kept separate and connected again at will" (4:471). Presumably Kant is here contrasting the case of experimentation with external objects, in which the objects can be manipulated repeatedly at will, with the case of internal sense, in which the will cannot directly determine the flow of representations. By saying that the objects of inner sense can be separated "only by mere thought-division," he may be claiming that such manipulations of the phenomena of internal sense as can be performed will be mere imaginary thought-experiments. This argument is not compelling. Consider a possible study of the associative law of contiguity. Although one cannot cause pairs of sensations to be presented to inner sense in temporal contiguity merely by willing that it be so, one can will that external objects be presented to one's senses in such a way that pairs of similar sensations are presented to inner sense in the appropriate manner; one can then cause one of the pair to be presented at a later time, in order to test whether there arises an expectation of the other member of the pair. Moreover, it is difficult to see why such experiments could not be carried out on others besides one's self. However, Kant contends that "even less does another thinking subject submit to our investigations in such a way as to be conformable to our purposes, and even the observation itself alters and distorts the state of the object observed" (4:471). The plausibility of this remark depends on what the subject is being asked to do. One might expect subjects to be willing to submit to an experiment of the sort just envisioned. Furthermore, Kant's charge that the observation distorts the object observed may apply only to some cases. If one is investigating the cognition of divination or of distraction (examples from the *Anthropology*, 7:187, 206), Kant seems right. He might also be right if one is asking subjects to report the apparent size of objects (the attitude taken by the subject in such cases can be all important, as writers contemporary to Kant were aware).[19] But simpler aspects of visual experience might well be made the subject of report without distortion, within appropriate bounds of precision. At any rate, significant numbers of Kant's near contemporaries believed they were, and subsequent investigations in psychophysics support their contention.[20]



In any case, Kant's methodological pessimism should not be allowed to obscure his certainty that there are psychological laws governing the phenomena of inner sense. Perhaps ironically, the nineteenth and early twentieth centuries have seen a complete reversal of the methodological picture painted by Kant. Precise mathematical measurements became possible in psychophysics, and experimental techniques were applied with considerable success in studies of sensory perception and of simple memory tasks. And although the Kantian faith that there are proper laws of inner sense, or of the combination of representations, remained strong within psychology throughout the century following Kant, the twentieth century has seen a radical shift from the search for simple, universal laws for combining mental representations, toward a search for the particular mechanisms that underlie distinct cognitive abilities such as depth perception by means of stereoscopic vision or short-term memory for letters and numbers.

Thus, neither Kant's account of the shortcomings of empirical psychology nor his implied conception of the systematic structure of the science (in terms of simple universal laws) has proved lasting. By contrast, his criticisms of rational psychology were devastating, and that discipline never really revived. Ultimately, though, his most permanent contribution may be his distinction between his own philosophical project in the Deduction and the aims of empirical, natural-scientific psychology. That distinction and its descendants, such as the more recent distinction between the "logical space of reasons" and the "logical space of causes,"[21] mark out a fundamental divide between the natural science of mental processes and investigation of the logical, conceptual, and justificatory order of thought. The latter division remains controversial, which is to say that the question of the ultimate viability of the Kantian distinction remains contested. But the most important philosophical contributions often take the form, not of definitive solutions to a problem, but of setting

a problem space. Kant's most lasting contribution to psychology as science and as philosophy may well be of this important kind.

NOTES

1 The method of citation for Kant's works is described in the frontmatter of the present volume. The works of other authors are cited by short title in the text when practical; complete titles are given in the attendant note. I am responsible for all translations, though for Kant's works I have consulted and sometimes partially adopted the standard translations as listed in the references.

2 General treatments of psychology in Kant's works include Jürgen Bona Meyer, *Kants Psychologie* (Berlin, 1870); Kurt Burchardt, *Kants Psychologie im Verhältnis zur transzendentalen Methode* (Berlin, 1911); Vladimir Satura, *Kants Erkenntnispsychologie*, Kantstudien Ergänzungshefte no. 101 (Bonn: Bouvier, 1971); and Patricia Kitcher, *Kant's Transcendental Psychology* (New York: Oxford University Press, 1990).

