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Creating Consilience

*Integrating the Sciences
and the Humanities*

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OXFORD
UNIVERSITY PRESS

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**THE METAPHYSICAL REALITIES OF THE
UNPHYSICAL SCIENCES: OR WHY VERTICAL
INTEGRATION SEEMS UNREALISTIC TO
ONTOLOGICAL PLURALISTS¹**

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In the spirit of academic debate I am going to assume the role of the Pyrrhonist with respect to the most distinctive and probably the most provocative (because it is imperialistic sounding) aspect of our conference mission: namely, the invitation to vertically integrate the humanities into the biological and cognitive sciences. My skeptical remarks will revisit (and at times recapitulate) discussions from the distant and not so distant past, including a quip by Woody Allen, parts of an address I delivered 10 years ago evaluating a similar unity of knowledge agenda proposed by the Harvard biologist E.O. Wilson (his so-called consilience program),² and including, as well, a pertinent 1868 remark by the English physicist John Tyndall concerning mind-body dualism that I discovered in the notorious (famous and infamous) essay "The Limits of Natural Selection as Applied to Man," written in 1870 by A.R. Wallace, one of the two most significant creators of the theory of evolution by means of natural selection.

Woody Allen asks in one of his books: "Can we actually 'know' the universe?" "My God," he replies, "it is hard enough finding your way around in Chinatown." This conference volume invites us to contemplate a less ambitious but nonetheless vast

1. I wish to thank my friend and colleague, the University of Chicago geophysicist Frank Richter, for the expression "the un-physical sciences" and for raising many searching questions over the years about the distinction within the academy between the physical sciences and the un-physical sciences (including mathematics). Parts of this essay were written while the author was a Rosanna and Charles Jaffin Founders Circle Member of the School of Social Sciences at the Institute for Advanced Study, Princeton, New Jersey.

2. That address was titled "A Polytheistic Conception of the Sciences and the Virtues of Deep Variety" and was delivered at a millennial year conference on the topic of "Consilience" organized by the New York Academy of Sciences and subsequently published in the *Annals of the New York Academy of Sciences* 935, 2001 (and reprinted in R.A. Shweder, *Why Do Men Barbecue? Recipes for Cultural Psychology*, Cambridge, Mass.: Harvard University Press, 2003). Sections of the current paper replay or draw heavily on that address as well as on some of my writings on the foundations of cultural psychology. See for example, R.A. Shweder, "John Searle on a Witch Hunt," *Anthropological Theory* 6 (2006): 89–111.

unification of knowledge proposal, specifically one that views mind/body dualism as an old-fashioned metaphysical belief and hence calls for the integration of the humanities into the biological and cognitive sciences. The original inspiration for the conference was an earnest hope that the humanities might be revitalized (they were judged to have run out of creative intellectual steam) by weaving together the fields of religious studies, normative ethics, literature, aesthetics, the psychology of the emotions, evolutionary biology and the cognitive and brain sciences into a seamless vertically arranged hierarchy of cause and effect explanation.

The phrase "the unity of knowledge," just like the word *consilience* popularized by E.O. Wilson, is an appealing expression, whose phonetic shape and semantic connotations sound an optimistic, even peace loving and ecumenical tone. Nevertheless, the real allure of the intellectual mission it designates, at least for those of our contemporaries who understand the ideal and find it attractive, can be traced to a particular metaphysical program and to a special set of closely related assumptions about the nature of science and the recent history of scientific progress. As I shall suggest later, the intellectual inclusiveness and academic accord sought under the unity of knowledge banner are, in fact, less conciliatory than appearances suggest. Those ideals are neither pluralistic in spirit nor of the live-and-let live variety, and the aspiration to integrate diverse fields of knowledge reaches far beyond the familiar and welcome goals of multidisciplinary or interdisciplinary cooperation. Indeed, one reason I was willing to risk the hazards of playing the part of skeptic at the conference was precisely because I believe that the vertical integration/consilience program is not likely to foster genuine reciprocal cooperation across disciplines, and is tacitly grounded in its own metaphysical viewpoint, one that is inherently hostile to, or at least suspicious of, many of the claims and much of the subject matter of the humanities—including some subjects pretty close to my own scholarly interests, such as morality and religion.

Most of the "consiliators"³ I know share an ontology or picture of reality that is largely materialist in orientation (ultimate reality, they assume, consists entirely of material things in fields of force) and an epistemology that is largely empiricist in orientation (all genuine knowledge, they assume, must be generated through the application of scientific methods and logical reasoning to sensory perceptions of the world). Many of them are eager to just get on with observing the facts of life and inducing the casual structure of reality. Many share with E.O. Wilson the empiricist's sense of impatience with philosophical disputes and conceptual analysis and tend to view the persisting pluralism or diversity of theoretical languages and intellectual stances or viewpoints in the academy as a failure of some sort or a measure of scientific immaturity.

Notably, most of the consiliators I know are upbeat these days. If they are restive at all it is because they are eager to convince the world that, as a result of recent research in the cognitive and biological sciences (and under the leadership of those sciences),

3. The term *consiliators* is coined and used in this essay to refer to researchers, scholars, public intellectuals, patrons, journalists and others who are devoted to the vertical integration/unity of knowledge mission.

the cacophonous, faction prone, paradigm laden Tower of Babel that has been the home for the humanities (and the more humanistic social sciences) has finally entered a progressive stage and is becoming more intellectually unified. Included prominently among those putative recent advances in the cognitive and brain sciences is the supposed empirical demonstration that mind-body dualism is untenable; in the light of such putative advances the consiliators argue that it is no longer reasonable to suggest that there is an inherent disjunction between the languages and methods of the humanists (who study "consciousness" and the life of the mind) and the languages and methods of the biological scientists (who study the workings of the brain). The consiliators in the academy, or at least those who fully understand the implications of their own program, have visions of the day when everything mental and ideational must, can, and will be explainable in physical terms using a theoretical language developed by the biological sciences.

