'Tis evident, that all the sciences have a relation, greater or less, to human nature; and that however wide any of them may seem to run from it, they still return back by one passage or another. Even *Mathematics, Natural Philosophy, and Natural Religion,* are in some measure dependent on the science of Man; since they lie under the cognizance of men, and are judged of by their powers and faculties. . . .

Here then is the only expedient, from which we can hope for success in our philosophical researches. . . . There is no question of importance, whose decision is not compriz'd in the science of man; and there is none, which can be decided with any certainty, before we become acquainted with that science. In pretending therefore to explain the principles of human nature, we in effect propose a compleat system of the sciences, built on a foundation almost entirely new, and the only one upon which they can stand with any security.

—David Hume, *A Treatise of Human Nature*

Constituting the Discourse of Anthropology: The "Philosophical Physicians"

The participation of Kant and Herder in the genesis of "anthropology" cannot be grasped in an exclusively German context. To be sure, the Germans, as Cabanis was to observe in one of the culminating texts of the emergent field in 1796, were far more comfortable with the *term,* but the French (and the British) had long before been active in cultivating the *thing.*[1] Thus, we must funnel impulses from the widest European "*longue durée*" through to the two figures in Königsberg (and Riga and beyond) at the close of the 1760s in order to assess how, in the early 1770s, they helped constitute—at least for Germany—the core discourse on anthropology.[2]

In one of his typically witty and provocative essays, Odo Marquard suggested that a way to mark the epochal shift taking place in Europe around 1750 would be to note the emergence of three new (and in fact quite closely interrelated) subspecialties within philosophy: aesthetics, philosophy of history, and philosophical anthropology.[3] It is just that crystallization—not as something *subsumed under* but rather *bursting loose from* philosophy—that characterized the emergence of a new disciplinary discourse of "anthropology" in Germany.[4]

The crystallization of anthropological discourse arose from the convergence ("con-fusion") of a number of disparate inquiries: the *medical* model of physiological psychology, the *biological* model of animal soul, the *pragmatic* or *conjectural* model of cultural-historical theory, the *literary-psychological*

model of the new novel (*Tristram Shandy, Sorrows of Young Werther*), and the *philosophical* model of rational psychology grounded in the quandaries of substance interaction (the Three Hypotheses).[5] Thus, the interpenetration of insights from literature and medicine, from medicine and philosophy, from travel and history—this distinctly *metaphorical* transfer not just of data but of "ways of knowing"—is the distinctive feature of the emergent "science of man."[6] Its eclecticism was not a weakness; it was an opportunity for synthesis of an extraordinarily fruitful nature.

The complexity of the impulses out of which anthropology constituted itself is illustrated well in the agenda that the planners of the German conference on "The whole Man" (1994) sent out in their solicitation of participants.[7] They designated four large areas: a "new discourse on body-soul," a "new experience of human nature," typical topics of eighteenth-century anthropological inquiry, and, finally, specifically *literary* anthropology. The first rubric spanned metaphysical and empirical considerations of mind-body interaction. The second referred to the various new domains of eighteenth-century medicine—physiognomy, dietetics, temperament analysis, animal magnetism, etc. Under the third topic, such foci as (empirical) psychology, genius and imagination, enthusiasm (*Schwärmerei*) and mental illness came to prominence. Under the last, travel literature and psychological novels merited special attention. A huge congeries of considerations were flowing together into a self-consciously articulated disciplinary research domain. "One thing becomes clear: the theory of man as a question concerning his essence, his nature and determinations, as a question of his place in the world, his powers and possibilities, his rights and obligations, his purposes and his goals, is the main theme of the century."[8]

Constituting the New European Discourse of Anthropology

As with the "essay" as a literary genre, the historical reach toward constitutive beginnings of the eighteenth-century "science of man" carries us back to Montaigne in France and Bacon in Britain.[9] They proved seminal for what Sergio Moravia has characterized as decisive "epistemological liberalization[s]" through which anthropology as an eighteenth-century discourse could fashion itself.[10] To that discourse Montaigne bequeathed introspective *observation*, and Bacon, the idea of (natural) *history*. Montaigne's approach to subjectivity, his unequivocal affirmation of introspection and individuality, showcased an essential component of "epistemological liberalization," the turn to the "life-world."[11] The popular philosopher Christoph Meiners, in

his history of the emergence of the "*schönen Wissenschaften*," claimed that Montaigne was the originator of "*beobachtende Lebenswissenschaft* [the study of the life world by (empirical) observation]."[12]

The second legacy, Bacon's notion of a historical approach to inquiry, is even more important, for it is crucial to discern—against the monolithic sense of method that seventeenth-century rationalism seemed to saddle upon the eighteenth—an alternative model, the "notion of natural history, the systematic collection of data, whether or not expressed precisely in quantitative form, without seeking to prove some particular hypothesis or other."[13] Thus, the "Baconian sense of history" betokened "the descriptive means to knowledge."[14] Such systematic fact-finding was "essential and fundamental" to scientific progress, as Bacon saw it. "Natural history" had no diachronic implication in its preponderant early modern usage. The diachronic sense remained concentrated in the sphere of the human. *Historia*, drawing on its original, extensive sense in Greek, entailed accounting for facts—description, to be sure, but also *explanation*, though not necessarily in a *narrative* form. This was Arno Seifert's crucial insight, that *cognitio historica* represented the most embracing concept of an *empirical* form of inquiry, in other words, a method based on observation and experience, in all the various fields touching upon human experience in early modern thought.[15]

Bacon's influence, while it can hardly be termed neglected, nevertheless suffers from a bias in the interpretation of several generations of historians of science who disdain his "crude" empiricism.[16] The vogue of logical positivism, with its formal mathematical modeling of science, only accentuated this learned contempt. But revisionism in the philosophy of science carries with it revisionism in the history of science, and it is time to see Bacon's influence, especially upon the eighteenth century, in its truly progressive contours.[17] Nowhere is the case more easily made than in what has become the most exciting context for eighteenth-century studies of late, the Scottish Enlightenment.[18] P. B. Wood has made clear how important Bacon was in the educational foundations of the Scottish Enlightenment: "the study of Bacon's works was an integral part of the curriculum at each of the Scottish universities" from at least 1730.[19] Bacon called for "histories of the individual senses, the passions, and the faculties of the mind," Wood writes (91). And that was just what the Scottish Enlightenment proposed to achieve. Wood points to two crucial educational innovators: John Gregory, Professor of Medicine at Aberdeen, who "aspired to effect a Baconian reform of medicine . . . [utilizing] 'the strict method of naturall history & accurate induction,'" and Alexander Gerard, who presented *A Plan of Education in*

the Marischal College and [*Aberdeen*] *University* in 1755 on explicitly Baconian lines (91, 94). In his *Plan,* Gerard "argued in a Baconian vein that the arts and sciences served as 'the *sylva*' or 'natural history of the human intellect and its operations' for logic, since they provided the particulars from which the precepts of logic were to be inferred" (94). This naturalistic, generative view of logic as grounded in a historical account of human faculties was the decisive impulse of anthropological discourse (even as it would be, of course, the essential provocation to Kant's transcendental reprise).

David Hume's *Treatise of Human Nature* (1739) is the natural recourse for interpreters looking back on the eighteenth century and trying to seize upon the most pregnant formulation of its "science of man."[20] The "application of experimental philosophy to moral subjects" was the explicit ambition of Hume's text. Were one to take up the science of man, Hume believed, it would open up "a compleat system of the sciences, built on a foundation almost entirely new." He elaborated the central premise: "And as the science of man is the only solid foundation for the other sciences, so the only solid foundation we can give to this science of man must be laid on experience and observation."[21] But, since Hume's work actually languished little read, the elements of the new style of thinking associated with "observation and experience" were largely constituted out of the legacy of Locke.[22]

In conceiving the role of "natural history" in the constitution of eighteenth-century anthropological discourse, G. A. J. Rogers has suggested that we would do well to be more attentive to the famous phrase with which Voltaire celebrated John Locke in his *Philosophical Letters.* Voltaire wrote: "After so many random reasoners had been thus forming what might have been called the Romance of the Soul, a sage appears who has modestly presented us with the history of it."[23] Rogers suggests that Voltaire was consciously inserting Locke in Bacon's research programme.[24] Indeed, Locke's approach was largely conceived and received as a "natural history of the understanding," though Locke took history in its widest Greek sense.[25] The sanction of Locke's epistemology, together with his pedagogical and political thought, proved quite substantial for the emergence of anthropology in the European eighteenth century. By framing the question of human consciousness as the "history of human understanding," Locke initiated a general temporalization of human faculties.[26] As we have already observed, Locke transformed the most fundamental of all the philosophical disciplines, logic, in a starkly psychological direction.[27] He was the unquestioned source from whom Condillac, "the leading psychologist of the eighteenth century," drew inspiration, as Condillac in turn proved the inspiration of the Encyclopédistes and of Charles Bonnet.[28] Locke broadened the inquiry

associated with logic to a far wider conspectus; he "compared the operations of the human mind with those of the higher animals" and with the "mental states of idiots and madmen," and indeed, sought evidence from "the whole course of Men in their several Ages, Countries, and Educations."[29] Breaking free from mere introspection, Locke "opened up new perspectives on the relevance of history, anthropology, and the comparative study of languages for the science of the mind."[30]

