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The Workings of the Intellect: Mind and Psychology

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The narrative structures within which we describe the origin and development of early modern philosophy at the same time reveal something about what we find interesting and valuable in that philosophy. In recent decades, the older trend of characterizing early modern philosophy as a triumphant "Age of Reason" has given way to the organizing theme of a skeptical crisis and the response to it. According to the earlier story, in the seventeenth century Reason cast off the yoke of Church authority and Aristotelian ontology; newly-freed thinkers re-constituted philosophy, created the "new science," and pushed on toward Enlightenment. 1 However, it is more popular to speak of a skeptical crisis in the sixteenth and seventeenth centuries, which set the philosophical task of "refining the skeptic" for subsequent generations. Lacking a compelling response to skepticism, philosophers were forced to retreat, and they proposed ever narrower "limits to knowledge." Until Kant took a last stand on the "foundations of transcendental idealism," 2 both descriptive stories portray "epistemology" as theory of knowledge—often allied with a concern for method—as the defining preoccupation of early modern philosophers from Descartes through Kant. In describing this "epistemological turn," story ignores from Thomas Reid through Richard Rorty have given pride of place to the "theory of ideas," though others have properly recognized the role of metaphysical concepts, including the concepts of "substance" and of "necessity connections" between properties or events.

There can be no doubt that these elements—the Aristotelianism, skepticism, method, knowledge, substance, and necessity—must all be found in any account of early modern "metaphysics and epistemology," as we often, but anachronistically, label the theoretical (as opposed to practical) philosophy of the seventeenth century. I wish to show that they can be combined into yet a third narrative, one that begins by taking seriously seventeenth-century conceptions of the topics and methods central to the use of a "new" philosophy. In this revisionist story, differing approaches to the central subject matter of early modern metaphysics—knowledge of substances through their essences and causal powers—arise as a result of disagreements about the powers of the human cognitive faculties. 3 Methodological writings are seen as attempts to direct readers in the proper use of their cognitive faculties. The early modern rejection of the Aristotelian theory of cognition ranks equally in importance with rejection of Aristotelian doctrines about nature. Skepticism is more often than not a tool to be used in teaching the reader the proper use of the cognitive faculties, or invited in convincing the reader of the experience or existence of certain cognitive faculties or powers. Instead of early modern "epistemology" or "theory of knowledge," one speaks, along with seventeenth-century writers, of
The Workings of the Intellect: Mind and Psychology

consequence that knowledge of necessary connections could be attained only within the bounds of transcendental idealism. It is not my intention to put forward this revised narrative as a single master story for early modern philosophy. Indeed, beyond the three narrative themes sketched so far, others might be suggested in which differing subsets of philosophers would play greater or lesser roles, these include the story of the changing relations among metaphysics, theology, religion, and science (here Malebranche would enter prominently), and the relation of metaphysics and theory of mind to moral and political philosophy. My aim is to illustrate the force of one particular revised narrative by using it in a comparison of three conceptions of the intellect, conceptions respectively held by some scholastic Aristotelians, Descartes, and Locke. These three examples are not intended to yield an exhaustive taxonomy of early modern theories of the intellect, nor have they been chosen for what they might contribute directly to a present-day theory of the intellect. Rather, discussion of these conceptions will demonstrate the central role played by the theory of the intellect (and other cognitive faculties) in three prominent theoretical philosophies of the early modern period, and it will clarify the point of some early modern disputes. It will also offer an opportunity to locate early modern discussions of the cognitive faculties with respect to recent understandings of psychology, epistemology, logic, mind, and their relations. The early modern discussions are not easily fit into the modern categories of epistemology and psychology. Reflection on this fact may help us see some problems in recent conceptions of naturalism as applied to philosophy and psychology. In this way, contextually sensitive historical reflection contributes directly to contemporary understanding.