The vertical integration project has also sought ways to incorporate the study of religious and moral consciousness into the cognitive and biological sciences.⁴ In that context the project has been an invitation to explain the existence and persistence of religion and morality, either by evaluating the extent to which, and the manner in which, the meanings, motives, and behaviors associated with religious and moral consciousness might make functional sense in the struggle for existence, that is, in terms of the direct contribution of religion to the evolution and survival of human beings, or, alternatively, by arguing that religion is simply an accidentally evolved and nonfunctional or adaptively neutral correlate of some other species typifying functional adaptation.⁵ Here the unity of knowledge/vertical integration program begins with the observation that religion and morality are universal (or at least widely prevalent) aspects of human consciousness. The analysis, for example of religious consciousness, then proceeds on the assumption that such distinctive and widely distributed human notions as the idea and experience of the soul, the idea and experience of the sacred, and the idea and experience of supernatural or non-natural forces and processes animating and motivating human beings and helping to make the world go 'round are essentially cognitive illusions or intellectual fictions either directly in the service of reproductive success or highly correlated with something else that is in the direct service of reproductive success. In other words, religious consciousness is re-described and explained (or, as some humanists might complain,

4. The distinctions and connections between religious consciousness and moral consciousness (and their relationships to other forms of consciousness such as common sense and scientific consciousness) have been major topics for analysis in the humanities.

5. Evolutionary biologists might describe a member of this taxonomic class as a relatively hairless social biped with a relatively large brain. I have elected to describe the class as "human beings," adopting the language or discourse of the humanists. Humanists have historically conceptualized that particular class as persons, as subjects rather than as objects and have tried to interpret and understand them as such. Thus they have taken a person-centered approach to their subject matter. They have done this largely because of their assumption about the existence of a set of human capacities—for language, self-consciousness, rational thought, morally motivated guilt, religious devotion and (the apparent) exercise of free will - which has inclined many humanists to view human beings as peculiar and special, and to taxonomically locate the species, as Pascal noted, somewhere between the angels and the beasts.

explained away) as a shadow or projection of the human mind whose only potential claim to fame (if such a claim to fame can be advanced at all) is its utilitarian value from an inclusive fitness point of view.⁶

With regard to the study of religion, consilience research is thus founded on the assumption that the intellectual products of the world's religions are themselves without objective or rational foundation, and, if viewed on their own terms, as intellectual claims about the existence and role of souls, the sacred and supernatural forces in human affairs should be judged to be either illusory, even if functional (as Sigmund Freud suggested long ago in his famous book *The Future of an Illusion*), or as delusional (as Richard Dawkins proclaimed more recently in his popular book *The God Delusion*). The basic assumption here is that, although the objects of religious thought do not actually exist, the religious impulse that seems so distinctive of human beings (and has seemed to so many humanists to place human beings somewhere between the angels and the beasts, in part because of the human capacity to forego utilitarian calculations and value things—truth, virtue, and sanctity—for their own sake) can be ultimately tamed, tied down, or hitched to a utilitarian theory about the natural evolution of the human brain.⁷

All this is very neatly suggested in the editors' introduction to this volume. There the main and unflinching contention—the one I referred to earlier as distinctive and provocative—is that the biological and cognitive sciences have now advanced to a point where it is not only feasible to produce a systematic and disciplined scientific account of "human level realities" (morality, religion, literature, emotions, aesthetics) but also (and this is where the provocation begins) to treat those subjects of humanistic scholarship as emergent realities without "ontologically fetishizing" them.

6. When pressed about their metaphysical assumptions, unity of knowledge consiliators who study religious and moral thought (and also care to be consistent in their rejection of mind-body dualism) are likely to hold that human mental states (wishes, wants, beliefs, values, feelings) are little more than shadows, manifestations, or projections of the material forces and processes studied in the biological and brain sciences.

7. It is noteworthy that A.R. Wallace, one of the two major creators of the theory of evolution, was so impressed by the capacities of the human brain to imagine, create, and do things that are complex, elevated and non-utilitarian (and, as he argued, not necessary for the biological survival of the species) that he hypothesized that the development of the human brain could not be accounted for solely by the theory of evolution. He argued, on the basis of his scientific observations, that any naturalistic explanation of the human brain required the invocation of a willful and intelligent process of harnessing natural biological forces for a purpose, a process of planful or intelligently guided biological development of the type we associate with the breeding of animals and the cultivation of new species of plants. He viewed himself as operating strictly within the bounds of scientific observation and reasoning when he suggested that there are "limits to the theory of evolution as applied to man"; and he fully anticipated that his claim that there are things in human nature that don't fit the theory would be scorned or dismissed by other devotees of evolutionary theory. Among the things that Wallace thought did not fit was the capacity and willingness of humans to invest things with a sense of sanctity, sacredness, or virtue and to honor and respect them regardless of the personal biological consequences.

CONCERNING ONTOLOGICAL FETISHES AND THE REALITY OF NON-NATURAL PROPERTIES

Now the verb phrase “to ontologically fetishize” is not a household expression (nor for that matter is the notion of “emergent” realities), but I think I know what the expression means. And I think I can guess how it is going to get applied to one of my main areas of humanistic research, namely, to the study of moral consciousness, with special attention to moral disagreements between members of different cultural communities.⁸

To ontologically fetishize is to treat something as real that is not real.⁹ It is to invest something with sanctity or inherent value that, in and of itself, is not deserving of respect. The very use of the expression itself reveals the metaphysical assumption of its user, and carries with it the implication that anyone who actually thinks that un-physical realities exist or subsist as objective features of the world is under the thrall of a superstitious, primitive, and irrational devotion to an outdated dualistic ontology. In making explicit this aim of the vertical integration agenda—the preemptive reduction of human level realities (classified as fetishes) to some level of reality (genetic, hormonal, neurological) viewed as more basic—one discerns how the consilience mission is far less conciliatory than the abstract idea of integrating the science and humanities may suggest.

Now, for the sake of the historical record, one might actually ask: Precisely how outdated is ontological dualism? By ontological dualism I have in mind a belief in the objective existence of both un-physical things (mathematical relationships, logical truths, objective values, abstract ideas, mental states—knowing, feeling, wanting and valuing, etc.) and physical things (neurons, hormones, genes, the particles of particle physics, etc.). I also have in mind the closely related belief that the un-physical realities are things in themselves and not simply or only complex emergences out of physical realities. As far as I can tell, ontological dualism is, and always has been, quite contemporary. Certainly it is the kind of metaphysical devotion that is characteristically embraced by normal, reasonable and morality-sensitive folk in all the cultures with which I am familiar. Indeed, that particular ontological commitment may well be precisely the kind of ontological faith that defines our common sense and makes human beings moral in the first place—the basic idea being that, beyond the physical, there is something more and that something more has value that is deserving of respect.