Thus, Locke proved "the source in enlightened Europe" of a set of epistemological liberalizations—the use of analogy, comparison, observation of particulars.[31] A central metaphor of this trend was "bringing things down to earth" (250). We have repeatedly encountered this metaphor in Kant, Herder, and others as a crucial gesture of the turn toward "popular philosophy" in Germany. The gist is what Mably wrote, "let us study man as he is, in order to teach him what he should be," a line that immediately conjures up Kant's new project for ethical philosophy enunciated in 1765.[32] An equally crucial idea, especially for Herder, was invoking the "whole man."[33] Rejecting what it envisioned as "Cartesian" dualism, the eighteenth-century science of man sought to "rehabilitate corporeality" from negative associations that actually had their sources long before Descartes in Platonism and Christianity.[34] The new "psychologists" believed even "the most impalpable and spiritual functions of man were to reveal themselves empirically, to exhibit sensible signs, and to permit an empirical analysis."[35] For example, from Peter Camper to Johann Lavater, the idea of "physiognomy" emerged as an elaborate effort to develop a semiotic of facial features.[36]

The phrase "observation and experience," as a unit, fills the pages of eighteenth-century efforts to characterize empirical inquiry.[37] For that century, "observation and experience" seemed synonymous with *judgment,* in other words, a concrete, practical skill. For a whole group of thinkers, it seemed possible to make headway beyond a manifestly aporetic metaphysics by recourse to observation and experience. To do so required a fundamental shift in the notion of what *science* signified, the surrender of the idea of *absolute certainty* and the acceptance of a contingent, fallible, continuously evolving series of nominal approximations with some less than perfect order of subjective probability. To be sure, one had to surrender certainty. One even had to surrender conceptual determination through grounding definitions. "Nominal essences" would have to make do since the "real essences" behind the actual world—as Locke argued and even Leibniz sometimes conceded—were not likely to become accessible to human understanding.[38] If one made the transition to this "nominal" register, if one were content to settle for what "observation and experience"

could document, what one found was not, to be sure, absolute truth, but it could be an intersubjectively confirmable generalization, a "law," albeit contingent and fallible.[39] That change, perhaps one of the most fundamental in the history of human culture, developed, against great resistance, over the course of the eighteenth century.[40] At its close, neither Kant nor Hegel was comfortable with surrendering the old a priori idea of science. Kant remained conflicted and confusing on the question.[41] Hegel was embarrassingly clear in his adherence to the old ideal.[42] Leibniz, at the outset of the century, understood the problem and resolved it by discriminating a science as God might see it from the one mere mortals could conjure.[43] (How mere mortals could *know* how God saw things we pass over in silence.) Hume understood it, too, and felt quite content to abandon the old ideal and settle for the new one; that was the essence of his program for a "science of man."[44] Hume wrote:

> For to me it seems evident, that the essence of the mind being equally unknown to us with that of external bodies, it must be equally impossible to form any notion of its powers and qualities otherwise than from careful and exact experiments, and the observation of those particular effects, which result from its different circumstances and situations. And tho' we must endeavour to render all our principles as universal as possible, by tracing up our experiments to the utmost and explaining all effects from the simplest and fewest causes, 'tis still certain that we cannot go beyond experience; and any hypothesis, that pretends to discover the ultimate original qualities of human nature, ought at first to be rejected as presumptuous and chimerical.[45]

Remarkably, Wolfgang Proß has discerned that the Abbé de Condillac began his decisive text, *Traité des sensations* (1754), with an unacknowledged but presumably transparent literal translation of this last sentence.[46] This was the core commitment of the whole movement toward empirical inquiry.

A decisive instance of this reorientation to empiricism and probability was Buffon. His enormously influential *Histoire Naturelle,* the first three volumes of which appeared in 1749, was grounded in his earlier methodological and philosophical studies in mathematics, probability theory, and epistemology.[47] He began his career as a mathematician, the translator and commentator of Newton's *Fluxions* (1740). He took to heart the powerful criticisms of the conflation of mathematics and metaphysics in Newton's natural philosophy regarding absolute space and time, especially as these were formulated by Fontenelle and Berkeley. Accordingly, Buffon insisted

on the distinction between "physical" and "abstract," in other words, between the *real* and the *formal,* in Kantian terminology.[48] Above all, Buffon insisted upon grounding science always in particulars. In the "Preliminary Discourse" to the *Histoire Naturelle* (1749), he wrote: "one progresses from observation to observation in the sciences of the real [*sciences réelles*]."[49] His entire enterprise was to "achieve some kind of immanent, connected understanding of [actual] phenomena" (129). Hence the essential recourse of natural science should be ever to induction and, in the absence of perfect knowledge, to *probability.*

The first half of the eighteenth century was crucial for the systematization of probability theory by such mathematicians as De Moivre and Bernoulli, and one of the centerpieces of that systematization was a discrimination of subjective from objective probability in scientific applications.[50] Most natural philosophers continued to believe that objective probability, as a function of the real order of events, should be regarded as certain. But this was essentially irrelevant to finite human observers, for whom the problem was subjective probability, an estimate of the confidence of the human grasp of objective nature: "The problem was that of assessing the degree to which human knowledge could be estimated to conform to the objective order of events."[51] Buffon systematically invoked this probabilistic approach to underscore his nominalist suspicion of abstractions. As he put it, "That which one terms a physical truth is thus only a probability, but a probability so great that it is equivalent to a certainty."[52] That is, "[t]he recurrence of the empirical particular organism, perpetuating itself by the 'eternal round' of generation, could satisfy, at least qualitatively, the necessary conditions for this calculus of physical truth" (120). It was on this basis that Buffon challenged the abstract classificatory scheme of Linnaeus, demanding a methodologically more defensible empirical connection to actual particulars.

Such a reorientation of scientific expectations made possible a recognition of the palpable "wholeness of man," despite the metaphysical abysses that "wholeness" bridged. Indeed, displacing the dichotomous mode of "soul/body" discourse (*substance* discourse) by one in the developmental/dialectical mode of "physical/moral" (*attribute* discourse) became, for Moravia, the central feature of the emergence of the science of man in the eighteenth century.[53] The invocation of these terms, while it did not solve the metaphysical problem of dualism, made of mind and body "two aspects of human being which are essentially homogeneous, or are at least no longer separated by an unbridgeable ontological abyss" (165). This was a self-conscious *naturalization* of man, and "the naturalists conceived of the *physique* and the *moral* as two sides of one and the same reality, of

one single totality."[54] Wokler explains that terms like *le physique* and *le moral* might appear interchangeable with *le corps* and *l'âme*, but unlike these, "they have an evolutionary connection in that one may give rise to and become transformed into the other." This allowed a "temporalization of the 'chain of being' in the Enlightenment."[55] But Wokler detects a decidedly materialist undertow in the terminology: "the Enlightenment distinction between *le physique* and *le moral* came after the mid-eighteenth century to be progressively rejected in favour of one dimension, *le physique*, alone."[56] More moderately, Lepenies argues that "with the breakthrough of the idea of development both things were possible: to accept the special place of man in nature without subordinating his nature to a uniqueness that set him utterly apart from the animal kingdom."[57]

Indeed, this developmental model or "conjectural history" extended beyond the question of human communities into the natural realm. There was, decisively, a convergence from both conceptual poles, *nature* and (human) *history*, toward a synthetic middle ground.[58] Nature came increasingly to be conceived as temporalized (e.g., by Buffon), while human history presumed a measure of "universality" if only to encompass the profound "otherness" that its variety presented to the observer.[59] One of the central premises of the new view was that humans had always to be conceived as situated in, a part of, nature.[60] Hence the importance of "environment," of milieu and climate in the reconstruction of human experience, inaugurated by Montesquieu, developed by Buffon, and systematized by the Scottish Enlightenment.[61] But the synthetic impulse reached out even more widely than this. Not only the study of primitives conjoined with the history of civilization, but also the question of animal-human comparison, the origins of language, the nature of sexuality, the problems of monsters and insanity—all seemed to be relevant to a grasp of *human nature*, which was, as Robert Wokler notes, a foremost obsession of the eighteenth century.[62] Again, Buffon proved central in proposing the consideration of the human *species* as an object of natural history.[63] That suggests, in turn, an essential methodological parallelism between the new discourse of the "science of man" and the larger "natural philosophy" of the eighteenth century.[64]

Diderot's *Pensées sur l'Interprétation de la Nature* (1753) offers one of the clearest statements of the methodological vantage of the "liberalized" new empiricism of the mid-eighteenth century. His exposition extended the idea of "interpretation"—a poetic or hermeneutic approach—to the natural sciences.[65] The question for Diderot was how one should guide inquiry, what basis could rescue science from "mere groping."[66] He resorted to *génie*, the notion that gifted experimentalists simply have a knack for knowing

which trail to follow, "an inexplicable intuitive awareness of the workings of nature."[67] Diderot believed in the place of hypothesis in empirical science, but such hypothesis was not transcendent (as Newton claimed) or transcendental (as Kant would claim), but imaginative. One had to find a place in the methodology of science for "imagination, analogy, and every individual creative and inventive faculty" (49). This is precisely what Moravia meant by the idea of "epistemological liberalization."[68] That was why Diderot used the term *interpretation*. That was why he proposed science belonged in an ensemble of inquiries that fell under the large rubric of hermeneutics.

