

EDWARD SLINGERLAND



# What Science Offers the Humanities

INTEGRATING BODY AND CULTURE

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## WHAT SCIENCE OFFERS THE HUMANITIES

*What Science Offers the Humanities* examines some of the deep problems facing current approaches to the study of culture. It focuses especially on the excesses of postmodernism but also acknowledges serious problems with postmodernism's harshest critics. In short, Edward Slingerland argues that, in order for the humanities to progress, its scholars need to take seriously contributions from the natural sciences – in particular research on human cognition – which demonstrate that any separation of the mind and body is entirely untenable. The author provides suggestions for how humanists might begin to utilize these scientific discoveries without conceding that science has the last word on morality, religion, art, and literature. Calling into question such deeply entrenched dogmas as the “blank slate” theory of nature, strong social constructivism, and the ideal of disembodied reason, *What Science Offers the Humanities* replaces the humanities-sciences divide with a more integrated approach to the study of culture.

Edward Slingerland taught in the School of Religion and the Department of East Asian Languages and Cultures at the University of Southern California, where he was recipient of the 2002 General Education Teaching Award. He is currently an associate professor of Asian Studies and a Canada Research Chair in Chinese Thought and Embodied Cognition at the University of British Columbia. His previous books include *The Analects of Confucius* and *Effortless Action: Wu-wei as Conceptual Metaphor and Spiritual Ideal in Early China*, which won the American Academy of Religion's 2003 Best First Book in the History of Religions Award.



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*Integrating Body and Culture*

EDWARD SLINGERLAND

University of British Columbia



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## Preface

The intellectual autobiographies of academic researchers are normally expected to remain invisible as they go about producing their work, which in turn is intended to stand alone and be understood and judged on its own merits. One of the many contributions to intellectual life made by the loose collection of movements I am going to be calling “postmodernism” in the pages that follow is the claim that the author’s biography is not intellectually irrelevant. Although this – like many other postmodernist claims – has too often been taken to absurd extremes, explaining how I came to this project will, I think, help to clarify its motivation and the thrust of its argument. This will then also, I hope, make it clearer why someone might want to read this book.

When my colleagues and friends from graduate school see what I am reading these days, their reactions range from puzzled to horrified. When I mention the term “behavioral neuroscience” among a group of religious studies scholars or sinologists, most smile politely and begin slowly backing away, casting about for a safe exit route. As they slip away, I sometimes note wistful expressions of regret: they know that I had a perfectly respectable humanistic upbringing. What went wrong? I was first trained as a sinologist and specialist in early Chinese texts (both my B.A. and M.A. are in the classical Chinese language), and then my interest in comparative thought led me to a doctoral program in religious studies, where I received a firm grounding in my specialty of early Chinese thought, as well as in related areas of Western thought, such as German philosophical hermeneutics and the “virtue ethics” movement in philosophy. My dissertation was a fairly traditional work of intellectual history, from a more or less analytic philosophical angle.

Things began to go awry after graduate school, a few months into my first job, when a student recommended a book that had just come out, George Lakoff and Mark Johnson’s *Philosophy in the Flesh* (1999). It immediately became clear to me upon reading this work how conceptual metaphor theory could solve some deep theoretical problems that had been bothering me in my dissertation. Even more, Lakoff and Johnson’s work pointed to a way of approaching human thought and culture that seemed to me to avoid the pitfalls of both the traditional objectivism informing the work of my colleagues in philosophy and the postmodern relativism that I saw as paralyzing most other areas of the humanities. The central claim of Lakoff and Johnson’s book is that human cognition – the production,

communication, and processing of meaning – is not the product of an entirely free and autonomous rational faculty, as the Anglo-American analytic tradition would have it, but is rather heavily dependent on more fundamental, bodily based cognitive processes. These mappings take several forms, but the most dramatic is cross-domain projection, where part of the structure of a more concrete or clearly organized domain (the *source* domain, for instance *darkness*) is used to understand and talk about another, usually more abstract or less clearly structured, domain (the *target* domain, for instance *ignorance*). It is this sort of projective mapping that cognitive linguists refer to as “metaphor,” which – understood in this way – encompasses simile and analogy as well as metaphor in the more traditional sense. Conceptual metaphor, Lakoff and Johnson argue, serves as one of our primary tools for reasoning about ourselves and the world – especially about relatively abstract or unstructured domains such as the self, morality, or time. I found their theory to be an extremely powerful tool for approaching Warring States Chinese thought. The theoretical stance of “embodied realism” that Lakoff and Johnson presented also seemed to me to be an ideal path out of the mire of cultural relativism that I continue to see as impeding substantive work in comparative studies.

To invoke the common LIFE AS JOURNEY metaphor, this initial encounter with conceptual metaphor theory turned out to be not a detour, but rather the first step in an entirely new intellectual direction. I hosted a conference at the University of Southern California attended by both Lakoff and Johnson, and also got to know Mark Turner and Gilles Fauconnier, pioneers in the field of mental space theory and conceptual blending. Blending theory encompasses conceptual metaphor theory but goes beyond it to argue that *all* of human cognition – even literal and logical thought – involves the creation of mental spaces and mappings between them. As I explored more widely in the cognitive linguistics literature, I came to see that this work formed just one part of a rich and growing field focused on the imagistic basis of thought and the grounding of abstract human cognition in recurring features of perception and action. This led me to work explaining how these features of perception and action are in turn subserved by an integrated physical system, the body-brain, that evolved gradually from other life-forms. Hence a burgeoning interest in evolutionary psychology, behavioral neuroscience, nonhuman animal cognition, and various branches of psychology. The relatively new field of evolutionary psychology seeks to explain how the human brain and the workings of human cognition can be seen as a response to adaptive pressure in the human “ancestral environment,” while the study of nonhuman animal cognition helps to put the achievements of human cognition in their proper phylogenetic context. Behavioral neuroscience attempts to provide an account of, among other things, how the structure of the human brain is related to the workings of human cognition and human perception, how neurological events are related to overall behavior, and how analogue schematic structures such as conceptual metaphors might be neurologically instantiated. Cognitive and developmental psychology look for evidence

for the emergence of the sorts of mental “organs” or modules that an evolutionarily informed model of the human brain would expect to find – bolstering their universalist claims with cross-cultural studies of prelinguistic infants and children – and recent work in social psychology fundamentally calls into question folk models of human agency and the relationship of conscious processes to actual behavior.

My contact with scholars in these fields eventually led to my current position at the University of British Columbia, where I have been hired not only as a traditionally trained sinologist and scholar of early Chinese thought but also as part of an emerging interdisciplinary field of embodied approaches to the study of human culture. I now find myself surrounded by colleagues trained in social psychology, neuroimaging, cross-cultural psychology, developmental psychology, evolutionary psychology, nonhuman animal cognition, biological anthropology, postrationalist economics, and the neuroscience of perception – all eager to share their knowledge with, learn from, and engage in collaborative projects with scholars from more traditional humanistic disciplines.

This book essentially represents a field report to my fellow humanists concerning the long, strange intellectual journey into the cognitive and natural sciences that I have been on for the past five or six years. I believe that I have come back with something of interest: an outline of what a coherent and empirically responsible alternative to objectivist or postmodernist approaches to the study of culture might look like, and some strong feelings about how we humanists can benefit from establishing collaborative ties with our colleagues in the sciences. The central conviction behind this work is that it would behoove humanists to start paying a lot more attention to what is happening on the other side of campus. Almost any randomly selected issue of *Science* or *Nature* has at least one article that directly addresses some matter of central humanist concern, and journals from the more human-level disciplines, such as *Cognition* or *Behavioral and Brain Sciences*, are invariably rich minefields of relevant material that is, for the most part, entirely unexploited by scholars in the humanities. Cognitive scientists and neuroscientists, for instance, are making extraordinary discoveries concerning the relationship of human thought, language, and perception – a central and venerable issue in philosophy and cultural studies but hitherto explored by humanists primarily by means of armchair speculation. Similarly, recent work on the role of emotions, bodily biases, and “fast and frugal” heuristics in human reasoning processes bears intimately on lively debates in moral philosophy and calls into question rational-actor models that have traditionally dominated economics. Fields on the fringe of the humanities such as economics – more immediately and directly concerned with applications to the real world, and therefore where getting things wrong is more immediately apparent and consequential – have been relatively quick to respond to this sort of work, but little of it has penetrated to the core humanities disciplines.