Dismissing that way of thinking as old-fashioned seems rather hasty and preemptive, given that it is also the way some very reflective and quite modern moral philosophers, for example W. David Ross, who was one of the great moral realists of the twentieth

8. These moral disagreements include such matters as polygamy, arranged marriage, physical punishment for children, sexual liberation and sexual modesty, male and female genital modifications, dietary practices and dress codes, a proper burial for the dead, and so forth. See for example, R. A. Shweder, M. Mahapatra, and J. G. Miller, “Culture and Moral Development,” in *Cultural Psychology: Essays on Comparative Human Development*, ed. J. Stigler, R.A. Shweder, and G. Herdt (New York: Cambridge University Press, 1990); also R. A. Shweder, N. C. Much, M. Mahapatra, and L. Park, “The Big Three of Morality (Autonomy, Community, Divinity) and the Big Three Explanations of Suffering as Well,” in *Why Do Men Barbecue? Recipes for Cultural Psychology*, ed. R. A. Shweder. (Cambridge, Mass.: Harvard University Press, 2003).

9. This is sometimes also called “reification,” especially in the social construction of reality literature.

century, reasoned about the moral domain. As noted in Philip Stratton-Lake’s brilliant introduction to Ross’s classic account of moral intuitionism *The Right and the Good*,¹⁰ Ross “believed that rightness and goodness are objective features of the world in just the way shape, size and mass are.” Morality, according to Ross is not an emergent reality, but rather a fundamental and autonomous reality that is not reducible to something mental or something material.

Ross was not only a moral realist; he was a realist in a way that is highly relevant to our conference proceedings. He was a “non-naturalist” realist, which is one way for a humanist to say “not so fast” to the project of vertical integration.¹¹ Paraphrasing and quoting Stratton-Lake: Non-naturalism in ethics means that Ross thought that moral properties (properties such as good, ought, valuable, duty, or merited) (properties connoting the idea of “something deserving of respect”) cannot be understood in wholly non-moral (that is to say, psychological, sociological, or biological evolutionary) terms. The non-moral terms of psychology, sociology, and evolutionary biology, Stratton-Lake notes, are terms such as *desire*, *approval*, *society*, or *survival of the fittest*. He goes on to say: “If you define “right” as meaning what is approved of by the community you are putting forward a naturalistic definition. If you define “good” as meaning “such that it *ought* to be desired, you are putting forward a non-naturalistic definition.”¹²

To avoid misunderstanding, it is important to note, as Stratton-Lake points out, that so-called

consequence theories of morality also may be either naturalistic or non-naturalistic. If, as a consequence theorist, you define “right” as “productive of the greatest pleasure,” [or “productive of the survival of the group”] you are putting forward a naturalistic definition. If, as a consequence theorist, you define it as “productive of the greatest amount of *good*,” you are putting forward a non-naturalistic definition.

(Parenthetically I would remark that, although I have been a critic of many aspects of Lawrence Kohlberg’s stage theory of moral development I believe Kohlberg is quite right that a fully developed understanding of the meaning of goodness and rightness by human beings in all cultures requires that goodness and rightness be defined in non-naturalistic terms—as that something more to which one shows respect because it is worthy of respect)¹³

10. David Ross, *The Right and the Good*, Oxford University Press, 2003, edited and with an Introduction by Phillip Stratton-Lake.

11. Indeed I would hazard the guess that “non-naturalism” is the characteristic stance in the humanities and humane social sciences, which is one of the several reasons many humanists resist the vertical integration agenda and may even recoil at the dismissive parodies of mind/body dualism that are now commonplace in the biological and cognitive sciences.

12. Phillip Stratton-Lake, Introduction to David Ross, *The Right and the Good*, (Oxford, UK: Oxford University Press, 2003), xi-xii.

13. For a critique of Kohlberg and a discussion of his approach to morality more generally see, for example, R. A. Shweder, M. Mahapatra, and J. G. Miller, “Culture and Moral Development,” in *Cultural Psychology: Essays on Comparative Human Development*, ed. J. Stigler, R.A. Shweder and G. Herdt (New York: Cambridge University Press, 1990).

Notice that to seek an emergent account of the human level reality called morality (and to do so without ontologically fetishizing the domain of moral values) is to understand moral properties in wholly non-moral terms—the supposed ontological fetish in this instance being the very idea of objective moral values. This amounts to the substitution of a reductive naturalistic re-definition of what is good (e.g., as any norm that promotes the survival of the group) for the non-natural properties (e.g., objective goodness) characteristic of everyday moral beliefs. It is to interpret everyday moral realism as unreal or at the very least as intellectually absurd. It is basically to advance what Stratton-Lake calls an “error theory” about values and everyday moral judgments, based on a metaphysical presumption that there are no objective value properties in the universe aside from fetishistic human declarations of value; and that, therefore, none of our everyday moral judgments have truth-value. It is to presume the universe is devoid of objective values despite the fact that almost all human beings think that when they make moral judgments they are saying something that is true about the objective world; for example, when they assert that it is good to treat like cases alike and different cases differently.

Everyday human moral judgments are essentially meaningful and interpretable as moral judgments per se (rather than as, for example, aesthetic judgments or as expressions of feelings) precisely because they are about a supposed objective and non-natural order of goodness. The analytic generalization can be put this way: A semantic analysis of everyday moral judgments on a worldwide scale suggests that when a Hindu Brahman says “It is wrong for a widow to eat meat and fish” or an American feminist says “It is wrong to deny a woman the right to vote” they are not simply or only reporting about the state of their personal feelings or the collective opinion of members of their group or a norm that works to promote genetic fitness. Those who subscribe to an error theory about everyday moral judgments—for example, sociopaths and emotivists in philosophy and psychology—view those everyday moral judgments as a kind of sham. The sociopaths apparently lack any dualistic ontological intuition that could make room for the sense that there exists an objective order of goodness. Most emotivists in philosophy and psychology undoubtedly do have that quite fashionable (because nearly universal) dualistic intuition, but for theoretical and metaphysical reasons they reflectively subscribe to the belief there are no objective properties “out there” to be represented with such terms as *good* or *bad*, *divine* or *evil*. According to the writings of the emotivists, moral judgments are neither true nor false, but merely expressions of personal or collective choice. Judgments of good and bad, they aver, do no more than express non-moral properties, likes and dislikes, positive and negative feeling states, tastes, and aversions. Moral terms are merely labels for our feelings, they write, although, of course, the emotivists only argue that way when they are wearing their academic hats, because, for the most part, they are not sociopaths. In everyday life they do not act as if they believed that consensus makes logical deductions true, that might makes right, and that non-natural properties (such as goodness or mathematical and logical truths) do not exist except for our saying they do.