Diderot was not prepared to seek transcendent "real essences": "The inquiry into causes remains so to speak within the domain of appearances, an analysis of the manifestations of the properties of matter rather than their 'nature.' "[69] Still, he distinguished between the mere *observateur* (Bacon's "empiric") and the *interprète*, for the latter sought general principles behind the phenomena. Dieckmann pulls this together in a summation: "If one now links the conception of the *interprète*, who by his conjectures transcends the endless dependence of one phenomenon upon the other and arrives at a determining cause, to the conception of the *genius of experimental science*, who alone is capable of creative conjectures, we seem to have in the *interpreter of nature* the scientist Diderot expected for the new investigation of things outlined in the *Interprétation*" (53). In opposing the mathematical approach to science on behalf of the emergent life sciences, Dieckmann argues, Diderot "adopts and follows . . . confessedly the ideas of Maupertuis and Buffon" (39). Indeed, one of the central projects of Diderot's work was to come to terms with Maupertuis's *Système de la Nature* (1751). Diderot was responding, in short, to a new breakthrough in science. "A new domain seemed to have been won for science which required a fresh, direct contact with things, new methods for their investigation, and which promised the discovery of the concrete 'individual qualities of things' " (55). Diderot presented a vision for the new empiricism of the second half of the eighteenth century that not only fit the endeavors of "the newly rising branches of natural and medical science" based on a "concept of experimentation which made the older one seem less 'concrete,' " but assimilated those endeavors to the "humanistic" ones involved in the "science of man."

The "Paradigm Shift" in Natural Science: Force and Epigenesis

Anthropology arose as part of the response to the failure of the mechanist paradigm to incorporate the life sciences.[70] The problem of human psychol-

ogy and the comparison of man with animals embroiled anthropology in the larger configuration of problems in natural science at midcentury concerning organic form. Organism was the decisive anomaly for the mechanist paradigm. Organism was the principle around which a new paradigm struggled to formulation. The displacement of physics by the life sciences proved decisive in setting the terms of the methodological debate.[71] We can read this most vividly in the reflections of the great French natural philosophers—Maupertuis, Buffon, Diderot, and D'Alembert—around midcentury.[72] In a short span of years in the 1740s, culminating in a series of decisive publications around the year 1749, this French ferment in natural science burst the mechanist paradigm apart and opened the way for the new life sciences and also for the "science of man."[73]

This theoretical mutation began in the early work of Maupertuis and Buffon, who were in fact friends in close contact at the time. Maupertuis's *The Earthly Venus* (1746) was a pioneering effort to challenge the adequacy of the mechanist paradigm for the life sciences.[74] Its influence on Buffon and on the whole discourse of science in the mid-eighteenth century deserves greater consideration.[75] Moreover, his *System of Nature* (1751) was a statement that triggered some of the most pointed debates on the nature and method of science at midcentury, drawing responses from D'Alembert and from Diderot that are themselves landmarks of the paradigm shift.[76]

There were three decisive frontiers of inquiry, three breaking points in the continuum of general scientific theory. First, there was the divide between the organic and the inorganic, "life" itself. Second, there was the distinction between animals and humans, the question of "spirit" or "reason" (or *language*). Finally, there was the internal problem in humans themselves, the relation of the mind to the body, the question of "soul." From Descartes forward, these boundary problems had become acute. By the mid-eighteenth century the issues surrounding "animal soul" had taken command of intellectual discourse.[77] Somehow life, spirit, and soul had to be reconceived, however fallibly and contingently, for "experimental science." Indeed, it was a curious moment, at once unhappy with reductive mechanism (and its implicit or explicit metaphysics of materialism) and unhappy with traditional animism, in other words, the idea of a "soul" intervening in natural phenomena. These polar discontents were energized both by a commitment to *transcendent creationism* and by an admiration for *immanent natural process*.[78]

The crucial breakthrough that brought on the paradigm shift around the middle of the eighteenth century was the connection between revisionist notions of "physical influx" and the idea of *hylozoism*, or "thinking matter."

All the impasses of eighteenth-century discourse in the linked spheres of metaphysics, physical theory, biology, and anthropology came to be bound up in the problem of hylozoism. That is: What properties could intelligibly be ascribed to matter, and how would this explain such issues as the causal relations of distinct substances, the principles of action at a distance, chemical attraction, electricity and heat, the mysteries of biological generation, and the mind-body relation? The inspiration was offered by Locke, though inadvertently, only as a token of the finitude of human knowledge. He made the simple point that because we could know nothing of real essences, we were not entitled to debar the possibility that God could endow matter with the power of thought.[79] Yolton has documented how Locke's conjecture about "thinking matter" ran like a red thread through eighteenth-century philosophical discourse in both Britain and France.[80] Nicholas Jolley suggests it was equally central for the genesis of Leibniz's *Nouveaux essais*.[81] Others have discerned in the "sensorium" notion of space that figured so centrally in the Leibniz-Clarke correspondence propensities toward a similar immanentism, a notion of "living nature."[82] "Thinking matter"—hylozoism—became the physical-metaphysical possibility of the day. This was the *positive* sense of the term *Spinozism*, especially after the middle of the eighteenth century.[83] Denis Diderot gave brilliant literary expression to the impact of these ideas in *D'Alembert's Dream*.[84] By inserting into his provocative fantasy as the attending physician the redoubtable Dr. Bordeu, he showed himself quite aware of the importance of Bordeu's conjectures in the new science.[85] Diderot suppressed *D'Alembert's Dream*, but some of its ideas animated his earlier *Thoughts on the Interpretation of Nature*, a text of extraordinary importance not only for the genesis of "popular philosophy" in Germany, via Ernesti, but for the genesis of the closely related new discourse of anthropology.[86]

As Shirley Roe has noted, "biology was undergoing an intense philosophical reexamination."[87] The paradigm shift was epistemological and methodological more than it was a response to new data. The dominant idea of "preformation" had appealed to the age primarily because it "was consistent with the period's religious beliefs" and "solved a number of philosophical difficulties" (2). In effect, preformation removed the whole of organic life from the sphere of physics and transferred it to the original divine act of creation. Generation was excluded as a legitimate scientific problem; preformationism was not science, it was the avoidance of science, a stipulative denial of the very possibility of a *life* science. But preformation faced serious empirical anomalies. Not only could it not comfortably explain monstrous births or hybrid forms, but it also implied empirical verification

of its postulated homunculi under the increasingly effective gaze of embryological microscopy.

The decisive idea, the great idea of the epoch, was *epigenesis,* the idea of emergent order as an inherent potentiality in nature itself. *Epigenesis* was the scientific theory expressing the fundamental intuition of *hylozoism.*[88] Through it, the boldest minds of the eighteenth century proposed to explain the continuity between the living and the inert by rendering "force" immanent in the physical world. Through it, as well, they proposed to explain the continuity of animal and man using comparative anatomy to access comparative physiology.[89] Finally, through it, they proposed to explain the continuity from body to mind through the analysis of nervous response and "material ideas."[90] Buffon wrote: "it is possible to descend by almost imperceptible degrees from the most perfect creature to the most formless matter; from the most perfectly organized animal to the most inert [*brut*] matter."[91] The "law of continuity" in its Leibnizian derivation, and the even older notion of the "great chain of being," came to be reconceived in terms of a dynamism that was altogether new. Arthur Lovejoy calls it the "temporalization of the great chain of being," the shift from a mere classificatory schema into a postulation of relation and development.[92] What made the theory of epigenesis so attractive is that, at the most fundamental level, it accorded nature more *intrinsic dynamism* than its rivals.[93]

Herman Boerhaave played a paradoxical role in this revolution. Though "a convinced Newtonian mechanist," P. H. Reill points out, "Boerhaave introduced the Trojan horse of substantialized forces."[94] In that context of theoretical discomfort, Boerhaave's two most famous students, Julien Offray de La Mettrie and Albrecht von Haller, each in paradoxical ways carried the revisionist impulse to a breakthrough around midcentury.[95] La Mettrie was as notorious in the middle of the eighteenth century for materialism as Spinoza had been for the prior century. But his materialism carried within it a great deal of the scientific novelty of the age.[96] La Mettrie's *title* and La Mettrie's *text* are two quite different things: there is a great deal more *vitalism* in La Mettrie's materialism than there is *mechanism.*[97] Moreover, his bold provocations made urgent the methodological and the metaphysical issues of the paradigm shift, with reverberations throughout all the "sciences of man."[98]

Haller simply was the most important pioneer in physiology of his generation, yet his religious and philosophical orientation remained very traditional. It was just this embarrassment that La Mettrie exploited. He recognized that Haller's own research was enmeshed in the new breakthroughs in the life sciences but that his personal religious commitments could not

accommodate their implications. Callously, he exposed Haller's discomfort by dedicating the anonymous and scandalous *L'Homme Machine* to him.[99] The nasty exchange that ensued between the two figures exposed the crisis of metaphysical and theological commitments that natural scientific developments were occasioning.