If we humanists have much to learn from the natural sciences, the reverse is also true: humanists have a great deal to contribute to scientific research. As discoveries

in the biological and cognitive sciences have begun to blur traditional disciplinary boundaries, researchers in these fields have found their work bringing them into contact with the sort of high-level issues that traditionally have been the domain of the core humanities disciplines, and often their lack of formal training in these areas leaves them groping in the dark or attempting to reinvent the wheel. This is where humanist expertise can and should play a crucial role in guiding and interpreting the results of scientific exploration – something that can occur only when scholars on *both* sides of the humanities–natural science divide are willing to talk to one another. This book is designed to help my colleagues in the core humanities disciplines see where the points of contact between their own work and the research coming out of the cognitive and biological sciences may lie, as well as how an “embodied” view of the person fundamentally problematizes the dualistic model of the self that informs most of our work. It is becoming increasingly evident that the traditionally sharp divide between the humanities and natural sciences is no longer viable, and this requires that researchers on both sides of the former divide become radically more interdisciplinary. This book is intended as an argument for *why* an integrated approach to human culture is, in fact, necessary, as well as a hint of what such an approach might look like.



This project has consumed the last five years of my academic life, and over the course of those years I have been aided by countless individuals and organizations, so I apologize in advance for any omissions in these acknowledgments.

First I would like to thank my acquisitions editor at Cambridge University Press, Andy Beck. When I approached him years ago with the idea for this rather speculative project he was immediately supportive, and over its development Andy has provided a steady stream of sound editorial advice that has shaped the final product in many ways. I am very grateful to him for having faith in me and in this project.

I also owe a debt of gratitude to Peter Nosco, Darrin Lehman, and Nancy Gallini at the University of British Columbia, who were not at all deterred by this crazy project and made it possible for me to find an institutional home that genuinely values interdisciplinary work. “Interdisciplinarity” has become a fashionable buzzword in recent years, but UBC has turned out to be one of the few places I know of that is genuinely serious about humanities–natural science dialogue and eager to encourage it. In this regard, this project also owes a great deal to the Canada Research Chairs program. My CRC position has provided me not only with the time and resources to complete this manuscript but also with a higher, more broadly appealing research profile that has directly led to a variety of helpful connections and new research collaboration opportunities. This is particularly important for a sinologist, since Chinese studies – especially early Chinese studies – is too often viewed by outsiders as an overly specialized, hermetically sealed discipline.



In the early stages of my research at the University of Southern California I benefited from a Templeton/Metanexus grant for the study of science and religion awarded to USC, which provided me with a wonderful venue for interdisciplinary conversation and facilitated my contact with scholars such as Michael Ruse, Owen Flanagan, and Michael Arbib. A Pew Foundation grant for the study of religion and civic culture awarded to USC similarly gave me an opportunity to meet and to benefit from conversation with one of my intellectual heroes, Charles Taylor, whose work features so prominently in Chapter 6. Thanks also to my former chair at USC, Donald Miller, for having involved me in these grants.

Mohammad Reza Memar-Sadeghi very generously offered to read Chapters 1 and 5, and Brian Boyd heroically slogged through the entire manuscript and provided detailed and extremely helpful feedback. For a variety of reasons, I was unable to make all of the changes they recommended, and if my treatment of the philosophy of science material, in particular, is found by some to be lacking in sophistication or nuance it is entirely my own fault. Substantial and very helpful comments on the manuscript were also provided by Joel Sahleen, Jason Slone, Mark Collard, Joe Henrich, Tim Rohrer, Jon Gottschall, and the anonymous referees who reviewed this manuscript for Cambridge University Press. I have also benefited from feedback from Sharalyn Orbaugh, Jonathan Schooler, Owen Flanagan, Ara Norenzayan, Steve Heine, Mark Turner, Ray Corbey, Todd Handy, Randy Nesse, Coll Thrush, Simon Martin, Barbara Dancygier, Andrew Martindale, Jess Tracy, Liz Dunn, Emma Cohen, and David Anderson. Thanks also to Ian McEwan for a bit of music criticism that helped to smooth out a hastily conceived chapter conclusion.

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Most of all I would like to thank my wife, Stefania Burk. She not only has put up with me for the last several years as I feverishly worked on this project but also has been a constant source of conceptual critique, stylistic and editorial advice, and plain good sense. This book would have a very different shape had it not been subjected to the force of her sharp mind, intolerance for jargon, and infallible sense of what is important and what is not. I dedicate this book to her and to my daughter, Sofia Gianna, who was born just as this manuscript was taking its final shape, and who remains a constant source of joy, wonder, and profound sleep deprivation.



## **WHAT SCIENCE OFFERS THE HUMANITIES**



## Introduction

IT IS SOMETHING OF A COMMONPLACE THESE DAYS THAT THE HUMANITIES are facing a crisis, or at the very least find themselves having, in the words of Bruno Latour, “run out of steam” (2004). In the decades leading up to the end of the millennium, “Theory” triumphantly swept through the core humanities departments – not just literature departments but also anthropology, sociology, religious studies, art history, media and area studies, and large swaths of classics and history departments. It left in its wake a global suspicion of any sort of truth-claim, coupled with a fervent conviction that the distinguishing mark of “sophisticated” scholarship was an ability to engage with a prescribed pantheon of theorists. Now that the headiness of this intellectual revolution has worn off, an intellectual hang-over appears to have set in. The application of theory to its object of analysis, for instance, has grown stultifyingly routinized and mechanical, characterized by precisely the kind of rigidity and deference to authority from which Theory was to liberate us. It was quite exciting the first time someone took the tools of analysis that Derrida originally applied to Rousseau or Plato and aimed them at a piece of modern Chinese literature (I am old enough to remember that!). The expansion of deconstruction to encompass media images and packaging – the absorption of *everything* into the world of text – also felt new and deliciously revolutionary in its initial stages.

Decades down the line, though, it is perhaps not unreasonable to ask if the world really needs one more application of Derridean deconstruction to some as yet unexamined corner of popular culture or the traditional canon. More importantly, if we *do* need it, to what end? It is hard to sustain the intellectual momentum of a theoretical playfulness that denies the validity of theory, or an interest in opulent, impenetrable prose that denies the existence of anything beyond luxuriating in language for language’s sake. It also rather takes the wind out of one’s intellectual sails when, as Latour (2004) notes, one’s radically skeptical critique can be so easily coopted by one’s enemies – the “Right,” corporate culture, and other “bad guys” – for their own nefarious purposes, such as denying the reality of global warming or selling slave labor-produced sneakers to gullible teenagers. It is therefore not hard to see why intelligent undergraduates, often drawn to the study of literature or art or language by the love of the subject material itself, find themselves repelled by the militant theoretical indoctrination with which this material is served up,

or wondering what the point of it all might be. Moreover, told that they had better master Irigaray and Kristeva before they can go on to study early modern Chinese literature or Henry David Thoreau at a “serious” level, it is not surprising that accounting or biotechnology might start looking a bit more appealing to a bright and ambitious twenty-two-year-old. Enrollments in the humanities are down, funding levels from external agencies have fallen, and the work of humanists themselves has become increasingly insular and unrelated to normal canons of intelligibility.