In other words the particular type of vertical integration in which human level realities “emerge” by being recast or re-defined in naturalistic terms implies (here again quoting Stratton-Lake) that the kinds of moral disagreements I study in my research (an example of which I will discuss in a moment) “are like disagreements about what color something is in an

objectively colorless world.”¹⁴ Rendered and interpreted within the framework developed by academic emotivists, moral arguments both within and across societies must be viewed as cognitively empty or intellectually absurd, and analyzed exclusively in emotive terms (for example, as rhetorical political ploys in the contest for power or domination), for if there is no objective moral universe, no transcendental realm of goodness out there, no basis in reason for one’s judgments of right and wrong, what precisely is there to reasonably argue about?

HAS BABEL REALLY BEEN UNDONE? OBSERVING PHYSICAL AND UNPHYSICAL SCIENTISTS DISCUSSING BRAINS AND MINDS

Although I confess that I have a place in my heart (and in my mind) for that (perhaps not so) outdated dualistic ontology, it is good and right to be curious about the current intellectual scene in the biological and cognitive sciences, which I have observed to be far less unified than many consiliators suppose. To cite one example, for the past three decades those who have perhaps done the most creative work interpreting the thoughts, feelings, desires, and values of non-human animals are not humanists (philosophers, poets, and creative writers) but rather a group of cognitive ethologists (naturalists, biologists, zoologists, and psychologists) who are convinced that monkeys, apes and other non-human animals are persons too (very much like human beings) and that Renee Descartes was quite wrong when he said that only human beings have a conscience, a mental life, and a soul. They have embraced the languages of consciousness and of the mind rather than the language of a physical system for understanding the behavior of non-human (but, in terms of the humanistic languages of consciousness, person-like) animals. Yet it is quite ironic that the academic field of cognitive ethology has become quite popular in the cognitive and biological sciences at precisely the moment when other cognitive and biological scientists (especially those working on the topics of artificial intelligence and neural networks) have become convinced that our own all-too-human minds can be simulated by a machine and fully understood in the languages of the physical sciences and that, if we could actually experience the way our own brain functions, we wouldn’t find a person, a soul, a self, ideas about goodness, or a free will there at all.

In any case one should be curious about recent developments in the cognitive and biological sciences, whether they are consilient or not. So, while residing in Germany a decade or so ago, I attended a major interdisciplinary conference held in Bremen on the subject of “Voluntary Action.” It was an illuminating experience that typifies for me the way vertical integration actually works (or more precisely does not work) in practice. The conference featured philosophers, cognitive neuroscientists, psychologists, anthropologists, and legal scholars. All were there ostensibly to explain the apparent fact (or is it just an illusory phenomenal experience? That was the question!) of “voluntary action.”¹⁵

14. Stratton-Lake, *The Right and the Good*, see footnote 12.

15. The conference proceedings were published as a book edited by Sabine Massen, Wolfgang Prinz, and Gerhard Roth (Eds.) and published under the title *Voluntary Action: An Issue at the Interface of Nature and Culture* (Oxford: Oxford University Press, 2003). My observations on the conference were published there as well.

"Voluntary action" is a really nice topic for an interdisciplinary meeting aimed at integrating the sciences and the humanities. As the conference organizers (Wolfgang Prinz, Gerhart Roth, and Sabine Maasen) brilliantly pointed out in their invitation, voluntary action

poses a severe challenge to scientific attempts to form a unitary picture of the working of the human mind and its relation to the working of the body. This is because the notion of mental causation, inherent in the received standard view of voluntary action, is difficult to reconcile with both dualist and monist approaches to the mental and the physical. For dualist accounts, it has to be explained what a causal interaction between mind and matter means and how it is possible at all. Conversely, for monist approaches the question of mental causation does not arise and therefore appears to denote a cognitive illusion [they might have said an "ontological fetish"] at best. Dualist and monist accounts can be found in all the disciplines... [cognitive psychology, neuropsychology, philosophy, ethnology], albeit in different phrasings and/or theoretical frameworks. Moreover, in virtually all disciplines this seemingly insurmountable opposition is [a] subject of ongoing debate.¹⁶

So "voluntary action" is a challenge for both mind/body monists and mind/body pluralists.¹⁷ At such conferences, the monists always seem to turn up as materialists. Apparently the monistic idealists are either hard to find or are not invited. The monistic idealists are those who argue that the real world does not consist of physical particles in fields of force but rather consists entirely of mental states and that there is no reality aside from human consciousness. That monistic idealist stance is just as counterintuitive to common-sense dualism as the monistic materialist opposite, but why do the idealists hold such a view? I think a typical idealist might say that it is because all sensory or perceptual experiences and all representations of reality (including representations picturing reality as made up exclusively of physical particles in fields of force) are themselves mental states or forms of consciousness. There is no way to transcend your own consciousness they might say, with solipsistic smiles on their faces.

Idealist aside, monism means materialism at these conferences, and if you are a mind/body monist of the materialist variety, then the voluntariness of "voluntary action" must be an illusion—another one of those ontological fetishes. That, of course, is the spectacular and breathtaking (or should we say dis-spiriting) counterintuitive implication of mind/body monism of the materialist variety, namely, the renunciation of all common-

16. It is noteworthy that the organizers of the conference do not suggest that dualism is an outmoded or fully discredited ontology and they themselves made note of its enduring presence in several disciplines.

17. Of which mind/body dualism is just one variety; the philosopher Karl Popper for example, argues that the universe encompasses not just two fundamental ontological worlds—the mental and the physical—but three—mathematical and logical truths, for example, would reside in that third world because they are neither physical things nor mental things. See for example, K.R. Popper, and J. C. Eccles, *The Self and Its Brain: An Argument for Interactionism* (Berlin: Springer Verlag, 1977), especially pages 36–50.

sense dualism and the claim (*involuntarily* arrived at and offered, I suppose robotically, at least according to mind/body monists who are materialists) that mental states (including ones own truth claims about mental states) are epiphenomenal and have nothing to do with the chain of objective events that is the real cause of behavior.