1. Three Conceptions of Intellect

Theories or conceptions of the intellect are indicators or even determiners of the scope and limits ascribed to theoretical philosophy by their holders. If one thinks that the intellect has access to eternal Forms or that it can discern the essences of things, one might well have great hopes for the discipline of metaphysics and related theoretical pursuits in natural philosophy. Conversely, if one holds that the power of the intellect is limited, that essences are hidden and unknowable, then one will, by traditional standards, have a more rational insight into the substances and causal connections of traditional metaphysics, with the consequence that the understanding is here limited to clarifying successive of sensory perceptions. Kant entered his critical period when he realized that human cognizers do not have available the "real use" of the intellect or understanding to know an intelligible world of substances; at the center of his critical (theoretical) project was his new theory of the human understanding as a faculty limited to synthesizing the materials of sensory representation but unable to penetrate to things in themselves, with the
soul, especially the senses and intellect. Aristotle’s doctrine of the intellect had taken on a particular fascination for late antique and Arabic commentators, and parts of Book III, ch. 6.5—especially where he said that there is an element of thought that is capable of “making all things” and another capable of “becoming all things”—were extensively elaborated. Interpreters dubbed the first power the “active intellect” and the second the “passive” or “passive” intellect. They offered diverse theories of the natures of these intellectual powers, including the theory that there is one active intellect for all human beings. Although the latter position did have some adherents in the Latin West, the orthodox view attributed individual active and passive intellects to individual human beings. As a background to early modern philosophy, my interest here is in late scholastic Aristotelian theories of cognition, rather than in the interpretation of Aristotle per se.

Much of the De anima is organized as a theory of cognitive faculties. Late scholastic Aristotelian theories (following Aristotle) strictly separated the sensitive and intellectual powers of the soul. According to such theories, the sensory power always relies on corporeal organs, but the intellect (it was usually held) does not, it being an immaterial power of the form of the human body. The primary function of the Aristotelian intellect is to abstract essences or common natures from the images received by the senses. In accordance with the dictum that “there is nothing in the intellect that was not first in the senses,” this act of abstraction depends on sensory images or “phantasms” for its operation. Central interpreters of Aristotle—from Thomas Aquinas to such late scholastics as Suarez, the Comenian Commentators, Rubio, and the textbook author Enrascate de St. Paul—all held that there is “no thought without an image,” that is, that each act of intellect requires a material image drawn from the senses and actually present in the imagination or “phantasia.”

Aristotelian theories of cognition describe a chain of events starting from external objects and ultimately resulting in the reception of an “intellectible species” in the patient intellect. External objects produce “intentional species” in the medium between them and the cognizer, an oak tree thus produces species of brown bark and green leaves. These species are received by the senses and conveyed to the imagination. Then the intellect, perhaps operating over several species received across time, abstracts the essence or common nature of the oak tree. Systematic knowledge, or scientia, is of the common nature or the universal, not of the particular.10

Beyond this general description, a further and misleading tenet is often ascribed to late scholastic Aristotelian theories of cognition: viz., that the process by which the common nature is “abstracted” amounts to an “abstraction” of the species from the senses and imagination into the intellect. On this interpretation, it is as if, as the term “abstraction” itself might suggest, the intellect simply received the “form” in the species separated from all material conditions.11 Intellecution would simply be a kind of dematerialization, or an extraction of a form from the still-material representations of the senses and its transferal to the patient intellect as an intelligible species. A conception that is indeed suggested by the common turn of phrase that the active intellect “illuminates” the phantasm. There would be no need to explain how intelligible species are “created” by the active intellect, the latter’s agency would simply be that of preparing the form in the material phantasm for transfer to the patient intellect.

None of the interpreters of Aristotle cited above held that the intellect absorbs a form from the imagination or phantasm. Consonant with the principle that a “lower being” such as matter cannot act on a “higher being” such as the immaterial intellect,12 these authors all affirmed that intelligible species are produced in the patient intellect by the causal power of the active intellect, which can “make all things”; the material phantasm serves as a “material,” “instrumental,” or “partial” causal factor. “Abstraction,” therefore, should not be equated with “extraction.” Aquinas put the point as follows:

Phantasms, since they are likeness of individuals, and exist in corporeal organs, do not have the same mode of existence as does the human intellect (as is obvious from what has been said), and therefore are not able to make an impression on the patient intellect by their own power. This is done by the power of the active intellect, which, by turning toward thephantasm, produces in the patient intellect a certain likeness that represents, as regards specific nature only, that of which the phantasms are phantasm. And it is in this way that the intelligible species is said to be abstracted from the phantasm, not as though a form, nominally the same as the one that existed before in the phantasm, should subsequently come to be in the patient intellect, in the way a body is taken up from one place and transferred to another.13

The position that the corporeal phantasm, being material, cannot of itself be received into or affect the immaterial intellect was accepted by each of the other authors.14 More generally, these authors saw the active intellect’s ability to “make all things” as playing an important explanatory role: it explains how the intellect can abstract common natures from imperfect sensory images. Without adopting a doctrine of innate ideas, and while affirming that the patient intellect is a tabula rasa, these authors could hold that the active intellect brings something to the creation of intelligible species. As Aquinas put it, the light of the human intellect is a “participating likeness” of the “uncreated” (divine) light that contains the eternal types.15 Far from simply absorbing its content from “phantasms,” the intellect has a dispositional capacity to create intelligible species that reflect the eternal types; but (as they argued, appealing to introspection, among other considerations), it cannot do so without the presence of an appropriate phantasm.