The aging vanguard of the Theory revolution are not unaware of the problems currently facing the humanities,<sup>1</sup> but for all their apparent concern they seem perversely determined to block off the one promising route forward. For instance, Brian Boyd (2006) cites a piece by the well-known writer Louis Menand, who recently complained in one of the mouthpieces of the revolution, the Modern Language Association’s *Profession 2005*, that the field of literary studies has entered a moribund stage:

The profession is not reproducing itself so much as cloning itself. One sign that this is happening is that there appears to be little change in dissertation topics in the last ten years. Everyone seems to be writing the same dissertation, and with a tool kit that has not altered much since around 1990. (Menand 2005: 13)

Menand argues cogently that the orthodoxy of postmodernist and poststructuralist theory is intellectually suffocating literature departments across the world, and that what the field needs is some new young Turks unafraid to shake up the status quo and introduce new theoretical directions. What these innovations may look like he, as an old-timer, does not hazard to predict. Despite this apparent intellectual humility in the face of the coming generation, though, Boyd notes that there is at least one innovation with which Menand will explicitly have no truck: the attempt to establish “consilience” between science and the humanities – that is, to integrate science and the humanities into one single, vertical chain of explanation. “Consilience,” Menand declares with religious fervor, “is a bargain with the devil” (14). As Boyd observes, for all Menand claims to be looking for someone to tell him and his colleagues that they are wrong, he is “certain that there is at least one thing that just *cannot* be wrong: that the sciences, especially the life sciences, have no place in the study of the human world” (Boyd 2006: 19).

## TWO WORLDS: THE GHOST AND THE MACHINE

Menand’s attitude is typical of what I think of as the “High Humanist” stance, which holds that the humanities are a *sui generis* and autonomous field of inquiry,

<sup>1</sup> See especially the essays dedicated to the “future of criticism” published in *Critical Theory* 30.2 (Winter 2004).

approachable only by means of a special sensitivity produced by humanistic training itself. Whence this knee-jerk, visceral disdain for the very idea of consilience between science and the humanities? What is so special about the human world, the “cultural dimension” that is constitutive of our “species identity” (Menand 2005: 14–15)? To answer these questions it is necessary to clearly trace the culture-nature distinction back to its roots in a dualistic model of the human being.

The university today is, as we know, divided into two broad magisteria, the humanities and the natural sciences, usually located on opposite sides of campus, served by separate funding agencies, and characterized by radically different methodologies and background theoretical assumptions. Although rarely explicitly acknowledged in our secular age, the primary rationale behind this division is a rather old-fashioned and decidedly metaphysical belief: that there are two utterly different types of substances in the world, mind and matter, which operate according to distinct principles. The humanities study the products of the free and unconstrained spirit or mind – literature, religion, art, history – while the natural sciences concern themselves with the deterministic laws governing the inert kingdom of dumb objects. This relationship of metaphysics to institutional structure is expressed most honestly in German, where the sciences of mechanistic nature (*Naturwissenschaften*) are distinguished from the sciences of the elusive human *Geist* (*Geisteswissenschaften*) – *Geist* being a cognate of the English “ghost,” and alternately translatable as “ghost,” “mind,” or “spirit.” German also helpfully provides us with technical terms, always hovering somewhere in the background of contemporary humanistic debate, to distinguish clearly between the two types of knowing appropriate to each domain. The natural world is subject to *Erklären*, or “explanation,” which is necessarily reductive, explaining complex physical phenomena in terms of simpler ones. Products of the human mind, however, can be grasped only by means of the mysterious communication that occurs when one *Geist* opens itself up to the presence of another *Geist*. This process is known as *Verstehen*, or “understanding,” and it is seen as an *event*, requiring sensitivity, openness, and a kind of commitment on the part of one spirit to another. This is the fundamental intuition motivating the High Humanist conviction that only trained humanists can seriously engage in humanistic inquiry. It is also the framework behind the common charge that any attempt to explain a human-level phenomenon in terms of more basic principles is “reductionistic”: the understood spirit must be able to see itself reflected, in terms that it recognizes, in the product of the understanding spirit.

I will be arguing in what follows that mind-body dualism is a universal human intuition, at least as old as *Homo sapiens*, which has much to do with why it is so difficult to get beyond it. When the “dualist West” is contrasted with other, presumably more holistic, cultures, what is really being picked out is the singular intensity with which mind-body dualism has been articulated, the assiduousness

with which the boundary between the two has been policed,<sup>2</sup> and the rigidity with which these two different types of knowing about the world – humanistic *Verstehen* versus naturalistic *Erklären* – have been institutionalized in the modern Academy. In the university today, the two are required – at least by humanists – to keep strictly to their own tasks. In disciplines where the boundary between them is particularly problematic, such as anthropology, the field has simply split. Physical or biological anthropologists stick to explaining “bones and stones,” while cultural anthropologists explore the more esoteric realm of human social understanding. In a growing number of universities, this division of labor has actually led to separate departments; in others, the two types of anthropology tend to coexist in uneasy separation.

The degree to which the mind versus body – and therefore the understanding versus explanation – split has become entrenched in the modern university is reflected by the fact that, in the humanities, “reductionistic” has come to function as an immediately recognizable term of dismissive abuse: a claim that the understanding *Geist* has crossed the line and inappropriately slipped from *Verstehen* to *Erklären*, treating its subject as an object. People *do* seem fundamentally different to us than objects, which is why this understanding versus explanation distinction is able to gain a foothold in our minds. However, the conviction that the human can never be *explained* – that human-level phenomena can never be reduced to lower-level causal forces – takes this intuition a step further. The result is that the field of human inquiry has proudly wrapped itself in an impenetrable shell of *Verstehen* and violently resists any attempt by the natural sciences to breach this boundary.

#### BEYOND DUALISM: TAKING THE BODY SERIOUSLY

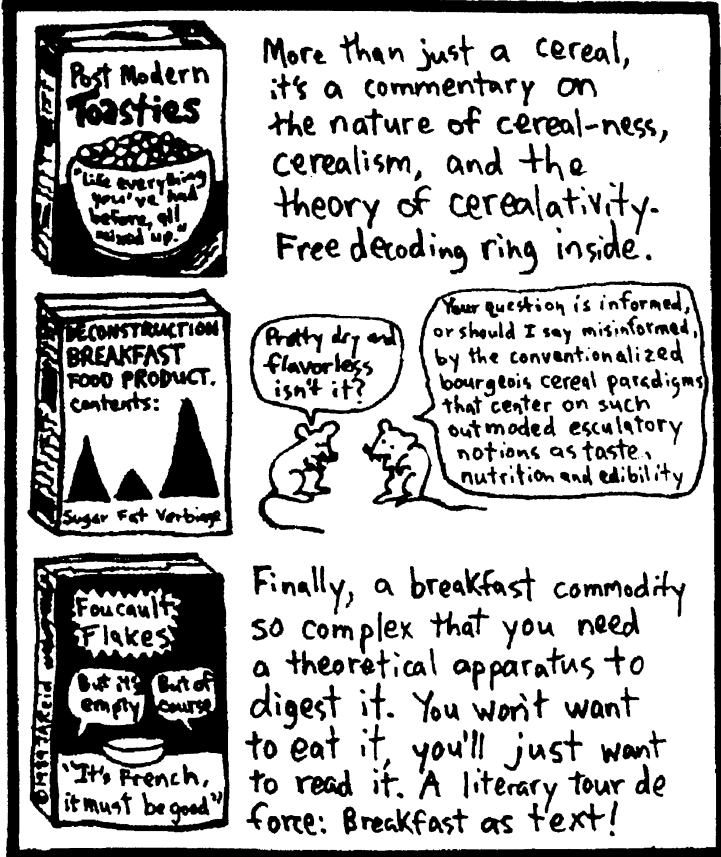
I will argue in the pages that follow that such rigid dualism is a serious mistake. By enthusiastically embracing the confines of an ontologically divided world – and vigorously opposing and often demonizing anyone who dares to question this divide – it seems to me that humanists have doomed themselves to endlessly and onanistically spinning stories inside of stories. One angle from which to get a sense of how deeply entrenched – but ultimately indefensible – metaphysical dualism hinders the humanities is to consider a couple of pointed satires that I have had taped to my office door for years. The first is a cartoon by Jeff Reid (Figure 1).