You raise your hand in a classroom in a situation where you thought that your intention to signal the teacher was the reason that you deliberately, willfully, or voluntarily raised your hand. In a common-sense sort of way you thought that symbolically communicating your intention to answer her question was what your hand-raising action was all about. "Not so!" says the mind/body monist of the materialist variety. Your hand raising was the end product of material determinants at the neural level, where a human will (and indeed even a human self) cannot be observed, and where ideas qua ideas do not exist and, hence, can play no causal role in the movement of your hand. Given our contemporary received understanding of the nature of the material world that is how mind/body monists think they must talk about so-called voluntary action. They talk of it as an epiphenomenon, an ontological fetish in the extreme.

This leaves the mind/body monists (it's all body, no mind; mind is brain) with a whole lot of explaining to do. Why should such a complex epiphenomenal system (amounting to all of human consciousness and its products) exist at all? How could it evolve if it plays no causal role in behavior? Are the humanistic ideas of agency, virtue, value, and human responsibility then incompatible with the teachings of the physical and biological sciences? Should the common-sense or folk psychology of everyday life be viewed as little more than error, ignorance, and a superstitious faith in the causal powers of an ontological fetish, or, at most, as a functional illusion that carries benefits for the survival of the species or the group, as long as one does not abandon the illusion?

Mind/body dualists fare no better when it comes to making sense of voluntary action. As an aside, I would point out that almost all cognitive-neuroscience research programs become tacitly dualist as soon as they treat something mental as an independent variable and something neurological as a dependent variable, or vice versa. In other words, just to carry forward their research agenda, they implicitly, usually un-self-consciously, distinguish thoughts (or ideas) from things (neurons, hormones, blood flows) and differentiate the unphysical things they are going to study (typically thoughts and feelings expressed and interpreted through language or other symbolic forms) from the physical things they are going to study (inferred events in the brain) using ontologically distinct types of criteria.

In any case, if you are a reflective mind/body dualist, you must explain how something that is immaterial (e.g., the mental state associated with choice, planning, free will, and intentionality) can influence or have an effect on something that is physical (the movement of one's hand). So there is a real and deep problem here with our current understanding of voluntary action, and, at Bremen, an interdisciplinary conference was organized to make some progress on resolving it, in the light of recent research in cognitive neuroscience, psychology, and philosophy, with some assistance from the anthropologists and lawyers. Here is the way unification and vertical integration operated in that context.

The philosophers were really good at defining the mind/body problem. Each philosopher was terrific at arguing in favor of just one of the several incompatible solutions (dualistic mind-body interactionism, psychophysical parallelism, eliminative materi-

alism, etc.) that have been contenders, while advancing compelling criticisms against all other solutions. Not much convergence took place among the philosophers, but at least they knew what the mind-body problem was and they tried to address it.

The neuroscientists, on the other hand, came armed with lots of colorful slides, showing this or that brain part lighting up when this or that kind of action took place or sentence got spoken. They named lots of brain parts and they spoke with great confidence and with a sense of pride and excitement about the technological revolution that had taken place on their watch, which had finally made it possible, or so they thought, to *empirically solve* the mind/body problem. After about ten slides, one began to realize that they seemed to think that, because Descartes had committed some grave error, he would be surprised if he were alive today to find out that when thinking occurs something happens simultaneously somewhere in the nervous system. After about 20 slides, one began to realize that they did not really know what the mind/body problem was in the first place and had almost no sense of its intellectual history or even of the history of the brain sciences. However, they had an imagined solution to the problem, which seemed to excite them a great deal. Upon examination this "solution" was simply a form of question-begging in which the very real puzzle of how a non-material thing and a material thing can causally interact at all is "solved" by simply substituting a very thin temporal co-occurrence or correlational notion of causation for the deeper sense of objective causation that makes the mind-body problem a problem in the first place.

If one steps back into the nineteenth century for a moment and reads discussions of this topic, it becomes readily apparent how little progress has been made in solving the mind/body problem and how misguided are the bold claims that ontological dualism has been empirically laid to rest. Consider for example the following remarks made in 1868 by the physicist John Tyndall in his presidential address to the Physical Section at the thirty-eighth meeting of the British Association for the Advancement of Science (and quoted by A.R. Wallace in his essay "The Limits of Natural Selection as Applied to Man"):

The passage from the physics of the brain to the corresponding facts of consciousness is unthinkable. *Granted that a definite thought, and a definite molecular action in the brain occur simultaneously*, we do not possess the intellectual organ, nor apparently any rudiment of the organ, which would enable us to pass by a process of reasoning from the one phenomenon to the other. *They appear together but we do not know why*. Were our minds and senses so expanded, strengthened and illuminated as to enable us to see and feel the very molecules of the brain, were we capable of following all their motions, all their groupings, all their electric discharges, if such there be, and were we intimately acquainted with the corresponding states of thought and feeling, we should be as far as ever from the solution of the problem. How are these physical processes connected with the facts of consciousness? *The chasm between the two classes of phenomena would still remain intellectually impassable*. [my emphases]

In other words, the neuroscientists at the conference in the year 2000 had solved the mind/body problem by simply begging Descartes' question (of which Professor Tyndall seems quite informed in 1868) because for them mind/body causation

amounts to nothing more than the observation that the brain lights up here and there when a person does this or that—an observation that John Tyndall in his own way took as a matter of fact over 150 years ago while also recognizing that such matters of fact do not solve, let alone even address, the issues raised by Descartes and the mind-body problem.¹⁸

This, of course, is not quite the issue the great philosopher had in his mind, and it is hardly a *theoretical* advance over Descartes or Tyndall; it does not solve the mind/body problem, it simply evades it. But they kept going, slide after slide supposedly demonstrating that the mind/body problem had been empirically solved.

Then there were the psychologists and the anthropologists. They generally presupposed or just took for granted the ontological reality and objective causal powers of mental states and their ideational content (in other words they had not expunged common-sense folk psychology and ontological dualism from their scientific work), and they described the operation of that folk psychology in some detail. One psychologist did present reaction-time evidence, all of it equivocal, trying to prove that mental states are unreal (merely ontological fetishes) and have no causal powers. In the end, the mind/body problem remained unsolved, when acknowledged, or it remained untouched, but it was innocently thought to have been solved by the new technologies for mapping the brain. In the end, the everyday experience and/or reality of voluntary action remained as mysterious and fascinating as ever. I was led by this conference experience to draw the following tentative conclusion.