Figures like Haller, Bonnet, and Buffon found themselves torn between metaphysical allegiances to dualistic spiritualism and models in empirical life science that clearly undermined such neat distinctions. While it is important to emphasize the undeniable *vitalism* of their research programmes as empirical scientists, simply to label figures like Haller "vitalists" is to obscure this critical problem.[100] Haller could never affirm that vitalism in its *philosophical* implications. Like Haller, Bonnet strove, despite his own theorizing of the law of continuity, to enforce a thorough demarcation between animals—apes in particular—and man. Buffon, for all his other differences with Bonnet, was at one with him here.[101] He insisted that the "ape was no mediating link between the human and the animal orders of nature, but 'in truth just a plain animal.' "[102] Indeed, anatomical similarity only reinforced the claim that the difference which constituted humankind had to be sought in a separate, spiritual dispensation.[103] Reason and language belonged to a divine, spiritual intervention: that was the line which all these thinkers tried to hold.[104]

One of the ways in which these figures, most of them committed like Haller on religious or philosophical grounds to some form of dualism, could work in this field was to distinguish between a "rational soul," which was immaterial and spontaneously active, and an "animal soul," which was corporeal and if not entirely passive, at least susceptible to a "simple model" of causation, which we might anachronistically call "stimulus-response." The model was Haller's "irritability." The distinction between the vitalism of Haller and the animism of Stahl is one of the linchpins for an effective understanding of what was taking place in the life sciences in the late eighteenth century.[105] Yet Haller himself developed the idea of "sensibility," which, if associated physiologically with the nervous system, nevertheless allowed for the "spiritual" intervention in the physical world that all these figures recognized as an empirical fact.[106]

Bonnet's psychology was as influential in these regards as his theory of preformation.[107] As Hatfield explains, "Bonnet's psychology shared many features characteristic of the new psychological naturalism: he accepted dualism and the immateriality of the soul, without claiming to achieve an analysis of the substance of the soul; his arguments for the soul's immateriality sprang from the unity of consciousness and contrasted with

the conglomerate nature of material mechanisms."[108] At the same time he sought to assign the origin of all ideas to sense and describe the mechanism of their transmission to the mind in terms of "vibrations of nerve fibers and motions set up in nerve fluid," and especially to elaborate "the 'mechanics' (brain fiber physiology) of each sense with special thoroughness" (206). That made him Kant's target in his critique of "physiological" anthropology, even as it made him Kant's target for "transformationism" in both the first and the third *Critiques*.[109] For Kant, and not just for Kant, Bonnet seemed to be sliding into materialism. But that is just the problem: *all* these anxious thinkers charged the others with sliding into materialism. The boundary line was blurring beyond retrieval. All of these figures inevitably developed elements that *could* be taken in a strictly materialist vein. They dreaded just that. It was La Mettrie's grand offense to do just what they were afraid of. He made it clear that Haller, Bonnet, and Buffon, despite themselves, could be grist for an atheist-materialist mill. For science after midcentury, the divide that separated progressive from regressive "research programmes" (in the Lakatosian sense) came to be precisely the question of willingness or unwillingness to *explore and explain such continuities*. By that test, the greatest German scientist and the greatest German philosopher of the eighteenth century (Albrecht von Haller and Immanuel Kant, respectively) appear strikingly conservative.

Haller spent the balance of his career mending metaphysical fences between his pioneering physiology and the materialism it so largely presaged.[110] This tortured role as scientific inspiration and theological-metaphysical obstacle makes Haller a crucial figure in the transition to the new science in Germany. The new generation of biologists learned a great deal from his pioneering work in comparative physiology, particularly from his controversial account of "irritability" and "sensitivity."[111] Yet they had to struggle to create metaphysical as well as methodological space for the new materialism.[112] Despite Haller, the whole movement was toward "vitalism." In that vein, neither the "atheist" La Mettrie nor the "zealot" (*Ketzer*) Haller appealed to the younger generation.[113] Instead, *Buffon* proved the decisive influence.

Buffon and the Method of "Natural History"

In "The Gaze of Natural History," Phillip Sloan conceptualizes the development of a "natural history of man" in three phases: first, Linnaeus's step of classifying humans among the animals; second, Buffon's step of shifting the meaning of species from merely logical to real, from criterial to ontological; and finally, over the last part of the century, the incorporation of data

on empirical diversity drawn from the travel literature into a theoretical ethnography. We can take these as three decisive steps in the constitution of the discourse of anthropology in the European Enlightenment.

As late as 1693, John Ray had avoided including humans in his classificatory scheme; the break appears to have been Tyson's essay on the orangutan of 1699, which included man among the apes.[114] But it was Linnaeus who, starting in 1735, made Europe face the problem that "for the first time human beings were explicitly included within a formal classification of animals and plants."[115] Linnaeus made clear the implications of his move, that there could be no physiological basis for discriminating man from the rest of the animal kingdom.[116] Buffon argued that it was uncomfortable to accredit "transformationism" because it would betoken some embarrassing kinships people were not willing to consider.[117] The great debate in eighteenth-century life science about the "animal soul" was not so much over whether animals had souls or were mere automata as over "the potential conflict which any given answer carries within itself for the self-conception of mankind."[118] As Wolf Lepenies has insisted, *man* was at stake in every aspect of natural-scientific inquiry in the late eighteenth century.[119] Natural history bore directly on man's place in the cosmos. Theories of generation and species formation had direct consequences for human self-appraisal.[120]

Buffon's break with Linnaeus and advocacy of causal-derivative linkage had radical implications for the treatment of humans. "The location of human beings among the animals was combined with a radical historicizing and naturalizing of the human species that would pursue zoogeographical analysis of humanity in connection with a gradually developing schema of a naturalized account of cosmological and geological history."[121] But "the basis of the argument being developed here by Buffon is not intrinsically biological or even empirical, but epistemological," and its outcome was "opening to true historicity in the concept of species."[122] In terms of decisive importance for Kant, Buffon maintained that "the question [of biological species] is ontological and not simply criterial" (122). Still Buffon refused to erase the boundary between humans and animals. What physiology could not define, he was prepared to stipulate in terms of reason and language as irrefutable evidences of a spiritual nature in humans irreducible to natural elements.

There remains the third phase of the introduction of natural history into eighteenth-century discourse, the incorporation of travel literature into a methodical ethnography. The very idea of ethnography as a source of insight into human nature, and together with *physical* anthropology constituting

the *same* disicipline, Robert Wokler argues, is a recent notion.[123] The basis for the confluence was "a new understanding of man as a cultural being constituted through a historical process." Thus, the crucial concern to explain "improvement, refinement, liberty" led to a juxtaposition of the primitive and the civilized. "Comparative and historical methods became inextricable, together contributing to a properly *social* science."[124] A sense of the environmental context of human experience led to a fascination with non-Western cultures and the full-blown pursuit of *ethnography*—a term coined for Germany by August Ludwig von Schlözer precisely in order to raise historical inquiry to the level of true "universal history."[125] Here lies part of the explanation for the enormous vogue of travel literature. The key idea was that the *synchronic* dispersal of cultural levels demonstrated by the travel literature mirrored faithfully the *diachronic* evolution of human cultural levels, so that the juxtaposition of the "primitives" (Hottentots or Hurons) with contemporary Europeans told the same story of human "civilization" that could be constructed from the sequence of historical cultures from the ancient Fertile Crescent to the *siècle des lumiéres*.[126] One could set conceptually side by side Lafitau's *Moeurs des sauvages américains, comparées aux moeurs des premiers temps* and Voltaire's *Essai sur les moeurs* and establish four universal "stages of society."[127] Here, Buffon's most important reception came in the Scottish Enlightenment.

This grand "conjectural" project was the essential undertaking of the Scottish Enlightenment. It was there that the "science of man" found explicit articulation as "a genuinely sociological study of man, society and history."[128] The impetus is clear in Adam Ferguson, whose "whole approach to the study of man and society was grounded in the methods of the natural historians."[129] Likewise, Lord Kames "treated the whole of man's past as the subject of the natural history of man."[130] Monboddo and Kames proved enormously influential upon the German reception of the "natural history of man."[131] Hume, Ferguson, and Smith were decisive in advancing the idea of a "science of man" grounded in a historical approach to human societies.[132] The impact was not only on the *philosophy* of history but on the methodological practice of historiography.[133] Perhaps no one in Germany was as caught up in this whole consideration as Johann Gottfried Herder, but it is noteworthy that the professional historians, Johann Gatterer and A. L. von Schlözer were just as concerned to work out the implications of "ethnography" for "pragmatic history." The issue was precisely, how could one compose an authentic history of *mankind*? Herder and Schlözer would engage in a landmark debate on exactly that matter in 1772.[134] It betokened the full-fledged emergence of anthropological discourse in Germany.

The Emergence of German Anthropology

At the close of the eighteenth century, looking back with a synthetic historical eye, Georg Gustav Fülleborn wrote:

> [After 1750] anthropology in all its aspects and bearings became the concern of all, in particular at the instigation of English and French thinkers. Everywhere one insisted on the thorough study of the philosophy of life: The attention paid to natural history, philosophy of history, history of mankind, aesthetics, and pedagogy was partly the fruit, partly the cause of a practical approach in philosophy. This became increasingly popular and urged philosophers to look everywhere for new subject matter with which to enrich their discipline and to make it useful in life.[135]

British influence was even more important than French.[136] "British philosophy of the eighteenth century . . . is no philosophy of professors for professors, but rather a philosophy in the world and for the world. It received its direction from society and gave the society direction."[137] David Skene, physician and naturalist of the Scottish Enlightenment, "asserted that the natural historian had to draw on history, biography, plays, novels, and the pages of the periodical press for his evidence."[138] Hume was one of a whole host of British thinkers who seemed to be recommending the same strategy and bringing it to fruition.[139] "Psychology, that is the motto," writes Reinhard Brandt.[140] He concedes that continental thought never became quite so psychological and reason remained a metaphysical idea, and this is surely true for Kant. But the psychological turn—and with it the turn to observation and experience, to empirical, a posteriori science—proved preponderant impulses from Britain that swept up Germany in the 1760s and constituted popular philosophy and anthropology.[141] Brandt is clear that the *popular* orientation is part and parcel of the whole impetus. He traces it to "Addison's program . . . to bring philosophy into the coffee houses."[142] Addison himself represented this as the second phase of a democratization of philosophy, in which the first came when Socrates "brought Philosophy down from Heaven, to inhabit among Men."[143] One of Addison's allies in this endeavor was the Earl of Shaftesbury, who complained that philosophy "is no longer active in the world. . . . We have immersed her, poor lady, in colleges and cells."[144] The British eighteenth century set about liberating her, and the primary vehicle was the blurring of the boundary of philosophy and literature in the common pursuit of (empirical) *psychology* as the key to human nature: in a word (though largely without it), *anthropology*.