Like any good satire this cartoon makes an important conceptual point by placing an absurd idea in a context where its absurdity becomes more salient. No one believes that eating a “Deconstruction Breakfast Food Product” would be enjoyable

<sup>2</sup> See Raymond Corbey (2005) for an excellent account of how metaphysical dualism has informed Western treatments of the fraught boundary between humans and animals, particularly with regard to our nearest relatives, the great apes.



## Breakfast Theory: A MORNING METHODOLOGY



by Jeff Eckel

1. "Breakfast Theory." From *In These Times*, March 29, 1989 ([www.inthesetimes.com](http://www.inthesetimes.com)), used with permission.

or that an empty bowl of "Foucault Flakes" would satisfy a person's hunger. This is because we never doubt that there is a common structure to human physiology that plays a role in determining things like our preference for corn flakes over, say, shredded cardboard. If, however, there is a common structure to human physiology, there is no reason to think the same is not true for the mind, which means that the extreme relativism of postmodernist theory renders it ultimately as intellectually vacuous as an empty bowl of cereal.

A very similar point – this time taking aim at what we might call the "individualistic constructivism" of French existentialism – is made by a hilarious satire called "The Jean-Paul Sartre Cookbook" that has for years been spreading

through the Internet in various iterations, and that I cannot resist quoting at length:<sup>3</sup>

We have been lucky to discover several previously lost diaries of French philosopher Jean-Paul Sartre stuck in between the cushions of our office sofa. These diaries reveal a young Sartre obsessed not with the void, but with food. Apparently Sartre, before discovering philosophy, had hoped to write “a cookbook that will put to rest all notions of flavor forever.” The diaries are excerpted here for your perusal.

### **October 3**

Spoke with Camus today about my cookbook. Though he has never actually eaten, he gave me much encouragement. I rushed home immediately to begin work. How excited I am! I have begun my formula for a Denver omelet . . .

### **October 6**

I have realized that the traditional omelet form (eggs and cheese) is bourgeois. Today I tried making one out of cigarette, some coffee, and four tiny stones. I fed it to Malraux, who puked. I am encouraged, but my journey is still long.

### **October 10**

I find myself trying ever more radical interpretations of traditional dishes, in an effort to somehow express the void I feel so acutely. Today I tried this recipe:

#### **Tuna Casserole**

Ingredients: 1 large casserole dish

Place the casserole dish in a cold oven. Place a chair facing the oven and sit in it forever. Think about how hungry you are. When night falls, do not turn on the light.

While a void is expressed in this recipe, I am struck by its inapplicability to the bourgeois lifestyle. How can the eater recognize that the food denied him is a tuna casserole and not some other dish? I am becoming more and more frustrated . . .

### **November 15**

Today I made a Black Forest cake out of five pounds of cherries and a live beaver, challenging the very definition of the word cake. I was very pleased. Malraux said he admired it greatly, but could not stay for dessert.

In a certain sense, of course, these satires are cheap shots: neither postmodernism nor existentialism would deny human physical commonalities. What both schools of thought *do* deny is human commonalities at the level of meaning – human bodies as inert physical objects may be subject to a common set of laws, but this has little to do with the lived world of human significance. It is this latter world that is culturally constructed (or, for the existentialists, created by the individual *ex nihilo*), and despite vague animal preferences for cereal over cardboard or cherries over stones, it is this constructed world of culturally or linguistically mediated experience that is all that we are really in touch with.

<sup>3</sup> By Marty Smith, originally published in a local Portland paper, *Free Agent*, in March 1987, reprinted in the *Utne Reader* Nov./Dec. 1993 (used with the permission of the author).

Even if only a fraction of the evidence I will review in the pages that follow is reliable, this view is wildly incorrect. French existentialists in their dark Parisian cafés drank espresso with sugar rather than, say, dog urine, because of evolved and universally human preferences for stimulants and sugar, and these physical preferences are not different in kind from our preferences for light over darkness, strength over weakness, or truth over falsity. The humor-producing tension of the Sartre satire, for instance, arises from the conflict between the existentialist assertion of a universe without meaning and the obvious truths of everyday human life: certain things taste good, certain things look good, certain actions make sense, and this ineluctable horizon of significance cannot be erased by a sea of black coffee or a mountain of Galoises. As Charles Taylor has observed in his critique of what he calls the “ethics of authenticity”:

It may be important that my life be chosen . . . but unless some options are more significant than others, the very idea of self-choice falls into triviality and hence incoherence. Self-choice as an ideal makes sense only because some *issues* are more significant than others. I couldn’t claim to be a self-chooser, and deploy a whole Nietzschean vocabulary of self-making, just because I choose steak and fries over poutine for lunch. Which issues are significant, *I* do not determine. If I did, no issue would be significant. . . . To shut out demands emanating from beyond the self is precisely to suppress the conditions of significance, and hence to court trivialization. (1992: 39–40)<sup>4</sup>

Kurt Vonnegut Jr. makes a similar point in observing that “characters paralyzed by the meaninglessness of modern life still have to drink water from time to time” (1982: 110), as does Terry Eagleton in noting that certain shared and universal human norms, such as the fact that that “people do not throw themselves with a hoarse cry on total strangers and amputate their legs” (2003: 15), are part of an inescapable background of human intelligibility.

This is not to deny the power and poetry of the existentialist position – one would have to be dead not to be moved by the quietly courageous and resolutely lucid stance of Camus’ *homme absurde* as portrayed in *The Myth of Sisyphus* or *The Plague* (1942, 1947). But Camus’ gift as a writer and rhetorician is what in fact invalidates his basic philosophical point, because – despite his claim that he rejects any “scale of values” (1947: 86) – the very power of his ideal is derived from predetermined and universal human values: being awake is better than being asleep; being clear is better than being muddled; being strong and courageous is better than being weak and cowardly. Camus’ creativity consists in recruiting these universal normative reactions and mapping them in a quite novel manner: lucidity consists in knowing nothing for certain, and courage consists in rejecting those transcendent truths that once were perceived as requiring strength to defend

<sup>4</sup> Taylor tends to view these “demands emanating from beyond the self” as primarily historical and social rather than naturalistic, but the basic critique of individual constructivism is the same.

against unbelief. The mappings are new, but the sources are probably as old as *Homo erectus*.<sup>5</sup> Similarly, despite postmodernist posturing, the motivations and goings-on at any given annual Modern Language Association meeting would, with a little bit of background explanation, be perfectly comprehensible to Pleistocene hunter-gatherers: friendship, intellectual curiosity, coalition recruitment, exchange of adaptive information (including a heavy dose of social gossip), and an overall direct or indirect goal of achieving security, prestige, power, and sexual access.<sup>6</sup>

Unless one is willing to take refuge in strong Platonism or Cartesianism and embrace the existence of an autonomous “Ghost in the Machine,” the mind *is* the body, and the body *is* the mind. Despite Camus’ anguished claims, then, there is no absurd gap between our need for transparent certainty and a dense world devoid of meaning. The world *is* reasonable – not in the sort of transcendent, absolute sense that Camus rightly dismisses as wishful consolation, but in an eminently embodied, anthropocentric sense. The process of evolution ensures that there is a tight fit between our values and desires and the structure of the world in which we have developed. No appeal to eternal verities is required to assure us that a cigarette and stone omelet would make even Malraux puke, or that an empty bowl of Foucault Flakes would leave us unsatisfied. Of course, as I will argue in Chapter 4, human beings are apparently unique among animals in possessing the cognitive fluidity and cultural technology to effect some substantial changes in what gives us pleasure, what we find worth pursuing, and what we deem as meaningful. But all of this cognitive and cultural innovation is grounded in – and remains ultimately constrained by – the structure of our body-minds.