If one believes, as do all normal human beings, that mental causation is really real, not an ontological fetish, then it would seem to follow that either (1) our current scientific account of the nature of the material world (including the human brain) is incomplete, precisely because we don't know how to explain mental causation within the current terms of our physical and biological sciences; or (2) there is more to reality than just the physical world: for example, Plato's "states of the soul," the realm of mathematical and logical truths, and of values, concepts and ideas—in other words, something like Karl Popper's three-world pluralistic ontology of the real.

Option (1) amounts to a denial of any fundamental division between the physical and the mental (or between the mental and an independent ontological domain of concepts and ideas, including logical and mathematical truths). Those who opt for option (1) will press on trying to revise our current understanding of the physical world so that one day we can move seamlessly within a language for describing matter directly to human consciousness and offer a plausible causal account of how all the things that matter to people at a human level of reality are merely emergent products of physical things at some

18. That very thin notion of causation relied on by the neuroscientists is reminiscent of David Hume's radical empiricist claim that the very concept of real causation is itself an ontological fetish or projection of the mind beyond the evidence of the senses, since the senses provide us with nothing more than the perception of events coinciding in time and space. The ontological chasm mentioned by Tyndall is thereby bridged by simply ignoring it. Repeating the same kind of facts about temporal co-occurrence that Tyndall reported in the nineteenth century and that Descartes was aware of as well does not advance the discussion and surely does not refute ontological dualism, as Tyndall clearly notes.

really real (not ontologically fetishized) level “down below” (the vertical metaphor is irresistible).

Those who go for option (1) will surely reject the metaphysical claim that the intellectual objects of our mental states (including mathematical and logical truths) exist in some observer independent realm or “Platonic heaven.” They will be inclined to argue that logic and mathematics (and morality and religion) are about nothing other than how people think (rather than about true realities *about which* human beings find themselves *capable* of thinking) and that logic and mathematics (and morality and religion) can be subsumed within the realm of the mental, which will one day be shown to be contained within the realm of the physical.

My own working view is a bit different, for it inclines to option (2), that there is something more, let’s call them the unphysical realities, to which one should show respect because they are worthy of it. Here I will try to be self-conscious about some of the ontological assumptions that are philosophical foundations for the type of humanistic anthropology I practice, which also goes by the name romantic pluralism.¹⁹ Basically the romantic pluralist tradition in cultural anthropology seeks to affirm (to the extent such affirmation is reasonably possible) what the philosopher John Gray (writing about Isaiah Berlin) describes as “the reality, validity and human intelligibility of values and forms of life very different from our own.”²⁰ Here is a brief example, with special attention to the practice of caring for the dead, a universal practice, which perhaps as much as any other presupposes a dualistic ontology (the distinction between the self or soul and the body) and gives exquisite expression to the view that there is something more to human nature than just physical reality and it is deserving of our respect.

I am going to briefly describe an encounter of the type I have frequently had in my research in comparative ethics and on moral reasoning in the Hindu temple town of Bhubaneswar in Orissa, India. Warning: the type of account I am about to offer is likely to strike those who choose option (1) and seek an emergent and fully naturalistic account of human level realities as very soft on superstition (ontological fetishism) and all-too-tolerant of alternative pictures of what is real.

“The day after his father’s death the first-born son had a haircut and ate chicken.” To members of my own interpretive community²¹ (and probably yours, too) the conduct described in that sentence is not particularly noteworthy and is certainly not immoral. Yet, in the judgment of men and women in the interpretive community surrounding the Hindu temple where I do research in India, a first-born son having a haircut and eating chicken the day after his father’s death is categorized as a “great sin” (“mahapapa”). Being a great sin, the conduct is not only scandalous and a departure from local social norms,

19. See especially the essay titled “John Searle on a Witch Hunt,” *Anthropological Theory* 6 (2006): 89–111, from which this discussion is drawn.

20. John Gray, *Isaiah Berlin* (Princeton: Princeton University Press, 1996), 3.

21. By an interpretive community I mean roughly a group of people who share a set of understandings about what is true, good, beautiful, and efficient and participate in a way of life they consider normal, reasonable (in the sense of justified by reference to good reasons) and ethical precisely because it makes manifest, reveals or expresses those understandings. It is what some anthropologists call a “culture.”

but it is also perceived as a profound and consequential violation of the natural and objective moral ordering of things (of which the human social order, when properly functioning, is but a part). It is anticipated that the conduct will be profoundly consequential and that bad things will happen to anyone who commits a great sin. The anticipated consequences have nothing to do with secular criminal sanctions (there are none for this type of case) and go well beyond the effects on one’s reputation in the local community (although reputation effects can be massive, including, shunning from all forms of exchange, such as marriage arrangements, and, at least in the past, the risk of becoming an outcaste). That particular “transgression”—getting a haircut and eating chicken the day after your father’s death—was the single most serious form of misconduct of any investigated in my research, and it was judged to be an even more egregious moral error than the refusal of doctors at a hospital to treat a poor man who was seriously hurt in an accident, but was too poor to pay.

Given what I have just reported, one can easily imagine a typical morally sensitive member of my own interpretive community asking: “What type of moral cretins are those Oriya Hindus?” He or she would be thinking, “Why can’t those Oriya Hindus see that there is absolutely nothing wrong with having a haircut and eating chicken the day after your father dies?” (For the sake of this argument I will assume that this imagined member of my own interpretive community is neither a sociopath nor a philosophical or psychological emotivist who believes anything goes and is prepared to be totally non-judgmental about everyday moral judgments on the grounds that all moral judgments, including ones own, carry no truth value and are nothing more than fetishized personal or collective expressions of taste, and thus hardly worth arguing about).

In what follows I will try, however briefly and inadequately, to step inside this Oriya Hindu form of life with the humanistic aim of giving an intelligible account of its reality and validly—thereby trying to achieve, however inadequately, a form of understanding of the “native point of view” that is neither ethnocentric nor reductive.

Here is my non-reductive (humanistic) explanation for why the conduct in question is a moral fact of a very different sort for Oriya Hindus than for most American observers.