The essential role assigned to corporeal phantasm in the operation of the intellect placed limits on the cognition of immaterial entities such as God and
the soul. These are no sensible species, and hence no phantasms, of such entities. Consequently, those who accepted this account of the intellect held that in this life human beings can at best achieve a confused conceptual cognition of God or the soul, by reasoning from creation to creator or from the soul's bodily operations to its nature and powers. Francisco Toloño, whom Descartes would later remember from his schooldays, contended that the embodied intellect "cannot naturally possess clear and distinct cognition of immaterial substance"; Aquinas, the C欄brian, Rubio, and Eustace said similar things. Authors in this tradition developed elaborate analyses of how God and the immaterial soul can be known, given that their theory of intuition precluded clear and evident cognition of them. The doctrine of analogy is one instance of such analysis.

According to a prominent form of Aristotelianism, then, systematic knowledge or cognition is of universals or common natures, cognized by means of intelligible species which themselves can be formed only with the aid of sensory images. The ability of the intellect to form representations of the essences of things cannot be explained by its simply "taking up" the content provided by the senses, or even by its sifting through and comparing sensory images. The intellect is an immaterial power that cannot be affected by the inherently corporeal activity of the senses, but which is able to make intelligible species with the cooperation of sensory images. This ability was taken to reflect a similarity between the human active intellect and the divine intellect, containing the eternal types. The things best known by the human intellect are the substantial forms or common natures of corporeal things. Intemal essences are cognized only coextensively in this life.

Descartes, who was well-schooled in this tradition, turned nearly every tenet of this theory of cognition on its head. In particular, he held that the intellect can operate independently of the senses and imagination, and that in so doing it can achieve "clear and distinct" cognition of God, the soul, and matter. Whereas sense and intellect were markedly distinct faculties for the Aristotelians, with the intellect depending on sense, for Descartes intellect was the only essential cognitive faculty, sense and imagination being "modes" of intellect, arising from mind-body union. Intellect can operate independently of the senses—when it is known as "pure intellect"—but sense perception (in humans) is an operation of the intellect (brutally construed).

Thus, beyond his notorious rejection of Aristotelian physics, Descartes also rejected the Aristotelian theory of cognition, including especially the view that intellectual cognition requires sensory images. I believe that this rejection was first consolidated in 1629 or 1630, simultaneously with Descartes's discovery of his mature metaphysics. His new theory of cognition became an essential bridge to his metaphysics, in which he exalted the deliverances of the pure intellect, given independently of the senses, to convince his readers of important new metaphysical doctrines, including his assertion that the essence of
28 GARY HATFIELD

faculty distinct from the imagination and able to grasp the infinity of shapes that melted wax can take. The mind then reflects that this faculty is implicated in every act of consciousness, simple acts of sensing. In the Second Meditation he thus characterizes this faculty as "the mind alone," and its operation as a "purely mental scrutiny" (CSM II: 41, AT VII: 31). At the beginning of the Sixth Meditation he again distinguishes the faculty that can grasp many geometrical figures from the faculty of imagination. Has he put a name to (his faculty: it is "intellect pure"; e. g., the "pure intellect" in the words of Cottingeley, p. 8). (CSM II: 30-31, AT VII: 72:73) Pure intellect is, by Descartes' lights, one of ten faculties essential (to mind (the other being will), and it is the faculty by which the essences of things are discovered, and by which God is known.21