The fact that these body-minds are, have always been, and will always continue to be part of the world of things also effectively short-circuits the epistemological skepticism that permeates postmodernist thinking. A nondualistic approach to the person promises no privileged access to eternal, objective truths, but is based upon the belief that commonalities of human embodiment in the world can result in a stable body of shared knowledge, verified (at least provisionally) by proofs based on common perceptual access. By breaching the mind-body divide – by bringing the human mind back into contact with a rich and meaningful world of things – this approach to the humanities starts from an embodied mind that is always in touch with the world, as well as a pragmatic model of truth or verification that takes the body and the physical world seriously.

<sup>5</sup> Camus himself seems to be pointing in this direction with his observation that “nous prenons l’habitude de vivre avant d’acquérir celle de penser” (We take on the habit of living before acquiring that of thinking) (1942: 23).

<sup>6</sup> A point made with grace, sympathy, and humor by the novelist David Lodge in works such as the trilogy *Changing Places*, *Small World*, and *Nice Work* (Lodge 1975, 1984, 1988). One of Lodge’s more recent works, *Thinks . . .* (2001) takes on issues involving cognitive science, the humanities, and the fear of reductionism, with the usual doses of insight concerning human nature and sexuality thrown in for good measure.

## VERTICAL INTEGRATION

In place of what has turned into a jealously guarded division of labor between the humanities and the natural sciences, then, this book will argue for an integrated, “embodied” approach to the study of human culture. While the humanities do concern themselves with human-level structures of meaning characterized by emergent structures irreducible (at least in practice) to the lower-level structures of meaning studied by the natural sciences, they are not completely *sui generis*. If we are to take the humanities beyond dualistic metaphysics, these human-level structures of meaning need to be seen as grounded in the lower levels of meaning studied by the natural sciences, rather than hovering magically above them. Understood in this way, human-level reality can be seen as eminently *explainable*. Practically speaking, this means that humanists need to start taking seriously discoveries about human cognition being provided by neuroscientists and psychologists, which have a constraining function to play in the formulation of humanistic theories – calling into question, for instance, such deeply entrenched dogmas as the “blank slate” theory of human nature, strong versions of social constructivism and linguistic determinism, and the ideal of disembodied reason. Bringing the humanities and the natural sciences together into a single, integrated chain seems to me the only way to clear up the current miasma of endlessly contingent discourses and representations of representations that currently hampers humanistic inquiry. By the same token, as natural scientists begin poking their noses into areas traditionally studied by the humanities – the nature of ethics, literature, consciousness, emotions, or aesthetics – they are sorely in need of humanistic expertise if they are to effectively decide what sorts of questions to ask, how to frame these questions, and what sorts of stories to tell in interpreting their data.

Of course, calls for breaking down the barriers between the humanities and natural sciences are at least as old as the division itself. In the exciting early days of the scientific revolution, David Hume foresaw the imminent integration of moral philosophy and empirically grounded physiology and psychology:

Men are now cured of their passion for hypotheses and systems in natural philosophy, and will hearken to no arguments but those which are derived from experience. It is full time that they should attempt a like reformation in all moral disquisitions; and reject every system of ethics, however subtle or ingenious, which is not founded on fact and observation. (1777/1976: 174–175)

Hume’s prediction was a bit premature. Arguably one of the primary barriers to the sort of integration Hume desired is the fact that human beings seem to be born dualists (Bloom 2004), with a deeply ingrained and universal tendency to see the world as divided into conscious agents exercising free will and dumb, inert objects. Breaking down the humanities–natural science divide thus requires overcoming, or at least bracketing, some very powerful folk intuitions.

As a study of historical paradigm shifts, such as the triumph of Copernicus over Ptolemy, demonstrates, displacing folk intuitions is possible but only with great difficulty, on the strength of overwhelming empirical evidence, and perhaps only partially – I, for one, continue to spend most of my life experiencing a Ptolemaic solar system. What has happened in the last few decades to make Hume’s call for integration more feasible is the explosive development of cognitive science. A blanket term for a set of disciplines – artificial intelligence (AI), philosophy of consciousness, and various branches of neuroscience, psychology, and linguistics – concerned with the empirical investigation of the human mind, cognitive science has created an intellectual environment where bracketing our human predisposition toward dualism may finally be a *real*, rather than merely notional, possibility for us.<sup>7</sup> In Hume’s time, and indeed up to the last few decades, the cognitive sciences have been in such a primitive state that taking a thoroughly physicalist stance toward the person was no more than a notional possibility, perceived dimly by authors such as Dostoevsky and pioneering empiricists such as William James but patently absurd to most sober thinkers. As Daniel Dennett notes, until the creation of computers and artificial intelligence systems in the 1950s, the idea that dumb matter by itself could ever give rise to consciousness was deemed inconceivable by most philosophers (1995: 26–33), and for good reason: conscious beings have powers that seem so genuinely unique that they *must* have their origin in some ontologically distinct substance. The “intuition pump” needed to get beyond this apparently self-evident fact did not come along until the advent of AI systems such as the IBM supercomputer Deep Blue or the virtual interlocutor named Eliza, which provided fairly concrete evidence that a purely physical, algorithmic system of “myopic, semi-intelligent demons” can produce something that looks and acts very much like consciousness (1995: esp. 200–212, 428–437).

One possible response to the AI revolution is to draw back into what Owen Flanagan refers to as the “mysterian” position: artificial intelligence can produce the *illusion* of consciousness, but we know it can’t be real consciousness, because, well, we just *know* it.<sup>8</sup> Other humanists have decided to bite the ontological bullet and explore the consequences of taking seriously what cognitive science seems to be suggesting: consciousness is not a mysterious substance distinct from matter, but rather an emergent property of matter put together in a sufficiently complicated way. The manner in which we engage in the study of consciousness and its products – that is, the traditional domain of the humanities – should therefore be

<sup>7</sup> Borrowing terminology from Bernard Williams. As Williams explains, a real possibility for me is one that I could actually embrace without losing my basic sense of reality, while a notional possibility – such as my deciding to lead the lifestyle of a medieval samurai – can be imagined only in the abstract; see Williams 1985: Ch. 9.

<sup>8</sup> See Flanagan’s distinction between the “old mysterians” (unabashed dualists) and “new mysterians” – professed naturalists who nonetheless place consciousness outside of the realm of naturalistic explanation (1992: esp. 8–11).

brought into coordination with the manner in which we study less complex (or differently complex) material structures, while never losing sight of the strange and wonderful emergent properties that consciousness brings with it. In other words, we need to see the human mind as *part* of the human body rather than as its ghostly occupant, and therefore the human person as an integrated mind-body system produced – like all of the other body-mind systems running around in the world – by evolution. This is the sentiment behind the arguments for an explanatory continuum extending equally through the natural and human sciences that have recently and prominently been offered by, for instance, the entomologist E. O. Wilson with his call for “consilience” (Wilson 1998), the evolutionary psychologists John Tooby and Leda Cosmides with their argument for the need for “vertical integration” (Tooby & Cosmides 1992), and the neuroscientist and linguist Steven Pinker with his critique of the humanistic dogma of the “Holy Trinity” (the Blank Slate, the Noble Savage, and the Ghost in the Machine) (Pinker 2002). It is also the guiding principle behind the “embodied cognition” approach to the study of human culture that we will be exploring in the pages that follow.<sup>9</sup>

#### EMBODIED COGNITION AND THE HUMANITIES

When I accepted a new position at the University of British Columbia I was given the luxury of creating my own title. I was to be a “Canada Research Chair . . .,” but chair of *what* was up to me to decide. The formulation I eventually settled on was “Chinese Thought and Embodied Cognition.” The first half is fairly straightforward – my specialty is early Chinese thought, and this is my primary claim to expertise – but the second half usually takes some explaining. For instance, at a welcome party soon after my arrival, one of my new colleagues from the Psychology Department expressed amusement at the second half of my new job description, thinking it an oxymoron. “Isn’t *all* cognition embodied?” she asked.