One of the texts that transmitted the Western European impulses into German psychological discourse was Carl Friedrich Flögel's *Geschichte des menschlichen Verstandes* (1765).[145] In explaining his ambitions for his work in the preface to its second edition (1773), Flögel noted, "I wanted to maintain the methods of a natural scientist; to observe man himself or to see him observed by other reliable witnesses, and on this basis essay to construct a natural history of human understanding."[146] Flögel particularly disowned a "speculative" approach: "one ought to derive theory out of the given data and not, inversely, data from speculation" (7). Moreover, given the complexity of the matter at hand, overly drastic reduction in explanation was counterproductive: "an all too exact determination of human understanding leads us into labyrinths" (8). Huarte, in Flögel's view, had opted prematurely for an environmental determinism and Helvétius, in response, had asserted an equally reductive cultural determinism (7). Instead, a patient, empirical accumulation of relevant materials seemed an essential point of departure.[147]

The natural history of the human understanding as Flögel sought to present it was a form of *schönen Wissenschaft*—in the broad sense of *studia humanitatis*. He insisted upon the integrity and seriousness of this form of *Wissenschaft* in explicit defense against its disparagement by Christian Wolff: "Wolff, that great mind, . . . knew little of the beautiful arts and sciences, [and yet] how often in his lectures would he make fun of linguists and '*Schöndenker*' as he liked to call them."[148] The undertakings that constituted the natural history of human understanding set out under this cloud of disparagement in Germany, and Flögel sought to vindicate their legitimacy. The source of the disparagement, as Flögel clearly understood, was an imperious "received view" of philosophy as the arbiter of all science. Logic and metaphysics still presumed to constitute "first philosophy," and as such, first *science*. But it did not appear constructive to the other disciplines to await philosophy's *imprimatur*. Eighteenth-century inquiry into human nature—what would after 1770 call itself *anthropology*—constituted the birth of what we would today call the social sciences—or better, the humanities and the social sciences—not simply a vulgarization of "rigorous science," that is, philosophy grounded in a priori principles. The proper register in which to regard this phenomenon historically, I am contending, is the "calving away" or speciation of new disciplines. In that frame, it is simply begging the question to insist upon philosophy's prerogatives.

The core of a natural history of the human understanding was *psychology*, and psychology had to consider the relation of the mind to the body. "I do not propose to treat how the soul acts upon the body, but rather how the body and its different conditions have an influence on powers of the human soul"

(138). Flögel realized that the Leibnizian doctrine of preestablished harmony, or the philosophy of "monadism" as he termed it, denied the interaction of body and mind, but he argued that the "best philosophers" nonetheless operated on the assumption that the body affected the mind. He abjured achieving a *metaphysical* resolution of this problem, but he insisted that it was still possible to make empirical and pragmatic inroads into knowledge of the *fact* of body-mind interaction, however impenetrably mysterious its ultimate metaphysical ground (137–38). Along these lines he pointed to the work of Reimarus on the comparison of animal and human capacities, to the first efforts at brain physiology, to Haller's work on sensitivity in embryos, and to Krüger's program for an experimental psychology—all as impulses toward an empirical science of (physiological) psychology of great utility to the natural history of human understanding (or, anthropology) (140–54).

One crucial domain for inquiry in this psychology was the question of *genius*. The term came to theoretical attention, Flögel averred, first in France, but it had become the focus of intense discussions throughout Europe. He summarized the view of Du Bos, of Haller, of Helvétius, of Baumgarten, and of Sulzer (13–57). Genius as a *topic* and genius as a *resource*—this represents one of the most important elements in the emergence of anthropology in Germany. It proved of enormous interest to Mendelssohn, to Herder, to Platner, to Garve—and even to Kant. In Berlin, Resewitz, delivered a lecture on the subject of genius in 1755.[149] In 1757 Johann Sulzer addressed the Berlin Academy with an important "*Analyse du génie*," which was then published in the Academy yearbook.[150] Mendelssohn's theory of genius was part of this whole series of considerations taking place within the Berlin *Aufklärung*. In his essay on the sources and linkages of the fine arts and sciences, Mendelssohn had adhered firmly to Baumgarten's theory of *ingenium* as formulated in §648 of the *Metaphysica*, in other words, that genius was the perfect harmony of the human faculties, but no separate faculty of its own. But in his reviews for Nicolai's journal, the *Briefe, die neueste Literatur betreffend*, starting in 1759, Mendelssohn began to move away from Baumgarten's theory. The first sign of this is Mendelssohn's defense, in the sixtieth letter, of the "unschooled" genius against those who insisted that genius must always be tutored by taste and regimen, as Gottsched and Gellert had made the premise of German criticism.[151] Mendelssohn's effort to integrate foreign aesthetic theory into the German approach led him, perhaps somewhat unintentionally, to shift the discourse in a psychological and empirical direction away from Baumgarten's project as a cognitive approach to beauty. By incorporating a more psychological approach into his essays, especially the later ones, Mendelssohn helped bring the sensationalist and

naturalistic viewpoint of Du Bos, Batteux, and the French Enlightenment, and the related British school of Shaftesbury, Hutcheson, Kames, Hume, and Burke into fashion in Germany.

Shaftesbury set the British discussion in motion by linking genius with the "principle of pure aesthetic intuition," or "the process of pure creation" (322–25). He shifted the inquiry into beauty "from the world of created things to the world of creative process" (316). Thus, Porter observes that "after Shaftesbury the basis for aesthetics shifted from metaphysical geometry to empirical psychology, but the method of such analysis was largely introspective."[152] Shaftesbury sought to articulate a notion of human creativity and spontaneity of a sort that, while immanent, was not material or mechanical.[153] The linkage of the strong feeling within the subject with imaginative responsiveness to grandeurs in the outer world of Nature provided all the elements of a theory of human creativity, the crucial notion of "genius."[154]

The idea of the "unschooled" as opposed to the "learned genius" came from Addison's celebrated essay on genius in the *Spectator* in 1711, which had been translated into German in 1745.[155] While Addison celebrated the natural genius for the originality and power of his work, he also warned that this was exceedingly rare, and that it was highly dangerous to emulate such figures. The British Augustans generally believed genius could quite comfortably go to school in taste, learn rule and reason, and emerge the better for it as Virgil had done among the ancients, and Pope, among the moderns. It was against this that Warton rebelled in *Essay on the Genius and Writings of Pope* (1756). He denied that Pope was a genius at all. *Genius* meant for him precisely the mysterious and unschooled "originality" of a Shakespeare. In what was the most famous manifesto in this vein, *Conjectures on Original Composition* (1758), Edward Young put this quite bluntly: "An Original may be said to be of a vegetable nature, it rises spontaneously, from the vital root of Genius; it grows, it is not made."[156] Works of art developed as an organic consequence of the genius's soul.[157] Finding a response to this "enthusiastic" theory of original genius preoccupied the most serious philosophical minds in Britain in the late 1750s.[158] Mendelssohn and his colleagues were quite familiar with the debate provoked by Young's view, and had published an earlier essay by the poet in the second volume of their *Sammlung vermischter Schriften zur Beförderung der schönen Wissenschaften und der freyen Künste* (Berlin, 1759).[159] Flögel and the other anthropologically oriented popular philosophers thus took genius as a central concern for psychology as well as an essential resource for insight. All the major works in this vein would offer extensive discussions of genius.

Another important impetus in the *schönen Wissenschaften* and in the "natural history of human understanding" was the pursuit of historical inquiry, especially under the new methodological rubric of "pragmatic history." Flögel from the outset sought to present his own work as governed by the ideals and aspirations of this new idea of history.[160] Linking this new methodological aspiration with his elaborated theory of genius, Flögel suggested that even historians could demonstrate genius, but only if they conducted their inquiry pragmatically, that is: "If [the historian] writes pragmatically, if he tracks down the sources of events and the tiniest circumstances which often have so great an impact on the most important events though they are hidden from ordinary perception, then [he] demonstrates insight and discrimination and not mere memory" (26). The idea of pragmatic history was especially crucial for Herder.

I have suggested throughout that the impulses I have identified with popular philosophy and with anthropology linked up directly with the Enlightenment ambition for social-political progress, even in Germany. In one of the later chapters of his work, Flögel made the important observation that Shaftesbury and Addison, in addition to their advocacy of popularized philosophy, stood out as admirers of republicanism (225–30). That is, interest in the new science of man had a political overtone. Enlightenment, to make the point again, was for these advocates of anthropology not simply a matter of *popularization* but of *progress*, social and political change.