Descartes' conception of the intellect. One is indebted chiefly to his philosophy. Just as in the Aristotelian framework, the question arises of how Descartes could account for the intellect's ability to grasp the essences of things, and for him the question seems all the more pressing, since he argued that the intellect can do so independently of sensory contact. This question is a correlate to one later posed by Kant, who asked how the understanding could ever cognize substance and causality independently of the senses (which, by hypothesis, he considered inadequate for the task). (CPS AS-45-5181:12-17) Platoist philosophers had maintained that the human intellect attains knowledge of the essences of things by cognitive access to eternal Forms, or to archetypes in the mind God, or else to concepts of these archetypes implanted in human minds. They posited a "preformationist-system of pure reason," in Kant's words, among eternal Forms or essences, the things in the world that participate in them, and the objects of human intelligence.22 Descartes, however, rejected this conception of the link between mind and world. In connection with his doctrine of the creation of the eternal mind, he boycotted the claim that the so-called "eternal truths" pertaining to created things reflect the basic structure of the divine understanding. Rather, these truths are created, just as their creators.23 The access to the human mind has, these created essences is still explained by a "pre-established harmony," exacted by God's will, beyond created substances and their essences as known by intellect. Descartes retains a divine role in explaining the functioning of pure intuition, without needing to claim that the human intellect, and the knowledge of natural things gained by it, reflect a divine understanding.24 In this doctrine the relations among essences, minds, and things become tightly bound, and hence the theory of intellectual cognition, itself becomes a part of metaphysics.

In comparison with the Aristotelian and Cartesian concepts, Locke attributed to the human mind a weak intellectual candle. Although showing signs of nostalgia for knowledge of real essences, Locke grudgingly admitted that such knowledge is beyond our ken. He came to this conclusion in a work entitled An Essay Concerning Human Understanding, a title in which the words "understanding" is not a general referring to the activity of understanding, but a term borrowed from the theology of understanding.25 Yet curiously, despite this fact, and unlike our Aristotelian and Descartes, Locke does not lay out in the systematic fashion his conception of this faculty and its relation to the other faculties. He uses the word "understanding" in Descartes' broad sense, to denote the "perceptive power of the mind, as distinct from will. (E II.xi.3-6) He does so more than list a number of faculties exhibiting this power, including perception, contemplation, memory, discerning, comparing, composing, enlarging, and abstraction (but no separate faculty of pure understanding, as Descartes' narrow sense). (E II.xi.3-6) This lack of a systematic theory of the metaphysics of the faculties and their powers is perhaps consonant with Locke's belief that the power of understanding itself is limited and so is not able to determine its own nature—any more than it can, more generally, determine the nature of mind or matter. (E II.xiii.3) Thus, Locke's restriction of his inquiry to the "plain, Historical method," a method of observation based in experience, even though coming at the beginning of his Essay, reflects an important conclusion of that work, that human knowledge can be based only on experience, not on purely intellectual cognition of the sort claimed by Descartes. To that extent, his "empiricism" reflects a direct and substantive disagreement with both Descartes and the Aristotelians concerning the power of the human intellect.

A principal aim of Locke's Essay was to question the bounds of the understanding's power, to learn the "extent of its Tether." (E II.1.4) Some of his more vigorously argued conclusions pertain to what the understanding can't do, not what it can. Thus, he argues, contra Descartes and object, that the understanding possesses no innate ideas and knows no principles innately. (E II.1.4) This concept of thought must come from the actions or from reflection on the operation of the mind in connection with sensory "materialis: from either "external" or "internal" sensation. (E II.1.3-4) Human cognition is limited to sensory ideas, or images.26 But, contrary to the Aristotelians, Locke does not find that the understanding, in operating upon sensory images, has the power to extract the "common nature" or essences of things. (Locke was in any case strongly doubtful of the existence of Aristotelian "substantial forms," a notion that he found unintelligible)—E III.10.10) in the end, he decided that knowledge of real essences of substances is beyond us. (E II.xii 6, 9) In his view, "abstract" yields general ideas that can denote many particulars, but we achieve general ideas only of what he termed simple or mixed modes, as nominal "essences: general ideas either of a single type of simple sensory idea such as a color, or such as are produced through a combination of such simple ideas (E I.iii.9)—but not of the real essences of substances.27 Further, "intuitive" and "demonstrative" knowledge, to which Locke attributed the
highest degree of certainty, are found only in clearly perceived relations among ideas. (E.IV.v.1-5) Since we have no idea of the real essences of substances, we are unable to achieve intuitive knowledge of the relation between property and essence—the test we can do is to achieve intuitive certainty with respect to "visible connections" among some of the primary qualities of things, such as the connection according to which figure presupposes extension. (E.IV iii.14)