This is an unsurprising response from someone working outside of the core humanities disciplines: the fact that human cognition is inextricably grounded in and structured by the body and its sensory-motor systems is an uncontroversial background assumption in the various branches of the cognitive sciences. What my colleague did not realize is that this is not at all the case in the humanities. For instance, in North America most philosophy departments are dominated by a traditional rationalist conception of the body as a simple container for carrying around and supporting a mind with its own independent, formal structure. Many AI researchers, formal linguists, and more traditional cognitive scientists also adhere to a model of the brain as a machine for abstract symbol manipulation, with the body reduced to a simple input-output device. At the other end of the

<sup>9</sup> For other introductions to the embodied approach to human cognition and culture, see the Appendix.

ideological spectrum, the forms of postmodernism that dominate most Faculty of Arts departments may talk a lot about the body these days, but for them the body is ultimately nothing more than an inert tabula rasa to be “inscribed” by culture or a passive victim of power structures created by disembodied discourses.

Part of the argument of this book is that – however intuitively appealing – the mind-body dualism upon which both the Enlightenment high-reason model and postmodernism are based is being seriously called into question by recent movements in the study of perception, AI, psychology, cognitive science, linguistics, and behavioral neuroscience. In the science of perception, a tradition going back to William James has been revived by researchers who argue that perception is not simply passive representation of the external world inside the individual’s head, but is inextricably bound up with embodied *action* in the world.<sup>10</sup> These insights have been drawn on by AI researchers, who have begun, for instance, to design robots that use pragmatic, embodied heuristics to dramatically outperform more traditional robots relying on passive representation.<sup>11</sup> In neuroscience and psychology there is a growing body of evidence supporting the claim that many, if not most, human concepts and thoughts are imagistic structures grounded in sensory-motor schemas,<sup>12</sup> that human categories are radial structures grounded in prototype images,<sup>13</sup> and that the mind is not a general-purpose computer ready to soak up whatever information is presented to it, but rather a collection of innate, specialized modules designed to handle specific types of information.<sup>14</sup> In the field of behavioral neuroscience, a picture of human reasoning and decision making has emerged that strongly suggests a constitutive role for emotions and other somatic biases,<sup>15</sup> and in economics there has been a shift away from abstract rational-actor theories toward models incorporating inherent cognitive biases and “fast and frugal” heuristics.<sup>16</sup> Linguistics has seen the creation of a new movement called “cognitive linguistics” that argues against an exclusive focus on abstract syntactic rules: semantics inextricably informs syntax, and both semantic forms and abstract concepts can in many cases be seen as being derived from sensory-motor patterns.<sup>17</sup> All of the features of perception and action just described are

<sup>10</sup> Gibson 1979, Neisser 1976, Noë 2004; also cf. Varela et al.’s concept of “enacted” cognition (1991: 9).

<sup>11</sup> Ballard 1991 and 2002 and Brooks 1991.

<sup>12</sup> Arbib 1972 and 1985, Johnson 1987, Damasio 1989, Tranel et al. 1997, Barsalou 1999a, Gibbs 2003, Zwaan 2004, Pecher & Zwaan 2005.

<sup>13</sup> Rosch 1973 and 1975, Rosch et al. 1976, Lakoff 1987.

<sup>14</sup> The classic arguments for an at least partially modular model of the mind are found in Chomsky 1965 and Fodor 1983; for a more thoroughgoing modular account, see Tooby & Cosmides 1992 and 2005, Hirschfeld & Gelman 1994, and Carruthers et al. 2005 and 2006.

<sup>15</sup> De Sousa 1987; Damasio 1994, 2000, 2003; LeDoux 1996; Haidt 2001; Solomon 2003, 2004; Prinz 2006.

<sup>16</sup> Kahneman et al. 1982, Gigerenzer 2000, Kahneman & Tversky 2000, Gigerenzer & Selten 2001.

<sup>17</sup> Lakoff & Johnson 1980 and 1999, Johnson 1987, Langacker 1987 and 1991, Sweetser 1990, Talmy 2000; for some recent and concise statements of the position, see Gallese & Lakoff 2005, Gibbs 2005, Langacker 2005, and the essays collected in Hampe 2005.



subservied by an integrated physical system, the body-brain, that to the best of our knowledge did simply not drop out of a spaceship or emerge, like Athena, fully clad in armor from the head of Zeus, but rather evolved gradually from other life-forms – some now lost to us except for spotty fossil records, others alive and well and currently engaged in their own vigorous forms of perception and action. The explanation of the origin of the particular body-brain system we as humans now possess, as well as its relationship to that possessed by other animals around us, has therefore become the focus of the new movement of evolutionary psychology,<sup>18</sup> and has resulted in an increased interest on the part of human psychologists in the cognitive abilities of other animal species.<sup>19</sup> Finally, the recognition that a large part of the environment in which humans find themselves embodied is itself a human creation has focused attention on how cultural differences in embodied experience affect thought,<sup>20</sup> as well as how cultural forms are created and transmitted by cognitively limited organisms.<sup>21</sup>

In a helpful survey article, Margaret Wilson (2002) identifies six different ways in which the claim that cognition is “embodied” can be understood:

1. Cognition is situated
2. Cognition is time pressured
3. Cognitive work is offloaded onto the environment
4. The environment is part of the cognitive system
5. Cognition is designed for action
6. Offline cognition is body based

Wilson argues that it is the last of these claims – the idea that even abstract thinking and imagination is structured by the body and its interactions with the environment – that is the best documented and most important. In the pages that follow I will be arguing at times for all of these claims, but it is claim 6 that will be my focus, since it most directly calls into question traditional objectivist and social constructivist views of the self.<sup>22</sup> What it means, then, to take an embodied approach to culture is to realize that the body does more than merely carry around our brain or serve as a raw material for cultural inscription. As Mark Johnson has

<sup>18</sup> See especially the essays in Barkow et al. 1992 and Buss 2005 for an introduction to the massive literature in this field.

<sup>19</sup> E. O. Wilson was one of the pioneers in comparative ethology (see esp. Wilson 1975/2000); see also Premack & Premack 1983 and 2003; Byrne & Whiten 1988; de Waal 1989, 1996, and 2001; Cheney & Seyfarth 1990; Povinelli 2000; and Rumbaugh & Washburn 2003.

<sup>20</sup> Gibbs 1999, Núñez & Freeman 1999, Weiss & Haber 1999, Sinha & Jensen de Lopez 2000, Boroditsky 2001.

<sup>21</sup> Atran 1990, Boyer 1994 and 2005, Sperber 1996, Sperber & Hirschfeld 2004.

<sup>22</sup> Cf. Tim Rohrer 2001: 60–61, who argues that “embodied” with regard to cognition is used at least ten different ways, but that the best overall characterization is as a shorthand for an anti-Cartesian account of mind and language that argues that thought is inextricably tied to bodily sensation, experience, and perspective.

been arguing for decades, we need to “put the body back in the mind” (1987) and acknowledge the degree to which the details of our embodiment help determine the possible structure of meaningful human experience.