Empirical psychology in all its complex manifestations represented a major current of thought transmitted to Germany from Britain.[161] This was true from literature to medical practice to formal philosophy. W. H. Walsh argues that what distinguished the British empiricists from Kant was their commitment to a psychological reductionism.[162] "When Hume discusses what he calls 'the operations of the understanding' his ambition is to reduce them as far as possible to 'transitions' in the 'imagination' which come about as a result of past conditioning. . . . What we have here is not logic . . . but psychology: an account of mental operations which simply takes them as facts, without any attention to their purpose" (408). Locke and Hume carried German psychology away from its rational elaboration in Wolff and Baumgarten toward a physiological-observational psychology, an *Erfahrungsseelenkunde*. This was expressed most famously late in the century in Karl Philipp Moritz's journal, *Gnosse Seauton: Magazin für Erfahrungsseelenkunde* (1783–1793).[163] Martin Davies demonstrates effectively how Moritz's agenda for *Erfahrungsseelenkunde* was not simply idiosyncratic, but derived from the Berlin medical milieu in which his thought developed, especially the thought of Marcus Herz, Kant's student and one of

the most prominent physicians in Berlin, if not Germany altogether.[164] While Moritz's journal sought to systematize for the public the epistemological and scientific status of case-study analysis, this was a longstanding medical practice already.[165] Specifically, as Davies notes, the medical practice out of which Moritz developed his ideas involved "the assumption that the task of diagnosis is concerned with both the physical and moral nature of man."[166]

The German "Philosophical Physicians"

In the traditional early modern German university, the faculty of theology reigned. Gradually, in the era of absolutism, cameralist concerns with "policing" the state, together with the emergent sense of a "society" of economic activity in tension with the administrative state, promoted the faculty of jurisprudence to prominence.[167] Medicine was the one higher faculty in the German eighteenth century that seemed not to be pressing for any leadership role in academic culture. And, perhaps, within a strictly *academic* perspective, that remains true.[168] But by midcentury, medicine as a discipline *was* making a grander claim for itself, not within but beyond the academy, in the sphere of lived experience. Medical thinkers made the "whole man" an issue. In medicine the categorical dualism of body and soul made no sense at all. Physicians refused to allow "life" to be mystified into an inexplicable fiat. The register was not initially or essentially metaphysical or theoretical. It was not even simply diagnostic. It was *therapeutic.* The concern of the medical theorists was a health that required the harmony of body and soul and that had to attend to their mutual determinations. They had no choice but to intrude into the sacrosanct spheres of metaphysics, to become, in the revealing phrase of the day, "philosophical physicians."[169]

That term originated in France as a rubric for the school of Montpellier, among others. Bordeu was among the most explicit in identifying himself as a *médecin philosophe.*[170] La Mettrie, another example, insisted that the philosophical physicians, and only they, could penetrate through the labyrinth of man.[171] The French "materialists" saw themselves as anthropologists, and they proceeded with the "optimistic attitude that a physiological consideration of man would throw light upon obscure epistemological and moral-legal problem constellations."[172] But the same impulse animated the Scottish Enlightenment. John Gregory was unquestionably a "philosophical physician." He "drew on Bacon's methodological legacy and developed a natural historical, comparative method, which incorporated the investigation of both body and mind, along with their interconnections" in his important work *A Comparative View of the State and Faculties of Man with Those of the Animal World* (1765).[173] He "recommended as 'a very important enquiry to a physician' the investigation of the 'laws relating to the mutual influence of the mind and body upon each other,' along with the study of the 'history of the faculties of the human mind' " (93).

This "medical enlightenment" was the decisive background out of which anthropological thought arose in Germany after the middle of the century. Kondylis has made the important argument that the Enlightenment engaged in a "rehabilitation of sensibility" not simply in the sense of taking sensible experience seriously in cognition but in recognizing and attaching positive value to the animal nature of man.[174] This was the special project of the "philosophical physicians." One leading "philosophical physician" in Germany was Johann August Unzer.[175] In *Philosophische Betrachtungen des menschlichen Körpers überhaupt* (1750), Unzer maintained that there was a complete duplication or correspondence between every mental and every physical event in the human organism (43). From 1759 to 1764 Unzer edited *Der Arzt,* the most important periodical advocating "philosophical medicine" at midcentury.[176] Another key figure was Karl Wilhelm Friedrich Struve, who published *Anthropologia naturalis sublimior* in 1754. He called it *sublimior* because it included a discussion of the "higher faculties" within a general discussion of man: indeed, Linden sees Struve as the key forerunner of Ernst Platner in stressing the essential feature of anthropology as the wholeness of man.[177]

The philosophical physicians found the antimetaphysical thrust of empiricism distinctly to their liking. They were committed to *influxus physicus* as a methodological premise, even if they recognized that they could achieve no metaphysical solution to the conundrum of the *commercium corporis et mentis.*[178] The work of the "philosophical physicians" was caught in the polarized field between Stahl's animism and La Mettrie's materialism, but like the latter they were determined to let "experience and observation [be] our sole guide."[179] The dominant medical hypotheses of the day presented a similar polarity, between Boerhaave's "humoral" and Stahl's "animist" theory of disease, but, as Wolfgang Riedel observes, "independently of the discussion about humoral, nervous or spiritual causes of illness, the therapeutic measures aimed at one and the same time at body and at soul."[180]

The crucial enterprise was to develop empirical psychology from a medical vantage. The heroes of the "philosophical physicians" were the physiological psychologists, above all Albrecht von Haller and his disciples, Johann Georg Zimmermann and Charles Bonnet. Zimmermann published an important tract on medical practice, *Von der Erfahrung in der Arzneykunst* (1763–1764), in which he insisted that physicians needed to be diagnostic not only

of the physical but of the moral condition of their patients: "Moral and medical observations require the same spirit of observation. Whoever is capable of observing moral man well is capable of observing his illnesses well. . . . A true physician determines the illnesses of the body through immediately and correctly observed signs, just as a true moralist [discerns] the dispositions of minds."[181] This is no exact science, Zimmermann admits, but it is an essential *empirical* practice.[182] That is, "empirical knowledge is historical, narrative, and indicative."[183] Thus, Zimmermann celebrated his mentor, Albrecht von Haller, for having an interest simultaneously in anatomy and in literature, thus modeling what it meant to be a "philosophical physician."[184]

Another key figure in German "philosophical medicine" was Johann Gottlob Krüger (1715–1759), a member of the medical faculty at Halle, then, later in his career, at Helmstedt. Krüger was a dedicated disciple of Wolffian *Wissenschaftlichkeit*, and he sought in his three-volume *Naturlehre* (1740–1749) to offer a rigorously causal account of human health not based merely on empirical ("historical") knowledge but grounded in principles, hence a "philosophy of the human body."[185] His later *Versuch einer Experimental-Seelenlehre* (1756) was another crucial text in the emergence of "philosophical medicine."[186] His key theoretical recourse was to the physiology of Albrecht von Haller. Krüger's interpretation of the body was "vitalist" but not "animist." He explicitly rejected Stahl.

In the first half of the eighteenth century, as John Yolton has observed, most advocates of the "physical influx" tradition were "content to trace the physical antecedents of perception to some area of the brain. . . . What the connection was between brain states and perceptual awareness (between body and mind) was left blank."[187] In the second half of the eighteenth century, advocates of physical influx became bolder. Central to the constitution of anthropological-psychological discourse in the second half of the eighteenth century in Germany was the concern with *animal soul*. Already a substantial literature had developed on this theme in France, and the Germans took that up and elaborated on it.[188] A particular focus of the German writing was the identification of language as the decisive divide between animals and man. The controversy centered on whether the orangutan could speak.[189] Anatomically, some thinkers argued, the ape should be able to do so. That only confirmed the spiritual nature of the distinction of humans from the other animals. The origin of language marked a decisive providential intervention in human history. This was the line taken up in Germany. G. F. Meier published *Versuch eines neuen Lehrgebäudes von den Seelen der Tiere* in 1749. Herman Reimarus was another important theorist in this vein. His *Allgemeine Betrachtungen über die Triebe der Tiere, hauptsächlich über ihre Kunsttriebe* (1762) insisted that there was a categorical difference between humans and animals, namely language capacity, that could not be naturalized.[190] Along the same line, Johann Süßmilch wrote an essay on the problem of language in connection with animals in 1766.[191] This was the direct provocation to Herder's prize-winning essay on the origins of language, 1772, one of the breakthrough works of German anthropological discourse.[192]

Anthropology as *schöne Wissenschaft*: The "Göttingen Program"

Anthropology as a new discourse in Germany was the product of the alliance of these "philosophical physicians" with the popular "philosophers for the world."[193] Together they raised the new anthropology "into the central science of the time and into the more or less radical science of enlightenment."[194] Wolfgang Riedel minces no words: "One does not overstate to say that the German late Enlightenment stood out as an epoch of empirical psychology."[195] Accordingly, anthropology became "the royal science of the second half of the century."[196] With regard to this empirical psychology, no boundary could be set between science and literature. This was particularly vivid in the sibling nature of the domains of anthropology and aesthetics.[197] Wolfgang Riedel writes of a "triangle" formed by psychology, moral philosophy, and literature.[198] As Helmut Pfotenhauer has argued, literature was utterly embroiled in the ascendancy of anthropology as "the new, popular science of the eighteenth century" both as instigator and as executor.[199] To consider literary authors as merely the receivers of psychological insight from scientists and philosophers simply will not do.[200] Hume was explicit in his acknowledgment of psychological insight from Alexander Pope, and there are few texts that so firmly deserve central place in any history of eighteenth-century anthropology as Pope's *Essay on Man*.[201] A strong case can and should be made as well for Laurence Sterne's *Tristram Shandy* as a major sourcebook for psychology, not simply a derivative of it.[202] In 1770 an astute observer of the times, Christian Garve, came to the conclusion that "the turn to psychology, that optic for analyzing the soul, was the real point of differentiation between ancient and modern literature."[203] It constituted the programmatic literary theory of authors like Wieland, Blanckenburg, and Engel. Wieland called it "pragmatic" narrative, for it cast an analytic glance into the souls of its characters.[204] Blanckenburg recognized literary authors, especially novelists, as *authorities* on psychology, working in parallel and in competition with physiological psychologists.[205] The psychological novel became a vehicle, indeed a school, for moral judgment in the eighteenth

century (35). Blanckenburg's celebrated theory of the novel of 1774 saw this as its decisive domain, and he used as his crowning evidence Goethe's *Sorrows of Young Werther* (1774).