3 The most extensive discussion of psychology in the time of Kant is Max Dessoir, *Geschichte der neueren deutschen Psychologie*, 2d ed. (Berlin, 1902). Kant's discussion of natural laws in psychology is examined in section IV herein. On his early views on the soul and their subsequent development, see Karl Ameriks, *Kant's Theory of Mind: An Analysis of the Paralogisms of Pure Reason* (Oxford: Oxford University Press, 1982).

4 Recent discussions of Kant's attack on rational psychology include Jonathan Bennett, *Kant's Dialectic* (Cambridge: Cambridge University Press, 1974), chs. 4–6; Alfons Kalter, *Kant's vierter Paralogismus: Eine entwicklungsgeschichtliche Untersuchung zum Paralogismenkapitel der ersten Ausgabe der Kritik der reinen Vernunft* (Meisenheim am Glan: Anton Hain, 1975); W. H. Walsh, *Kant's Criticism of Metaphysics* (Edinburgh: Edinburgh University Press, 1975), §31; Ameriks, *Kant's Theory of Mind*; Henry E. Allison, *Kant's Transcendental Idealism: An Interpretation and Defense* (New Haven, Conn.: Yale University Press, 1983), ch. 13; and Kitcher, *Kant's Transcendental Psychology*, ch. 7.

5 Moses Mendelssohn, *Phädon* (1767; 2d ed., 1768; 3d ed., 1769), Zweytes Gespräch, and appendix to second edition, in his *Gesammelte Schriften*, F. Bamberger and L. Strauss, eds. (Berlin, 1932), 3.1:89–101, 131–5; and "Abhandlung von der Unkörperlichkeit der menschlichen Seele" (1785), dritte Betrachtung, ibid., 3.1:171–6.

6 The citations and quotations are from Christian Wolff, *Psychologia empirica methodo scientifica pertractata, qua ea, quae de anima humana indubia experientiae fide constant, continentur*, new ed. (Frankfurt and Leipzig, 1738) and *Psychologia rationalis methodo scientifica pertractata, qua ea, quae de anima humana indubia experientiae fide innotescunt, per essentiam et naturam animae explicantur*, new ed. (Frankfurt and Leipzig, 1740).

7 Citations and quotations from Alexander Gottlieb Baumgarten, *Metaphysica*, 7th ed. (Halle, 1779).

8 Christian August Crusius, *Entwurf der nothwendigen Vernunft-Wahrheiten, wiefern sie den zufälligen entgegen gesetzet werden* (Leipzig, 1745).

9 The role of psychology in the Deduction has been much discussed, as is apparent from these selected references: Norman Kemp Smith, *A Commentary to Kant's "Critique of Pure Reason,"* 2d ed. (London: Macmillan, 1923), pp. 234–48; H. J. De Vleeschauwer, *La Déduction transcendentale dans l'oeuvre de Kant*, 3 vols. (Antwerp: De Sikkel, 1934–7), passim; Robert Paul Wolff, *Kant's Theory of Mental Activity* (Cambridge, Mass.: Harvard University Press, 1963), pp. 100–2, 176–7; Jonathan Bennett, *Kant's Analytic* (Cambridge: Cambridge University Press, 1966), pp. 111–17; P. F. Strawson, *The Bounds of Sense: An Essay on Kant's Critique of Pure Reason* (London: Methuen, 1966), pp. 93–7; W. H. Walsh, "Philosophy and Psychology in Kant's Critique," *Kantstudien* 57 (1966): 186–98; Dieter Henrich, *Identität und Objektivität: Eine Untersuchung über Kants transzendentale Deduktion* (Heidelberg: Carl Winter, 1976); Paul Guyer, "Psychology and the Transcendental Deduction," in Eckart Förster, ed., *Kant's Transcendental Deductions: The Three "Critiques" and the "Opus postumum"* (Stanford, Calif.: Stanford University Press, 1989), pp. 47–68; and Kitcher, *Kant's Transcendental Psychology*, chs. 3–6.