### *The Trouble with Embodiment*

Embodied approaches to culture are slowly making inroads into the humanities.<sup>23</sup> In literary studies, a small minority of scholars has been arguing for the relevance of cognitive linguistics, cognitive science, and evolutionary theory, and similar arguments have begun to be advanced in art history, religious studies, and a beleaguered but growing subset of the anthropological community.<sup>24</sup> Even in philosophy, the stronghold of traditional objectivism, there have been signs of movement. One could trace the beginnings of change to W. V. O. Quine and Wilfrid Sellars in the 1960s, when at least a certain subset of the professional philosophical community began to see philosophical inquiry as continuous in many respects with the empirical sciences,<sup>25</sup> and this movement has gathered more steam in the work of philosophers such as Mark Johnson, Paul and Patricia Churchland, Daniel Dennett, Owen Flanagan, and Stephen Stich, whose views we shall examine in the chapters that follow.<sup>26</sup> For the most part, however, these calls for vertical integration seem to have consistently fallen on deaf ears. Almost two hundred and fifty years after Hume’s call for an empirically grounded approach to ethics, for instance, the vast majority of academic philosophy is still conducted in blissful ignorance – or active dismissal – of discoveries in the cognitive sciences that bear intimately on central philosophical problematques. Similarly, the few scholars in religious studies, classics, literature, history, anthropology, and sociology who have even the slightest familiarity with scholarship from a cognitive or evolutionary angle generally react to it with unconcealed hostility. Why is this the case?

Much of the resistance to integrating the humanities and natural sciences arises out of concerns about crude reductionism, or worries about the politically and morally unsavory manner in which essentialist claims about human nature have been employed in the past. These are important concerns, and they will be addressed later. The primary justification and intellectual rallying point for this resistance, however, is theoretical and emerges from a cluster of theories that I have been referring to as “postmodernism.” “Postmodernist” is, of course, a notoriously vague

<sup>23</sup> For embodied approaches to aesthetics, literature, morality, and religious studies, see the Appendix.

<sup>24</sup> See especially the work of researchers associated with the Behavior, Evolution, and Culture (BEC) group at UCLA and the Evolution, Mind, Behavior Program at UC Santa Barbara, as well as that of Joseph Henrich and Mark Collard at the University of British Columbia.

<sup>25</sup> See, for instance, Quine’s description of epistemology as “a chapter of psychology and hence of natural science” (1969: 82) and Sellars 1963, as well as Patricia Churchland 1986: 2–3 for a short discussion of the “naturalist” movement in philosophy.

<sup>26</sup> This trend, the latest iteration of which was arguably kicked off by Johnson 1987 and 1993 and Flanagan 1991, will be further discussed in the Conclusion, and references are provided in the Appendix.

adjective, being applied nowadays to everything from poststructuralist French literary theory to trendy styles of living room furniture. I think, however, that it has not entirely lost its usefulness as a signifier. What I see as the core of “postmodern relativism” is an approach to the study of culture that assumes that humans are fundamentally linguistic-cultural beings, and that our experience of the world is therefore mediated by language and/or culture *all the way down*. That is, we have no direct cognitive access to reality, and things in the world are meaningful to us only through the filter of linguistically or culturally mediated preconceptions. Inevitable corollaries of this stance are a strong linguistic-cultural relativism, epistemological skepticism, and a “blank slate” view of human nature: we are nothing until inscribed by the discourse into which we are socialized, and therefore nothing significant about the way in which we think or act is a direct result of our biological endowment.<sup>27</sup> As I argued earlier, this approach has served as the background theoretical stance in most fields of the humanities for the past several decades, and even a cursory perusal of the annual conference schedules of the American Academy of Religion, Modern Language Association, or the American Anthropological Association will show that it continues to serve as the default approach in these fields.

From the very beginning postmodernism has inspired backlash, often from an objectivist standpoint. The reception of poststructuralist literary theory in North American philosophy departments, for example, has always been positively frigid, if it even makes sense to describe as “reception” a situation where the received is for the most part contemptuously ignored. Even within the field of literary studies there have always been holdouts. My hero back in the early days of graduate school was Terry Eagleton, whose lucid accounts of the development of poststructuralist literary theory were coupled with what I saw as devastating critiques of its intellectual and motivational bases.<sup>28</sup> These were both godsend to a fledgling scholar trapped in a required graduate seminar on “modern Chinese literature” that involved no Chinese and no literature – merely an endless diet of what seemed to me perversely opaque French theory. More recent critiques of something resembling the postmodern cluster include Tooby and Cosmides 1992 and Pinker 2002, as well as the growing body of counterattacks by defenders of objectivist models of science against social constructivism in “science studies” – the so-called Sokal hoax being perhaps the most notorious.<sup>29</sup>

<sup>27</sup> Cf. Donald Brown’s discussion of relativism in anthropology and sociology (1991: esp. 9–38), John Tooby and Leda Cosmides’s characterization of the “Standard Social Scientific Model” (SSSM) (1992: esp. 24–32), and Steven Pinker’s discussion of the “Holy Trinity” (Blank Slate, Noble Savage, and Ghost in the Machine) that he sees as dominating contemporary humanistic discourse (2002: esp. 5–29).

<sup>28</sup> See, e.g., Eagleton 1983 and 2003. Eagleton’s critique, of course, comes yoked to a kind of doctrinaire Marxism that even left-leaning humanists find increasingly difficult to swallow.

<sup>29</sup> See, e.g., Gross & Levitt 1994, Gross et al. 1996, Sokal & Bricmont 1998, Koertge 1998, and The Editors of *Lingua Franca* 2000.

This backlash, however, has not always been carefully aimed, and the proponents and opponents of, say, poststructuralist literary theory or the “strong programme” in the philosophy of science often seem to be talking past each other. Elisabeth Lloyd (1996), for instance, has argued that critiques of feminist approaches to the philosophy of science by the likes of Gross and Levitt are hysterical overreactions, and although she does present what I think are overly tame versions of Sandra Harding and Bruno Latour to support her point, it is hard to argue with the claim that the feminist-insight baby is often thrown out with the bathwater. It probably does not help that both sides of the debate show predilections for straw-man arguments, and that the political and social implications of the controversy have the effect of raising emotions and tempers on both sides (Segerstråle 2000).

### *Clearing the Way for Embodiment*

As should already be quite clear, I do not pretend to be coming from a neutral stance in this debate. Postmodernism seems to me to have outlived its usefulness as a coherent methodological or theoretical position, and the entire point of this book is to make the case that an embodied approach to culture allows us to preserve all of the helpful insights of postmodernism without having to frame them in terms of an empirically false and internally incoherent epistemology and ontology. However, I do think that the proponents of vertical integration bear some of the responsibility for its failure to win wider acceptance among humanists, and this is because its proponents do not fully address the concerns that motivate those who continue to espouse postmodern relativist views. I myself have no formal training in cognitive science. Other recent introductions of the field, written from an expert’s perspective, cover more ground and supply more technical detail concerning embodied cognition, and the reader is strongly urged to consult these works as well.<sup>30</sup> What I see as the main contribution of this book is my ability, as a humanistic insider, to speak to the concerns of my colleagues and thereby to help clear the way for the acceptance of embodied approaches to culture. The primary goal in the pages that follow is therefore to work to remove what I see as some important barriers to a more widespread acceptance of an embodied approach to culture – barriers that sometimes appear to be invisible to the champions of vertical integration or consilience.