In the late 1760s, as the impulses in medical psychology combined with the considerations of metaphysical teleology associated with the *Bestimmung des Menschen*, the German discourse of anthropology achieved its breakthrough. Feder and Meiners launched the "Göttingen program" of empirical inquiry into human experience.[206] In the hands of Feder and Meiners, the Göttingen program represented the most aggressive agenda for *Popularphilosophie* in Germany in the *Hochaufklärung*.[207] The "flowering" of the Göttingen school spanned the *Hochaufklärung* from the call to Feder and Meiners in 1768 to the fatal denunciation in Kant's *Prolegomena* (61). Indeed, this school dominated German discourse for a generation before its infamous and catastrophic tangle with Immanuel Kant's critical philosophy in the years 1781 to 1783.[208] Colored by a (moderate) skepticism of British provenance, these philosophers propagated a critical-empirical eclecticism "not without an enlightenment pathos for thinking for oneself."[209] The movement had a "prelude" in the more than fifty-year tenure of Samuel Hollmann, the first professor of philosophy at Göttingen and a strong anti-Wolffian.[210] By the time Feder arrived in 1768, though, Hollmann was, in Feder's words, "perhaps a bit too learned for the younger people, perhaps too old and too dry for the aesthetic tone that had come to dominance by that time."[211]

Feder became the acknowledged leader. Born in 1740, he had completed his dissertation in 1765 at Erlangen under Suckow. The dissertation was a defense of man as a social animal, against Rousseau's paradoxical primitivism.[212] Indeed, hostility to Rousseau was one of the prime movers of Feder's early work. In 1768, anonymously, he published *Der neue Emil*, offering a far more conventional idea of education over against Rousseau's radical original.[213] In 1767 he published a textbook entitled *Grundriss der philosophischen Wissenschaft nebst der nöthigen Geschichte zum Gebrauch seiner Zuhörer*.[214] It sufficed to win him the *venia legendi* to Göttingen a year later. But, as Zimmerli has it, "When he came to Göttingen in 1768 Feder had no powerfully developed systematic or methodological standpoint."[215] The *Grundriss* was "an opportunistic and an embarrassing book [*ein Ge- und Verlegenheitsbuch*]" (64). Feder himself admitted he was "not yet ready for Göttingen. Without a fixed system, I waffled between Wolffian dogmatism and a skepticism produced by natural inclinations and readings[;] deeper insights had not yet been distilled, and proper bounds had not yet been established. These traits must have been discernible to

any expert."[216] His inaugural lecture was entitled *De sensu interno* and it appealed to Locke and the Scottish Enlightenment for a new approach to philosophy.[217] Immediately he plunged into the production of a textbook more in keeping with the avant-garde status he had suddenly attained. In the preface to this second textbook, *Logik und Metaphysik nebst der philosophischen Geschichte im Grundrisse* (1769), Feder proclaimed the book he had published only two years before and which had earned him the call to Göttingen "unusable," assuring his readers that he had applied himself "to prepare a more appropriate [textbook] for my current lectures."[218] A striking feature of the opening section, "Preliminary Report on Philosophy and the Philosophical Sciences in General," is that it sets out with an epigraph from Herder's *Fragments on Recent German Literature: Third Collection*.[219] The anonymous text gave expression to a sense for philosophy to which Feder felt an obvious kinship: "That philosophy [*Weltweisheit*] is the goddess of my heart which to begin presents sensible understanding, deigns to speak its language, goes along with it and then finally appears to it in the sphere of reason with all the brilliance of distinctness, then disappears."[220] Just this manner, Feder argues, seems to him the best way to present philosophy to his students (6).

One of the central features of popular philosophy as I have tried to reconstruct it historically, is its insistence on the importance of the humanistic disciplines for the pursuit of philosophy, not only in terms of the *tone* of its presentation but in terms of the educative and humanizing burden of its content. At the outset of *Logik und Metaphysik* Feder proclaims, "it is my intention to advance knowledge that is of general utility."[221] Feder carries virtually unchanged from his earlier book into the new one a defense of the *schönen Wissenschaften* as the "daily physicians" of philosophical taste.[222] In his 1767 textbook, Feder had written, "Nothing is more unjust than when one urges that philosophy have nothing to do with the *schönen Wissenschaften* and nothing is more foolish than when one imagines that philosophy can do without them."[223] In the new text Feder writes "Who could doubt that the *schönen Wissenschaften* must be the tenderest friends, the most constant playmates of philosophy?"[224] This literary adornment of philosophy was rapidly becoming insufferable to Kant, as we shall see.[225]

The most important endeavor of Feder's new textbook, which became a best-seller in Germany and made him one of the most prominent philosophers of the decade, was to advance a starkly psychological reinterpretation of logic, deriving it from common sense. The origins of this notion lay unequivocally in John Locke. In *Logik und Metaphysik*, Feder made that clear in the crucial section on the "History of Logic." John Locke's *Essay*

Concerning Human Understanding, he wrote, "without doubt marked the most important epoch in the history of logic since that of Aristotle."[226] In addition to Locke, the origin of this notion lay in the Scottish Enlightenment, and especially in the "common sense" school.[227] But Feder was not nearly so rigorous as Reid or Beattie in his theory of knowledge. He opted for what Zimmerli calls a "quasi-empiricist basis" that he could never clarify. The resulting criterion of truth was utterly subjective: "what for all men cannot be thought otherwise, that, therefore, is true."[228]

Klaus Petrus argues that the idea of a "psychologistic grounding of *logic* in the sense of tracing logical thought back to healthy common sense" was the core idea of the Göttingen program. Feder inaugurated it, albeit imprecisely, and it was "carried to completion in a radical manner by Meiners with his distinction of exoteric from esoteric logic."[229] Zimmerli agrees, noting that not only Meiners but Feder's student Michael Hißmann, before his untimely death, carried out this program with great rigor. The upshot was to find metaphysics completely pointless, a conclusion Hißmann drew explicitly.[230] Hißmann produced a survey of literature in philosophy in 1778 that the review in the *Allgemeine Deutsche Bibliothek* recognized as one of the most discerning assessments of the trends in thought in the decade, and that made it clear that metaphysics was obsolete and "as an independent discipline should be allowed to disappear entirely."[231] In its place, Hißmann presented a rich characterization of the emergent fields of anthropology and philosophy of history. The reviewer was thoroughly in agreement: "That history is the main repertory of philosophy is correctly observed" (248).

The text that, in my view, presented the most persuasive formulation of the Göttingen program appeared anonymously in 1772.[232] The book was entitled *Revision der Philosophie*, and the author, an open secret, was Christoph Meiners. It was greeted with an enthusiastic review (also anonymous) in the *Göttingische Anzeigen von Gelehrten Sachen*.[233] (The reviewer was not really secret either: it was Feder.) More than anything Feder composed, I suspect, *Revision der Philosophie* must have presented itself as a fundamental challenge to Kant's conception of philosophy, especially after his critical turn.[234] Meiners, like Feder before him, took a Protagorean view of philosophy: "I believe that knowledge of man in this sense not only encompasses all the objects worthy of investigation by a philosopher, but also that it determines the boundaries [of philosophy] and its kinship with other sciences, and finally that it determines the differing order of importance for the presentation of its parts."[235]

Meiners was an unequivocal Lockian.[236] The core of his book was the argument that logic be reduced to psychology. "Psychology and logic are related to one another," his famous simile went, "like an Aesopian fable to the attached moral."[237] Thus, he proposed to discriminate two ideas of logic, the esoteric and the exoteric. While the former was a matter for abstruse thought, it was also not immediately accessible and not for the uninitiated. First, Meiners argued, novices needed to go through the preparation of "exoteric logic." That entailed first, familiarization with a complete ("encyclopedic") scheme of the disciplines; second, a study of general theoretical-scientific prejudices; third, an investigation of what was fashionable in the current culture; and fourth, practical guidelines for (a) how to be a scholar, (b) what to read, and (c) the "art of observation" (23). Meiners laid out his schema for this exoteric logic in great detail.[238] As to esoteric logic, Meiners thanked Locke and Sextus Empiricus for keeping him from getting lost in all the nonsense of false precision (161). At the conclusion of his inquiry, Meiners averred, "I perceived that it was not possible to divide psychology from logic, and still less to allow the first to derive from the second" (164).