10 Hume's program for investigating the origin of belief through a science of human nature is put forward in his *Treatise of Human Nature* (London, 1739–40), Introduction (see also Bk. 1, pt. 1, §§1–3 and Bk. 1, pt. 3), and *Inquiry Concerning Human Understanding* (London, 1748), §§1–3.

11 Prolegomena to *Empirical Psychology*, §9, as translated from Wolff's *Psychologia empirica* by Robert J. Richards in his "Christian Wolff's Prolegomena to Empirical and Rational Psychology: Translation and Commentary," *Proceedings of the American Philosophical Society* 124 (1980): 227–39.

12 Johann Nicolas Tetens, *Philosophische Versuche über die menschliche Nature und ihre Entwickelung*, 2 vols. (Leipzig, 1777), 1:iii–iv.

13 On this juridical distinction and Kant's use of it, see Dieter Henrich, "Kant's Notion of a Deduction and the Methodological Background of the First *Critique*," in Förster, ed., *Kant's Transcendental Deductions*, pp. 29–46.

14 The literature relevant to the question of the proper role of psychology in

Kant's first *Critique* is vast. Early writers who attributed latent psychological content to the work, to one effect or another, include Karl Leonard Reinhold, *Versuch einer neuen Theorie des menschlichen Vorstellungsvermögens* (Prague, 1789), pp. 65–7, and *Briefe über die kantische Philosophie*, 2 vols. (Leipzig, 1790–92), 2:25; Johann Gottlieb Fichte, "Zweite Einleitung in die Wissenschaftslehre" (1797), in his *Sämtliche Werke*, ed. I. H. Fichte, 8 vols. (Berlin, 1845–6), 1:471–9; Jakob Friedrich Fries, *Neue oder anthropologische Kritik der Vernunft*, 2d ed., 3 vols. (Heidelberg, 1828), 1:20–6, 28–30; Johann Friedrich Herbart, *Lehrbuch zur Einleitung in die Philosophie* (Königsberg, 1813), preface, §§126–7, in his *Sämtliche Werke*, ed. K. Kehrbach and O. Flügel, 19 vols. (Langensalza, 1887–1912), 4:9–10, 208–13. Studies devoted to the proper role of psychology in Kant include Meyer, *Kants Psychologie*; Burchardt, *Kants Psychologie im Verhältnis zur transzendentalen Methode*; Satura, *Kants Erkenntnispsychologie*, appendix; Gary Hatfield, *The Natural and the Normative: Theories of Spatial Perception from Kant to Helmholtz* (Cambridge, Mass.: The MIT Press/Bradford Books, 1990), ch. 3; and Kitcher, *Kant's Transcendental Psychology*. Recent authors expressing discomfort at Kant's psychologizing tendencies include Strawson, *Bounds of Sense*, pp. 15–16, 32, and Bennett, *Kant's Analytic*, pp. 6–8. The term "psychologism" apparently was coined by Johann Eduard Erdmann to refer, not to Kant's own alleged psychologizing, but to the psychological interpretation of Kant's theory of knowledge advanced by F. E. Beneke: Erdmann, *Grundriss der Geschichte der Philosophie*, 2d ed., 2 vols. (Berlin, 1870), 2:636.