Locke's Essay is an intricate web of argument and assertion, comprising other factors besides the theory of the faculties, including ordinary appeals to cognitive virtues such as clarity (appeals that can be assessed for themselves without the need to draw upon a theory of the faculties). Still, appeals to the powers and limits of human cognitive faculties play an important role, even in those parts of the work that are not specifically directed toward an analysis of cognition itself. In particular, Locke repeatedly invokes limitations on "Our Faculties" in explaining the failure to know real essences. (E.III vi 9) There are at least three aspects of this failure. First, there is a failure to know the corporeal constitution of things (on the assumption that the "real essences" of bodies are corporeal), which may in part be due to remediable causes, such as lack of experiments, but in other cases a due to a lack of sensory acuity for perceiving the minute constitution of bodies, or (Locke speculates) perhaps even a lack of the appropriate kind of sense organ. (E.IV iii.23-25) Second, even if we could perceive the "real essence," we are very limited in our cognitive ability to grasp any connection between that essence and the properties that flow from it. (E.III vi.19), as regards such other primary and secondary qualities. (E.IV iii.12, 29) Third, "we may be convinced that the ideas, we can attain to by our Faculties, are very disproportionate to Things themselves, when a positive clear distinct one of Substance it self, which is the Foundation of all the rest, is concealed from us." (E.IV iii.23)

Having limited the amount of cognition to simple sensory ideas and their combination, and having restricted the cognitive powers to those that perceive, store, compare, and combine such ideas, Locke found that the human mind is incapable of grasping real essences, either of minds or of bodies. He did make one seemingly metaphysically ambitious claim, to demonstrate the existence of a supreme intelligence, creator of the world; but in this demonstration all cognitive access to God comes via inference from created things, reasoning by analogy with the actions and attributes of human minds. (E.IV.x) Locke in effect held that the human intellect lacks the cognitive resources to succeed at the tasks of traditional metaphysics. This being the case, he, by contrast with the Aristotelians and Descartes, had no need to explain how the understanding can grasp the essences of things.

Long before Kant, then, the Lockean intellect had already forsaken any bid to know the "things in themselves" (substances as they are in themselves). Kant proposed a fuller range of arguments for a more definitive version of this conclusion, and he constructed an account of knowledge in which our knowledge of nature meets the criterion of science as an organized body of necessary and universal propositions. Locke, by contrast, has the knowhow still trying to grasp the real essences of mind-independent objects, and simply coming up short. Although Kant admired Locke's analysis of the faculties of cognition, he felt that Locke had misunderstood the role of the faculties in metaphysical cognition, and had pursued the investigation incorrectly, by making it empirical. (CPR A96-97/B119) Kant also limited the materials upon which the understanding can operate to the representations of sensibility, but he attributed a set of categories to the understanding that rendered such representations into cognition of a law-governed world of nature, ordered in space and time. He gave up claims to know the intelligible world of things in themselves, in order to gain title to knowing an ideal but comprehensible world of nature.

2. Mind and Psychology

Philosophers of the early modern period, whether conceiving of themselves as metaphysicians or as inquirers into the grounds and limits of human knowledge, professed theories of the cognitive faculties. These were theories of the sense, imagination, and intellect, among others. Viewed from the standpoint of the twentieth century—and especially that of our middle decades—this penchant for investigating the mind has seemed like a weakness, an embarrassment, a flaw in philosophy, like an early version of the fallacy of "psychologism." Consequently, many recent philosophers have deemed it best to ignore or minimize the allegedly outdated "faculty psychology" of the early moderns.

This charge of psychologism provides an interesting lesson in the ironies of anachronism. The indictment of "psychologism" relies on an assimilation of early modern theories of cognition to recent conceptions of mind, psychology, epistemology, and their relations. It thereby misreads the substantive positions of the early modern authors, and then, on the grounds of this misreading, charges those same authors with errors they did not commit, while at the same time failing to detect their real mistakes, or at least our real differences with them. Psychology is a species of the naturalistic fallacy. The alleged "fallacy" lies in the move from fact to norm, from descriptions of how things are—for example, with patterns of human behavior, or with habits of human thought—to conclusions about how things ought to be. Thus, even if most people lie, that doesn't make lying morally correct. Moral philosophy and epistemology respectively speak to how we ought to behave or what constitutes good warrant for belief, in spite of what empirical study may show about actual behavior or belief formation.