As his main sources for an adequate psychology, Meiners pointed to Condillac and to Bonnet.[239] But he appreciated most David Hume's radical dichotomization of philosophy into two camps—philosophy of ordinary life and esoteric metaphysics—the better to debunk the latter. In Germany it was hard to grasp Hume because "in Germany hardly anyone knows the first kind, because we still have too few writers who have made true philosophy available in the language of the beautiful world."[240] To accomplish this, Meiners contended, philosophy needed support from the *schönen Wissenschaften*. "History of mankind has filled the gap which lay between the general doctrines of philosophy and the particular facts of history. Before the long separated sisters were reunited, philosophy had lost herself in useless and indeterminate general propositions which had no fixity, no ground on which they were built; the historical inquirer on the other hand was bereft of principles and illuminating ideas through which the formless givens of history could be properly taken up" (139). It would be wonderful, Meiners professed, "if aesthetics and the history of the human mind and heart would be regarded as sciences which an ordinary professor of philosophy could not do without."[241] Unfortunately, metaphysics, "as soon as she elevates herself to queen of the sciences, contemplates beautiful literature, history and classical scholarship as unworthy slaves."[242]

Most significantly there was what Zimmerli called an "explosive element" in Meiners' *Revision:* "Once one can show that no philosophical opinion in the tradition has any advantage over any other, that all of philosophy can be transformed into the relativism of history, one forces oneself and others to think *independently* [*selbst denkend*] in coming to a position: 'The

great advantage of this method, transforming all of philosophy into mere philosophical stories, would be without question the healthiest imposition which one could make upon one's audience to think for themselves.' "[243] The challenge of "historicity" to philosophy could not be stated more explicitly.

The constellation by 1770 was clear. Gatterer had established the *Allgemeine historische Bibliothek* to propagate the new "pragmatic" history. Herder began the reflections that would lead to his *Essay on the Origins of Language,* and Ernst Platner began the work that would result in his 1772 publication, *Anthropologie für Ärzte und Weltweise,* a work that has ever since been recognized as the single most important indication of the emergence of anthropological discourse in Germany.

Ernst Platner's *Anthropologie für Ärzte und Weltweise*

Ernst Platner was the most important figure in the emergence of anthropology in Germany, much to Kant's consternation. Platner's book defined the discipline for a generation. Eventually, however, Platner himself sought accommodation to Kantian philosophy, not least out of anxiety that his former student, Karl Reinhold, head of the Kantian circle at the University of Jena, would beset him with the same polemical vigor with which Reinhold and the Kantian circle assaulted the popular philosophers at Göttingen, whom Platner long admired, but whose reputations, he saw, were permanently destroyed by the polemic.[244] Platner was born in Leipzig in 1744, the son of a surgeon. His father's early death left his education under the care of the great Leipzig philologist, Johann August Ernesti, whom we have recognized as a pioneering advocate of popular philosophy in Germany. In Platner the two currents of popular philosophy and philosophical medicine were fused from the outset. His university studies fused medicine and philosophy and he became extraordinary professor of medicine at Leipzig in 1770 (12–13). He was a brilliant teacher, "an unconventional, witty-ironic scholar who encouraged his students to make use of their own understandings" (13). He was, as one of his students observed, a philosopher for the world, not a speculative metaphysician.

Platner's book of 1772 set out from the quandary of the Three Hypotheses, arguing bluntly that none of them worked, and that this aporia of metaphysics allowed a new, empirical natural science to intervene, "anthropology" under the aegis of the "philosophical physician."[245] Platner was more concerned to convince physicians that philosophy was worth their attention than to persuade philosophers to consider the medical issue seriously. He pointed to the precedents of Boerhaave, Haller, Tissot, and Zimmermann, constituting the tradition of "philosophical physicians" upon which he proposed to base his own enterprise (viii). At the same time, he expressed his skepticism about the accessibility of this empirical-physiological science to the ordinary layman or even the university student and maintained that his work was intended for specialists, as the title implies (xviii). He characterized the field in terms of three sciences: first, a physical science of anatomy and physiology; second, a mental science or psychology (in which he included logic, aesthetics, etc.); and finally, his own science, anthropology, which achieved a synthesis of the two prior sciences: "body and soul in their mutual relations, limitations and interactions" (xv). Wolfgang Riedel observes: "Platner's concept of anthropology marks the exact point at which physical and moral anthropology, which [the two most important philosophical lexica of the first half of the century] had kept strictly separate, enter into interaction."[246]

Platner saw himself synthesizing the work of Albrecht von Haller and William Cullen, creating a new "central science" by binding together "physiological, vitalistic and neuropathological medicine."[247] The problem, as Platner put is, was to conceptualize "the ways and means by which, out of movements of matter ideas emerge in the soul, and out of ideas of the soul movements emerge in matter."[248] Platner unequivocally advocated physical influx and devoted an important section of his text to "the influence of the body on the soul."[249] But he stressed *two-way* interaction, and he was very concerned—as were all the "philosophical physicians"—with the mental origins of physical disorders. Platner subscribed to the notion, already articulated by Haller and his disciple Zimmermann, that excessive mental exertion could result in brain damage (225–49). All in all, Platner relied heavily on Haller for his conception of the nervous system and its relation to the soul. "Platner's 'Anthropology' follows Haller's neurological model in all its parts: brain and nerves are a 'system of canals' in which a 'fluid material' called 'nerve fluid' or 'spirit of life' moves."[250] Given this fascination with the nervous system, Platner was very interested in the question of a "place of the soul [*Sitz der Seele*]" in the body.[251] For Platner, this could only be at the center of the nervous system, in the brain. (This was the sort of thing, as we shall see, that Kant could never tolerate, either in Platner in 1772 or in Thomas Soemmerring in 1795.)

But this is not to say that Platner abandoned the immaterialist view. He believed unity of consciousness required the immateriality of the soul, because only simplicity could account for that unity, and the body, like all matter, was obviously a compound.[252] "The essence of the soul cannot

be recognized via reason but only and exclusively via experience," Platner maintained. "The essence of the human soul consists not in thinking but in a power to think."[253] "The great difficulty for Platner as well lay in the question how one could describe the mediation of the physical with the psychic domains. The physician spoke of an inner movement of the nervous fluids in the brain and a setting of itself in motion by the powers of the soul. The reaction of the soul on the physical mechanism evaded all explanation."[254] Still, Platner was sanguine about the prospects: "The question of the influence of the body on the soul is therefore no more difficult that the question of the influence of any simple element upon another." That is, "the attraction of magnets, the reproduction of animals—among other recognized mysteries of nature—are to be sure incomprehensible [*unbegreiflich*], that is, the external possibility of their effects is unknown by virtue of an absence of experiential knowledge; nevertheless it is possible to offer all sorts of possibilities and hypotheses about them."[255]

Platner's work was reviewed prominently in the best journals in Germany. Johann Feder reviewed the work in the *Göttingische Anzeigen,* Christian Garve reviewed it in *Neue Bibliothek der schönen Wissenschaften,* and Marcus Herz reviewed it in *Allgemeine Deutsche Bibliothek.*[256] Feder's review suggests the important sense of affinity that the Göttingen Program felt for Platner's project. In the same year, anonymously, Christoph Meiners had published *Revision der Philosophie,* and Platner had recognized the affinity, referring to that work explicitly as sharing his vantage.[257] Meiners's work argued that it was impossible to distinguish logic from psychology, much less to derive psychology from logic, he argued that aesthetics was a form of psychology; and he argued that philosophy should be the study of man.[258] All this Platner fully endorsed. (So would Herder, but not Kant.) Garve's review was far longer than Feder's and even more welcome to Platner, who began a long correspondence with the reviewer.[259] Garve focused the bulk of his review, bespeaking his own and his journal's interests, on Platner's observations on imagination and on genius.[260] While he raised some questions, the review's overall tone was quite positive. Marcus Herz, too, offered a positive assessment, much to the (somewhat circumspect) disgruntlement of Kant. Herz, a practicing physician, fully endorsed the concern that physicians must have with the relation between body and mind.[261] He saw a clear therapeutic imperative: bodily remedies affect the mind just as mental regimens have positive physical effects. He postulated that there must be a systematic and exact correlation between mental states and physical states. Herz asserted that medicine could not proceed a priori in its methodology but must resort to observation and experience (29). Unlike

Garve, but understandably in a student of Kant, Herz was interested above all in Platner's account of cognition.

These reviews were uniformly positive, and so was the wider reception. Platner's book became the text for a number of anthropology courses that developed over the last quarter of the century in Germany despite his view that this was not appropriate. More important, it was cited as the seminal text in the field by a generation of authors. Mareta Linden has surveyed this material in detail, pointing especially to such key figures as Johann August Ulrich, Christian Erhard Schmid, and Johann Karl Wezel.[262] What she adds, and what we need to underscore, is that "consequently Kant follows a different path from the anthropologists of his time" (137). To be sure, after 1790 there would be sustained efforts to integrate Kant's version with the other, even by Platner himself, who feared the polemical Kantian clique in Jena led by his own former student, Karl Reinhold.[263] But for the better part of a quarter century, Kant's anthropology was at a considerable remove from what the preponderant pursuit of that field meant for Germany. Kant had little interest or confidence in *Erfahrungsseelenkunde.* By contrast, the young Friedrich Schiller, for example, steeped himself in these matters in preparing his various medical dissertations between 1779 and 1780.[264] Kant was *not* a significant resource, but Platner was. Linden neglects Herder in her study, but there is at least some evidence that Schiller's most important teacher in this regard, Jakob Friedrich Abel, was quite familiar with Herder's key work, *Vom Erkennen und Empfinden der menschlichen Seele.*[265] Platner—and Herder—proved extraordinarily important for the emergence of empirical anthropology in the late eighteenth century in Germany and—what needs underscoring—for a generation it was they and *not* Kant to whom the discipline looked for orientation.