**PROBLEMS WITH OBJECTIVISM.** There are real problems with traditional objectivist realism and the representational model of knowledge that together form the “folk” or background assumption of the vast majority of working scientists, and that are implicit in many of the critiques of postmodern relativism. Proponents of the embodied view often take for granted the explanatory precedence of the natural

<sup>30</sup> See especially Clark 1997, Pinker 1997, Gallagher 2005, Gibbs 2006, and Thompson 2007.

sciences. To writers such as E. O. Wilson or Steven Pinker, it is self-evident that natural science has a special epistemological status. When they argue that humanists have to take the natural sciences more seriously, they therefore usually end up merely preaching to the converted and irritating the unconverted. To my fellow humanists, it is not at all clear that the natural sciences should be viewed as a more basic level of explanation of the world. “After Kuhn” – a phrase one hears quite a bit when the subject of science comes up among humanists – have we not learned that “science” is simply one discourse among many? Didn’t Feyerabend prove this, or Bruno Latour? This attitude that the natural sciences are simply contingent, social constructs needs to be confronted head-on before there can be any talk of vertical integration – the metaphor of verticality makes no sense unless we can make a case for there being “lower” levels of explanation that are, in some important sense, more basic than “higher” levels. Steven Pinker, for instance, is very sensitive to the political sentiments that motivate defenders of the humanistic “Holy Trinity,” and he quite rightly points out that yoking these laudable values to an empirically false view of human nature is the best way to assure that they will never be realized. He does not, however, adequately address the fact that resistance to consilience stems from substantive epistemic as well as political concerns. Defenders of the Trinity are not simply wild-eyed liberals with a disdain for rational thought.

Postmodernism is not the only problem. I follow Mark Johnson in feeling that, in order to really put “the body in the mind” (Johnson 1987), it is necessary to get beyond objectivist realism as well as postmodern relativism. Before we can do this, however, we first need to problematize *both* of these dualistic approaches to knowledge and truth that currently dominate inquiry in the core humanities departments, because vertical integration makes no sense if you are a committed dualist. In Chapters 1 through 3, I will therefore explore problems with dualistic epistemologies in general, focusing on both objectivist realism and postmodern relativism. This will involve a particular focus on the philosophy of science.

In Chapter 1, I will sketch out the basic objectivist position and then explore some recent work from the cognitive sciences that call this position into question. For instance, work in the neuroscience of perception in the past few decades has moved away from older, purely representational models and more toward “enacted,” embodied ones. Taking an embodied approach to human perception and cognition solves certain venerable objectivist problems – such as the grounding problem, or how symbols “in the head” can connect with things in the world – and helps to clear away some unhelpful and outmoded objectivist theories about how thought and language connect with the world.<sup>31</sup> Other work coming out of cognitive neuroscience and social psychology problematizes the objectivist – and

<sup>31</sup> See Hilary Putnam 1999, especially Chapter 2 (“The Importance of Being Austin”), for a lucid explanation of how the contemporary science of perception can help us to immediately cut through long-standing knots in epistemology.

folk – assumption of a fully conscious, unitary “self” that serves as a central clearing house for information and an exclusive initiator of action. Similarly, recent work on the role of mental images and emotional centers of the brain call into question the objectivist view of this little homunculus as guided (at least ideally) by disembodied, algorithmic rationality. Of particular interest will be evidence that human thought consists primarily of manipulating concrete images grounded in value-imbued sensory-motor structures rather than amodal, disembodied symbols. The “somatic marker” hypothesis of Antonio Damasio along with the “perceptual symbol” theory developed by cognitive scientists such as Lawrence Barsalou and Rolf Zwaan represent important correctives to the objectivist model of the self, suggesting as they do that human cognition is embodied through and through.

Turning to critiques of objectivist science, I will attempt to separate the important insights of what I fondly think of as the “good” Kuhn from the rhetorical excesses of the “bad” Kuhn, and will spend some time attempting to pinpoint the moments when philosophers of science such as Kuhn, Feyerabend, and Latour move from offering quite reasonable correctives to traditional objectivist models of science to making entirely unfounded, strongly relativist claims about human knowledge – a move that I have come to think of as the “slide into relativism.” Postmodern apologists (and the writers themselves, when pressed on the matter) tend to focus on the preslide comments, whereas their opponents gleefully cite the postslide comments in order to discredit the entire position. My hope is that by disentangling the two we can arrive at a clearer picture of what is right and what is wrong about the postmodern critique of objectivist science, and about critiques of natural science-derived truth claims about things like human nature.

Chapters 2 and 3 will be concerned with the various movements I will be lumping together under the label of “postmodernism.” One of the more interesting – and revealing – features of postmodernism in the modern Academy is that virtually every postmodernist denies being one, usually accompanying this denial with the confident assertion that we in the humanities have “moved beyond” postmodern theory. I therefore felt the need to dedicate an entire chapter, Chapter 2, to simply demonstrating that a position quite reasonably described as “postmodern” not only is alive and well but in fact serves as the foundational theoretical dogma in most areas of the humanities. I will also discuss how the rejection of the “postmodern” label itself reveals a growing awareness that something is wrong with this position, while a failure to get beyond a strongly dualist model of the human self makes it impossible for most humanists to formulate a coherent alternative.

Chapter 3 is devoted to the task of philosophical euthanasia: finally putting to rest postmodern epistemology and ontology, with the hope that this will help clear away the intellectual miasma that I spoke of earlier. After reviewing some of the more obvious internal or theoretical problems with the strong postmodernist position, I will spend the bulk of the chapter on a quick tour of the mountain of

empirical evidence coming out of the cognitive sciences that suggests that linguistic or cultural constructivism is simply false. This is particularly important because humanists generally do not *know* much about the natural sciences, and I think this is one of the primary reasons why they can continue to hold onto empirically absurd models of, for instance, human nature, or the relationship of thought to language.<sup>32</sup> The current “best-we-can-know” state of the art in the cognitive sciences undermines many venerable humanistic canards. Thought is not language. Perception tells us something about the world besides our own – or our culture’s – presuppositions. The basic structures of human thought are not *sui generis* and share important commonalities with nonhuman animals. Human beings are not blank slates, and the human brain is not an amorphous, general-purpose processor, but rather a collection of specialized modules with specific purposes and structures that were important for human survival in our evolutionary “ancestral environment.” This means that the evolved architecture of the human brain imposes a certain structure and set of limitations on human cognition, constraining human conceptions of entities, categories, causation, physics, psychology, biology, and other humanly relevant domains. These commonalities include not only modes of intellectual apprehension but also basic normative reactions: human beings tend to dislike darkness, sickness, and weakness, and tend to like light, health, and strength.

**EXPLAINING HUMAN CULTURAL VARIETY.** Despite the theoretical and empirical problems with the strong social constructivist position, it continues to appeal to us for at least two reasons. The first is simply the innate plausibility of dualism for creatures like us, an issue that is directly addressed in Chapter 6. The second is the undeniable fact of intercultural variety. Once we feel that we can accept the existence of a set of grounded, human cognitive universals, and have formulated a coherent defense of the empirical data on which claims about such universals are based, more needs to be said about how a shared embodied mind could produce the sort of cultural variety that is the single most salient phenomenon to humanists. This is the purpose of Chapter 4. Cultures are diverse and complicated in ways that are often not immediately apparent to outsiders, and it genuinely raises the hackles of humanists to be told that the elaboration of “thick” cultural description that is their *métier* is ultimately concerned with trivial epiphenomena. Of course, this is not actually the position of scholars such as Tooby and Cosmides or Pinker, but – especially when they are not read carefully – it certainly *sounds* this way to many humanists.

<sup>32</sup> There have been some recent attempts to present aspects of natural science to a humanistic audience (e.g., Varela et al. 1991, Pinker 1997 and 2002, Hogan 2003, and Gallagher 2005), but as yet I do not feel that there exists an accessible, coherent picture of the full range of findings from the natural sciences that are relevant to scholars working in the humanities.