Oriya Hindus, or at least most of those who live in the interpretive community I studied, believe that every person has an immortal reincarnating soul. They believe that when a person dies his or her soul wants to go on its transmigratory journey but is initially trapped in the corpse and held back by the “death pollution” that emanates from the dead body and from its subsequently processed physical remains. As an act of beneficence, care, and reciprocity (all of which are assumed to be objective moral goods) relatives of the deceased (and especially the first-born son, for whom this is a major institutionalized moral obligation in life) undertake the project of assisting the soul of the dead person and enabling it to get free of its ties to the physical form it once occupied. Thus, some of the kinsmen of the dead person turn their own living bodies into what I shall label “death pollution collection sites,” and essentially suck up the death pollution associated with the corpse (and its cremation and disposal) into themselves. They believe that the most effective way to do this is by keeping all other types of pollutions away from their living bodies, thus providing maximal space for the personal intake of the death pollution. Among the most commonplace competing types of pollutions that might interfere with their project are sexual activities and the ingestion of “hot foods” (for example, fish and

meat—the local classification of all ingested substances on a hot versus cool dimension would need to be spelled out here, but, the relevant social fact is that chicken is a “hot food”). Thus, for 12 days they stay at home fasting (maintaining a very restricted diet of “cool” foods) and abstinent. On the twelfth day they believe the soul of the deceased has been released from its bond to its bygone material form and is free to go on its journey to the world of transmigrating spirits. On that day they cleanse themselves of the death pollution, which they have absorbed into their own bodies and which has accumulated there. They believe that the pollution migrates to the extremities of the body, and is especially concentrated in their hair and under their fingernails. On that twelfth day of abstinence and fasting, the family barber cuts off nearly all their hair and the barber’s wife cuts their fingernails. Then they take a ceremonial bath and go back to the workaday world, having fulfilled their moral obligation to the soul of the deceased.

“The day after his father’s death the first-born son had a haircut and ate chicken”! To any Oriya Hindu in the temple town that conduct signals a willful and horrifying renunciation of the entire project of assisting the soul of your father and places the father’s spiritual transmigration in deep jeopardy. No wonder they are morally distraught at the very idea of such behavior, and judge it more severely than not treating the accident victim at the hospital, who is too poor to pay. Wouldn’t you judge things that way too if that was your picture of the natural and moral order of things (including the world of moral values and of social relationships, viewed as part of the natural moral order of things)?

The question immediately arises, of course, whether (within the bounds of what it means for human beings to be rational and moral) a group of human beings might reasonably feel bound by that picture of the natural and moral order of things, to which I would like to suggest the right answer is yes. Here I will simply conclude this illustration of forms of life different from our own by asking, which do you think is the worse transgression: (1) A doctor not treating an accident victim because he is too poor to pay or (2) (I recognize that this example is only a weak analogue of the Oriya Hindu case but I think it makes the point) a son tossing his father’s dead body in a trash compacter and holding no funeral service or memorial at all? Would you judge someone a moral cretin or even to be lacking in moral maturity if he or she reacted to the second hypothetical as the more horrifying transgression? Personally I think it is the more horrifying of those two very serious moral transgressions.

I would also hazard the view that the meaning of the idea of a great sin or moral error is not adequately translated when it is theorized and redefined in reductive naturalistic terms by reference to social sanctions, communal consensus or pressures toward conformity. If cultural anthropologists have learned anything from the legacy of Emile Durkheim it is that, from a “native point of view” the social order is thought to be part of the natural moral order of things; and thus when someone says “you have committed a moral error” or “you have sinned” they do not simply mean that some collection of individuals in their interpretive community has decided to define some behavior as wrong. The natural moral order of things is something you discover (or have revealed to you), not something you invent, or at least that is the near universal consensus among the natives of the world.

I can only guess what vertical integrationists and those who define morality and religion as ontological fetishes might say about those death pollution practices of Oriya Hindus. Perhaps something like this: When you are dead you are dead! Souls don’t reincarnate! In

fact people don’t have souls at all. I suppose they do have a “self,” but, take my word for it, your “transcendental ego” does not go anywhere when you die and my colleagues in the cognitive neurosciences have not only empirically proved that ontological dualism is untenable but they also promise me that one day very soon they will figure out the answer to the problem that Descartes and Tyndall were unable to solve, precisely how that “ghost in the machine” got into our physical body in the first place. Moreover, the only kind of pollution that exists in the world is not about spiritual purity or the sanctity of one’s soul but consists of dirty and nasty physical particles in fields of force and no one in their right mind would want to suck them into their body. Of course, there are many psychological benefits (including a defense against grief, loss, and the fear of death) to imagining that bodies are animated by immortal souls that are thought to already be old souls when they enter our contemporary physical world and survive the demise of their physical form. Wouldn’t it be nice and comforting if that were true, but scientific observation has taught us it is not true. And yes, perhaps there are social benefits to endorsing the virtues that bind the generations by enacting the moral drama of turning ones own body into a death pollution collection site. But remember what Nietzsche once said: “Asia is a dreamy place where they do not know how to distinguish between truth and poetry.” No one’s soul is in jeopardy just because someone gets a haircut and eats chicken! And, by the way, there is no such thing as a sin. If such beliefs are entrenched among human beings it is only because believing such things has worked in a utilitarian way to promote the genetic fitness of our species (or else is highly correlated with something else that promotes our biological survival).

It seems to me there is some kind of chasm there between two very different and not so easily reconciled ways of approaching one’s subject matter. Evans-Pritchard, the famous British anthropologist who wrote a seminal ethnographic monograph about what it is like to hunt for a witch in Central Africa once offered the following sage advice to aspiring ethnographers of ways of life different from one’s own: “You cannot have a remunerative, even intelligent, conversation with people about something they take as self-evident if you give them the impression you regard their belief as an illusion.”²² It is a good methodological starting point for the type of humanistic anthropology I practice, but it also hints at why the integration of the sciences and the humanities is probably not in the cards and why there are divides in the first place. Reality testing is a metaphysical act, and the metaphysical assumptions characteristic of human level realities and of the humanists who study those realities do not necessarily converge with the metaphysical program of those calling for consilience and a unity of all knowledge.