The contention that the psychologistic inference from actual patterns of thought to norm for thought is a "fallacy" assumes a particular philosophical position. It assumes that our innate patterns of thought do not in fact reflect and
thorily manifest norms for good thinking. By the late nineteenth century this assumption may have possessed good philosophical warrant. Of interest here is the fact that the early modern authors discussed herein, including the Aristotelians, Descartes, and Locke, all rejected this assumption. According to the Aristotelians, the natural human faculties by themselves tend toward true cognition. Logic, in their view, was an artificial system for aiding and improving cognition. It systematized the norms implicit in actual human reasoning, and provided aids for avoiding error. Similarly, Descartes considered the deliverances of pure interest alone to represent the truth. He took the "impurities" of the will to affirm clear and distinct intellectual perceptions as the mere signs of the truth of those perceptions. He held that the "natural" intellect— the intellect we have by nature—acts a norm for good thinking, because its proper use can fail but to achieve truth. Within such a framework, the moves from mental states to cognitive norms is warranted. Locke, too, accepted the skepticism of the "discerning faculties" as constitutive of right thinking. (E IV.1.2) though he made the weakest claims for the scope of the truth-discerning power of the human intellect. Perhaps because the Aristotelians and Descartes each made such strong claims for the power of the intellect, they both attempted to explain why the deliverances of the intellect could be trusted. Aquinas appealed to the "cooperation" of the human intellect in the "unclouded light" of the divine intellect, and Descartes to Oed-installed innate ideas and faculties of judgment.

Given that early modern writers investigated mental faculties in connection with method, metaphysics, and the theory of soul, shall we conclude that they were engaged in psychology? Was their investigation naturalistic, and if not, what was it? Supernaturalistic? And if we reject Descartes's claims for the intellect, is that because we think he was a bad psychologist, or is it because we have more substantive disagreements with him over the powers of human cognition, and the existence of substances constituted with intelligible existence? These questions, like the charge of psychologism, invite us to reflect on the fit between (and the one hand) our conception of the natural, the psychological, and the mental, and (on the other) the corresponding early modern conceptions.

Let us begin with psychology. The name derives from the account of the soul, "logon peris psyche," as proposed by Aristotle. In the Middle Ages this discipline was most known under the label "de anima," but from the sixteenth century on it was sometimes latinated as "psychology." The subject matter of "de anima" psychology, determined as it was by the Aristotelian conception of soul, included the nutritive, motive, sensory, and rational faculties of animate or inanimate objects and the experience that do today's experimental commentators of the early modern period, as in Aristotle's own text, greater attention was given to the cognitive faculties, sensitive and rational, than to the others. The material conditions of the operations of the senses were charted,

The Workings of the Intellect: Mind and Psychology

33
cerebral anatomy was discussed, and some mention was made of the cognitive division of labor among the external and internal senses, the estimative power, and the active and passive intellect. Within the Aristotelian curriculum, the theory of the soul fell under the rubric of physics, or natural philosophy. The soul was considered part of nature. Only in the discussion of the immaterial intellect was there a tendency to consider supernatural explanatory agencies, as in the doctrine of the unity of the active intellect. The Aristotelians discussed above rejected this doctrine, affirming that the active intellect is a natural, if immaterial, power of the human soul, where the latter is regarded as the form of a corporeal substance, the human being.

Already we can tell that our categories "natural," "physical," and "psychological" do not easily map the Aristotelian position, in which an immaterial power is considered to be part of nature, and indeed, to form a portion of the subject matter of physics, understood as the science of all natural things. Perhaps ever more so as well, Aristotle Le Grand, a dualist follower of Descartes, ranged the theory of mind or soul under the heading of physics. And, looking further back, the eighteenth-century systematist Christian Wolff placed the soul, considered as an immaterial substance, within the natural world, and Kant put the discipline of psychology under the discipline of physics, or, in his terms, under "physiology" (the logos of physics). If naturalism, as applied to the mind is the doctrine that we should explain mental activity by appeal only to natural agencies, then by their own lights these groups also regarded the "natural" mind as an instrument for discerning truth, hence, "naturalistic" description of that mind could as at the same time serve as the basis for an analysis of the conditions for knowledge.

Kant developed a sharp distinction between empirical psychology (part of physiology) and the transcendental philosophical investigation of the knowing faculties. By the middle decades of our own century, it was usual to relocate psychology to the "logical spaces of culture," by contrast with that of "reason.