15 Kant divides sensibility from understanding at A 21–2 / B 35–6; he distinguishes a separate faculty of imagination at A 94 and B 151; and he distinguishes separate faculties of understanding, judgment, and reason at A 75 / B 100 (note) and A 130 / B 169. Baumgarten distinguishes inner from outer sense at *Metaphysica*, §535. On the division of the cognitive faculties by Wolff, see *Psychologia empirica*, pt. I, §§1–3 and *Psychologia rationalis*, §I, chs. 1–4; by Baumgarten, *Metaphysica*, §§535, 557, 606, 624, and 640. Wolff and Baumgarten posit many additional cognitive faculties, and Kant discusses some additional cognitive faculties in his *Anthropology*, Bk. I.

16 On the psychological implications of Kant's doctrine that Euclid's space is the form of outer intuition and on Helmholtz's attack on Kant's position, see Hatfield, *Natural and Normative*, ch. 3, §4 and ch. 5, §5, and the literature cited there.

17 Studies of Kant's views on the scientific status of psychology include Meyer, *Kants Psychologie*, ch. 6, §3; Edward Franklin Buchner, *A Study of Kant's Psychology with Reference to the Critical Philosophy*, Psychological Review Monograph Supplement no. 4 (New York, 1897); Hans Ehrenberg, *Kritik der Psychologie als Wissenschaft: Forschungen nach den Systematischen Principien der Erkenntnislehre Kants* (Tübingen, 1910); Theodore Mischel, "Kant and the Possibility of a Science of Psychology," *The Monist* 51 (1967): 599–622; Satura, *Kants Erkenntnispsychologie*, ch. 2; David E. Leary, "Immanuel Kant and the Development of Modern Psychology," in William R. Woodward and Mitchell G. Ash, *The Problematic Science: Psychology in Nineteenth Century Thought* (New York: Praeger, 1982), pp. 17–42.



18 Kant's contemporaries noticed that he included legitimate versions of rational and empirical psychology in his architectonic division of the sciences. His division of the sciences in the first *Critique* is summarized in a review of his *Grundlegung zur Metaphysik der Sitten*, in the *Allgemeine Literature-Zeitung* (1785), 2:21–3; his distinction between two types of rational psychology is addressed in Karl C. E. Schmid, *Empirische Psychologie*, 2d ed. (Jena, 1796), pp. 22–4.

19 Joseph Priestley, *Geschichte und gegenwärtiger Zustand der Optik, vorzüglich in Absicht auf den physikalischen Theil dieser Wissenschaft*, trans. G. S. Klügel (Leipzig, 1775–76), pp. 493–4; Johann Samuel Traugott Gehler, *Physikalisches Wörterbuch, oder Versuch einer Erklärung der vornehmsten Begriffe und Kunstwörter der Naturlehre*, 6 vols. (Leipzig, 1787–96), 2:537–42.

20 Priestley, who surveyed a great body of optical literature, described several reports of perceptual experience as produced under specified conditions, including observations on afterimages (*Geschichte*, pp. 450–1), on depth perception with one eye (496), on the windmill illusion (498–9), and on the perception of motion (501–3). He reported Robert Smith's quantitative estimate, given certain explanatory assumptions, of the magnitude of the moon illusion (507–8), and he described Tobias Mayer's mathematically expressed measurements of visual acuity (487). On Mayer, see Eckart Scheerer, "Tobias Mayer – Experiments on Visual Acuity (1755)," *Spatial Vision* 2 (1987): 81–97. The standard survey of the modern history of experiments on perception remains Edwin G. Boring, *Sensation and Perception in the History of Experimental Psychology* (New York: Appleton-Century-Crofts, 1942), and of experimental psychology in general, Boring, *History of Experimental Psychology*, 2d ed. (New York: Appleton-Century-Crofts, 1950).

21 Richard Rorty, *Philosophy and the Mirror of Nature* (Princeton, N.J.: Princeton University Press, 1979), p. 141, and especially Wilfrid Sellars, "Empiricism and the Philosophy of Mind," as printed in his *Science, Perception and Reality* (London: Routledge & Kegan Paul, 1963), pp. 127–96, on pp. 131, 144–5, 166–9.