Hence it seems to me that, if you are a humanist, you ought to opt for option (2) the idea that (ontologically speaking) there is more to reality than the material world, and that those unphysical realities are best comprehended as, in some sense, objective realities worthy of respect and not as “ontological fetishes.” That is one of the reasons I find Karl Popper’s view congenial when it comes to questions of ontology. Whatever one might think of the practice of humanistic anthropology (or of the very idea of the unphysical sciences), if I were able to spell out the philosophy of the real that informs my own work, I suspect I would end up with some kind of variation on Sir Karl Popper’s philosophy of

22. E.E. Evans-Pritchard, *Witchcraft, Oracles and Magic Among the Azande* (Oxford: Clarendon Press, 1937). In a postscript “Notes on Method.”

the three real worlds: crudely stated, the world of material things, the world of mental states and, finally, quite crucially, the world of meanings, ideas, or concepts—the latter conjectured to be an observer independent realm of intellectual/unphysical objects that human beings are able to discover and grasp by means of their mental powers. In his philosophy of the real, Popper conjectures that besides physical objects and states (“World 1”) there are mental states (“World 2”) “and that these states are real since they interact with our bodies” (here he is prepared to just assume the reality of mental causation, which always requires a good deal of question begging). Popper also conjectures that the content of our mental states (the ideas or concepts that we think with or about) form part of what he calls World 3. The intellectual objects in World 3 are not themselves mental states, yet are real, in part, because they seem to have something like an observer independent status as objects of discovery (for example, he would argue mathematical truths are neither physical nor mental but they are real), and also, in part, because the ideas or concepts that we are able to grasp by means of our mental powers can ultimately have an effect on our bodies and on the creation of material artifacts.²³

The details of Popper’s three-world philosophy of the real need not concern us here, and there is much in his formulation that I think is problematic and debatable. Nevertheless his three-world metaphysics is a philosophical conjecture about what is real that bears a striking resemblance to the common sense of the diverse peoples of the world studied by anthropologists, which is not a bad starting point when one is trying to develop some analytic tools for making sense of folk mentalities and forms of life different from one’s own.

I realize, of course, that by selecting option (2)—there is more reality than just the physical world—one ends up just reaffirming the division between physical matter and other types of real things (“states of the soul,” the “soul” itself, transcendent concepts or ideas) without really explaining that division. Nevertheless, when it comes to the mind/body problem, the state of the art has not fundamentally changed since Descartes and Tyndall, and the choices remain the same even in our contemporary decade of the brain: One either denies the ontological difference between mind and body without accounting for consciousness (that’s option 1) or one affirms the difference between mind and body without explaining how unphysical things can exist (that’s option 2). Despite technological developments in the neurosciences in recent years, I don’t think that the state of the art has changed very much since 1913 when Emile Durkheim presented his paper on “The Religious Problem and the Duality of Nature” to the Societe de Philosophie in Paris, summarizing his famous book *The Elementary Forms of the Religious Life*. As noted by Durkheim’s intellectual biographer Stephen Lukes, alluding to the apparent dualisms and unconciliatory oppositions that were up for discussion at Durkheim’s lecture (dualisms such the physical versus the mental, the body versus the soul, sense experience versus conceptual thought, the profane versus the sacred): “Philosophers had no genuine solution: empiricists, materialists and utilitarians, on the one hand, and absolute idealists on the other, simply denied these antinomies without accounting for them; ontological dualists simply reaffirmed them without explaining them.”²⁴

23. Popper and Eccles, op cit, see footnote 16.

24. Steven Lukes, *Emile Durkheim, His Life and Work: A Historical and Critical Study*, (New York, Penguin Books, 1973), page 507.

Skepticism has its limits and nothing I have said or implied in this essay should be construed as a critique of innovative interdisciplinary cooperation or of attempts to ask questions about the functional or dysfunctional consequences of human practices and beliefs for either social reproduction or genetic fitness. Rather, my aim has been to examine the announced program of vertically integrating the humanities with the cognitive and biological sciences and the reductive notion that one can fully explain human level realities relying on findings from those sciences. Let me conclude with a small yet provocative antireductive example of what happens when World 3 (the world of meanings available to mentally endowed human beings) enters our nervous system. The example comes from Benjamin Lee Whorf and can be found in his writings on *Language, Thought and Reality*.²⁵ Whorf is famous for his work on linguistic relativity, but he was fully aware of the existence of some universal human species typifying affective or synesthetic responses to stimuli of various kinds. He notes that the semantically meaningless sound pattern “queep” elicits a universal set of affective or feeling-tone associations when it interacts with the human nervous system. Whether you are in the highlands of New Guinea or in Manhattan, whether you speak English, Guugu Yimidhirr, or Russian, “queep,” the nonsense syllable, is judged to be “fast” (rather than “slow”), “sharp” (rather than “dull”), “light” (rather than “dark”), “narrow” (rather than “wide”). Our affective response to “queep” is automatic and may well be preprogrammed, a feature of our common biology.

But notice what happens when the world of language and culture-specific semantic meanings (a World 3 unphysical reality) enters the picture. Whorf asks us to consider the sound pattern “deep.” As a purely material thing (as a physical pattern of sound) “deep” is very similar to “queep.” For speakers of languages in which “deep” is a nonsense syllable (that is most languages of the world) the sound pattern “deep” elicits exactly the same set of affective or feeling-tone associations (“fast,” “sharp,” “light,” and “narrow”) as does “queep.” However, “deep” is not just a physical entity (or pure sound) for English speakers. It is a word in our language. It has semantic meaning. That meaning totally overrides its impact as pure physical sound (the sound merely becomes the vehicle of the meaning) and completely reverses our nervous-system response. For speakers of English, and only for English speakers, “deep” is judged to be “slow,” “dull,” “dark,” and “wide.” That is one of the reasons that so many humanists are prepared to argue for the duality of human nature, of meaning and mind over and above mechanism and body, of the angel over and above the beast. It is what leads them to believe there is something more to our nature than just the material realities that meet the ear (or the eye) plus the nervous system that is more or less common to us all. The challenge for the humanities and for the humanistic social sciences has always been to get ideas and our capacity to be sensitive to what things mean into the picture without completely reducing the mental to the material or “mattering” to “matter.” Contemplating a human being as a hairless social biped with a big brain does not quite do the trick. It leaves too much out of its picture of the really real as it tries to descend the vertical hierarchy by interpreting the higher levels as ontological fetishes.

25. See B.L. Whorf, *Language, Thought and Reality* (Cambridge, Mass.: The M.I.T. Press, 1964), 257.