Scientific psychology, insofar as it concerned itself within the mental at all, came to be viewed as descriptive of the causal mechanisms of cognition, not of its norms. Yet the "common wisdom" that at least boundaries must be observed between epistemology and psychology on pain of psychologistic fallacy is now being challenged by some attempts at "naturalizing" epistemology. Is naturalized epistemology a return to the early modern project of charting the cognitive faculties? The answer must be "yes and no." Both base the investigation of the faculties on experience, though the early moderns gave greater weight to ordinary first-person reports of cognitive experience. Nonetheless, in the textbooks and De anima commentaries of the early modern period, as in Aristotle's own text, greater attention was given to the cognitive faculties, sensitive and rational, than to the others. The material conditions of the operations of the senses were charted,
But if belief formation is deeply culturally conditioned, then basic cognition is deeply culturally conditioned. As post-Kantian developments in geometry reveal, what can at one time seem so patently manifest that one is tempted to say that it is constitutive of our cognitive faculties and hence must permanently limit the range of scientific theories, can later be recognized as a contingent and falsifiable hypothesis that has become deeply entrenched in a cultural tradition.

If belief fixation is a central feature of human mentality, and if it is, to a significant extent, culturally constituted, then the human mind is a culturally constituted thing. Should it therefore be seen as at least partly standing outside nature? That depends on whether one posits a nature/culture demarcation. If culture is held to be naturally conditioned but itself not part of "human nature" (except for the necessity of having a culture), then the culturally constituted part of mind stands outside nature. ("Natural" as applied to human beings is here narrowly construed to extend no further than to what is "biologically fixed".) By contrast, if "the natural" is given broad boundaries so as to include all that might be contrasted with "the supernatural," then nature includes human culture, and the mind is wholly part of nature. But if the mind as culturally constituted is part of nature, and if cognitive frameworks vary significantly across cultures, then naturalism cannot promise to achieve the same kind of generality that the seventeenth-century metaphysicists believed their own "naturalism:" insight into the permanent structure of cognition. Thus, under either the broad or narrow conception of nature, naturalism ultimately undermines any hope for the kind of finality with respect to human cognitive structure that had been the goal for Descartes and Locke. Historical reflection might then suggest that we think the rhetoric of epistemology and cognitive theory, and move beyond the early modern project of seeking to dissect the faculties of higher cognition once and for all.

Reflection on the differences between our conception of psychology and Descartes's understanding of his project reveals that our major differences with him do not pertain to the relevance of psychology to epistemology and metaphysics. Rather, we disagree with his metaphysics of intellect: we reject his attribution to the mind of "noetic powers" for grasping essences by pure intellect. The Aristotelian and Cartesian conceptions of intellect were laid to rest through the work of Locke, Hume, Kant, and others. As the a priori powers are broad as the historically actual diversity of human thought. Thus, whereas Descartes could hope to discover the fundamental concepts of physics through proper reflection on innate ideas, today we have no such hope. Belief fixation is highly sensitive to conceptual structure and background beliefs. Conceptual structure and background beliefs depend on culturally transmitted learning. A physicist today who is asked to determine the basic categories of physics brings to bear his or her understanding of post-Newtonian physics. Many of these concepts had not been envisioned during the time of Descartes.
problem space, and those very same changes may in fact serve to mask the developments that brought them about.

3. Historiography, Philosophy, and Interpretation

The investigation of the cognitive faculties, their powers and limits, was a central focus of early modern theoretical philosophy. Not only Descartes and Locke, who are discussed here, but Hobbes, Berkeley, and Kant made the faculties the core of individualism.

In all of these discussions, the contours of metaphysics are directly linked to an investigation of the mind's powers. Descartes sought to open up a new metaphysical space, while Kant was coming to grips with the failure to know the real natures of mind-independent substances. In either case, discussions of the mind's real capacities contributed to metaphysical work.

In highlighting the theme of the cognitive faculties I have sought to draw attention to an important but relatively neglected factor in the history of early modern philosophy. This theme is intended to complement, not to replace, other themes. Indeed, with respect to the two themes mentioned at the beginning of this essay, attending to the role of the cognitive faculties can deepen our understanding of the ways in which early modern philosophy was part of an "Age of Reason," or rose to meet a skeptical challenge: reason was conceived as a faculty of mind (or as an activity of the faculty of intellect), and skeptical writings typically were organized as challenges to the faculties of sense and intellect. Reflection on the latter fact may help interpreters to see more clearly the uses to which skeptical arguments were put by Descartes and others.

More broadly, attention to controversies about the cognitive faculties can sharpen our understanding of a core substantive disagreement between "rationalist" and "empiricist": a disagreement about the power of the intellect to know the essences of things.

If the cognitive faculties were so important, why have they been neglected in recent discussions? Curiously, much of what early modern writers took to be central to their work has been excised from it out of a "principle of charity." In the middle of the eighteenth century, philosophical interpreters of past texts adopted the strategy of looking for what was "still of philosophical interest" in them, which meant what might still stand as a candidate solution to a philosophical problem of current interest. These same interpreters were well-steepled in the notion of the "psychologistic fallacy." Further, they were far removed from the notion that the mind might possess special powers or capacities for knowing in advance, when they read the work of a Descartes or Locke or Kant, the immediate response was either to ignore talk of faculties and cognitive powers, or to translate it into something that seemed more respectable. A striking instance of this may be found in Strawson's...
The Works of the Intellect: Mind and Psychology


2. Richard H. Popkin, History of Scepticism from Erasmus to Spinoza (Berkely, Los Angeles: London: University of California Press, 1979) has made the skeptical theme prominent in recent years. Ueberweg's second period of modern philosophy ranked skepticism together with empiricism and dogmatism as "rival systems" to which "criticism" was a response (History, vol. 21). Emmanuel Kant, Critique of Pure Reason, Norman Kemp Smith, trans. (New York: St. Martin's, 1965) proposed a similar bipartite division (A76/B789) among other analyses of philosophy's history (AR52- 356880-844). "A" and "B" refer to the pagination of the first and second editions, respectively, of Kant's Kritik der reinen Vernunft (Riga: Hertig, 1781, 1787) and refer to "CPI" plus page numbers. E. M. Curley, Descartes against the Skeptics (Cambridge, Mass.: Harvard University Press, 1978) endorses a portion of this picture by maintaining that Descartes's mature philosophy was directly motivated by the threat of skepticism in psychology (p. 38).


5. I have sketched this storyline for the history of modern philosophy in my The Natural and the Normative: Theories of Spatial Perception from Kant to Heidegger (Cambridge, Mass.: The MIT Press, 1990) ch. 2, 6. John W. Yolton, Perceptual Acquaintance from Descartes to Reid (Minneapolis: University of Minnesota Press) appreciates the significance of the faculties in early modern philosophy, but distinguishes concern with the faculties directly to a present-day conception of "psychotherapy" (pp. 16, 39, 105).

6. Support for various descriptive claims may here be found in my The Natural and Normative, chs. 2-3.


36. Tolstoy, CDA, devoted fol. 62r-62v to the vegetative soul, 77r-129v to the sensitive, 179v-179r to the intellectual, and 186v-186v to the appetite, will, and motion. Cuvillo, College, CDA, devoted fol. 128-151 to the vegetative soul, 160-161 to the sensitive, 360-365 to the intellectual, 401-402 to appetite, will, and motion, with separate treatises on the vegetative soul (pp. 499-526) and an additional problem pertaining to the senses (pp. 577-593). Ribu, CDA, devoted pp. 278-380 to the vegetative soul, 320-325 to the sensitive, 553-575 to the intellectual, and 753-735 to the appetite, will, and motion, adding a treatise on the vegetative soul (758-84). The coverage was slightly more balanced in the textbooks: e.g., Eudate of St. Paul, SP ("Theoria") devoted 197-223 to the vegetative soul, 224-77 in the sensitive, including motion, and 278-308 to the rational soul, including will.

37. Tolstoy, CDA, passim. Ch. 2 (fol. 4) advanced the soul in all of its operations under physics, Cuvillo, College, CDA, passim, Ch. 2 (pp. 746-746) and Ribu, CDA, passim. Ch. 2 (pp. 29-31) advanced the study of embedded souls under physics, and separated souls under metaphysics. Eudate of St. Paul, SP ("Theoria") treated "De anima" topics in the part entitled "Physics," per the source.


44. GARY HATFIELD

(CBD M: p. 40, AT VII: p. 38), clear and distinct perceptions of the intellect produce "imagination in the will," and as long as one expects only to such and guides intellectual perceptions, one will not fall into error (CBD M: p. 41, AT VII: p. 59) See also: Principia, I. pp. 30-42.

"The Workings of the Intellect: Mind and Psychology"


