

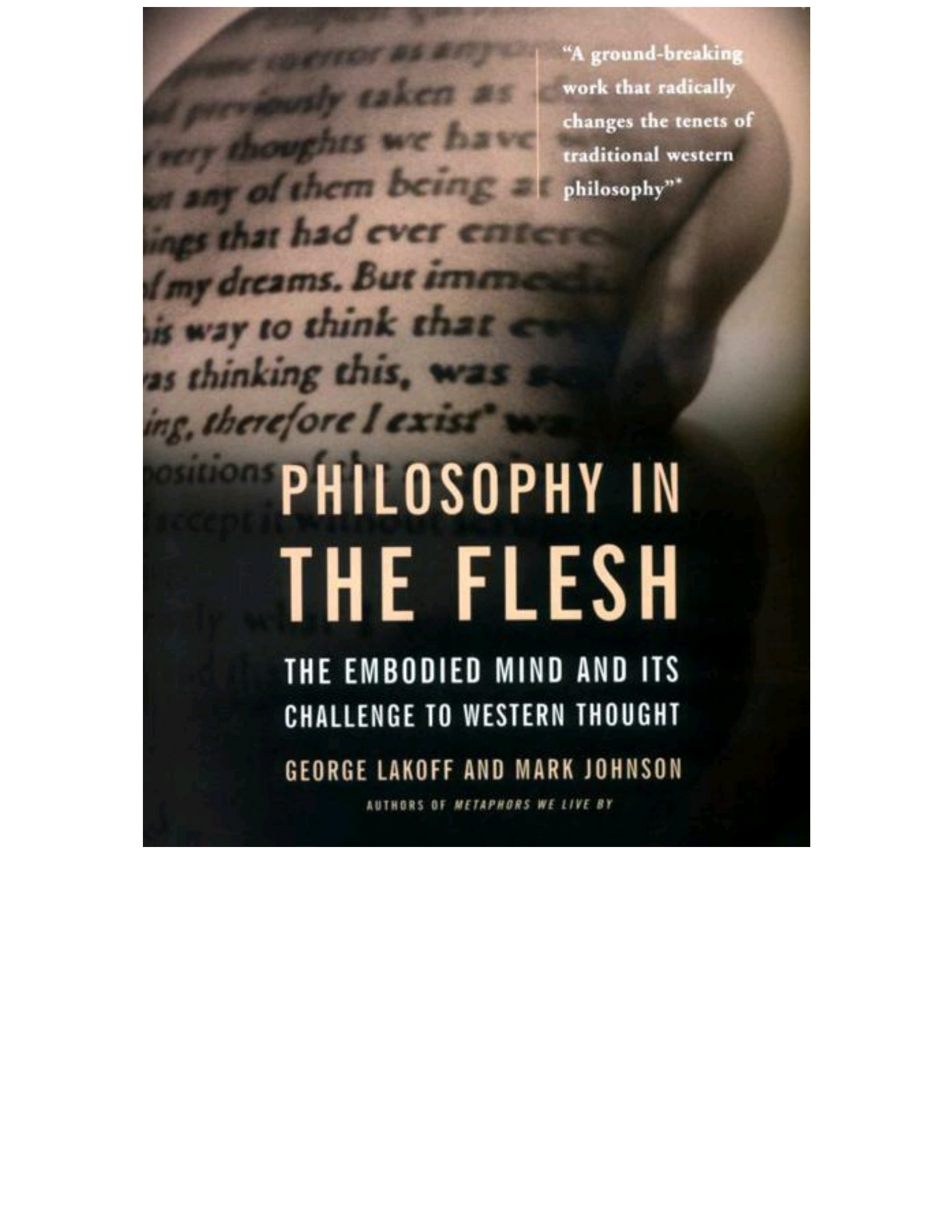
"A ground-breaking work that radically changes the tenets of traditional western philosophy"

PHILOSOPHY IN THE FLESH

THE EMBODIED MIND AND ITS
CHALLENGE TO WESTERN THOUGHT

GEORGE LAKOFF AND MARK JOHNSON

AUTHORS OF *METAPHORS WE LIVE BY*

A close-up photograph of a hand holding a pen, poised to write on a document. The document's text is out of focus, showing phrases like "error as anyone", "previously taken as", "every thoughts we have", "any of them being at", "things that had ever entered", "my dreams. But immediately", "his way to think that even", "as thinking this, was", "ing, therefore I exist" was", and "positions of the".

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Library of Congress Cataloging-in-Publication Data

Lakoff, George.

Philosophy in the flesh : the embodied mind and its challenge to western thought / by George Lakoff and Mark Johnson.

p. cm.

Includes index.

ISBN 0-465-05673-3 (cloth); 0-465-05674-1 (pbk.)

1. Philosophy of mind. 2. Cognitive science. I. Johnson, Mark,

1949- . II. Title.

BD418.3.1.35 1999

128—dc21

98-37113

CIP

The paper used in this publication meets the requirements of the American National Standard for Permanence of Paper for Printed Library Materials Z39.48-1984.

10 9 8 7 6 5 4 3

For Three generations of Lakoffs Herman, Sandy, and Andy

and for Sandra McMorris Johnson

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Acknowledgments

An undertaking of this scope would not be possible without a great deal of help. Our students and colleagues at Berkeley and at Oregon L have contributed immeasurably to this work, and we would like to thank them, as well as other friends who have gone out of their way to help in this enterprise.

Claudia Baracchi, Thomas Alexander, David Barton, and Robert Hahn helped us greatly to appreciate the subtleties of Greek philosophy and provided valuable assistance with Chapters 16, 17, and 18.

Rick Grush, Michele Emanatian, and Tim Rohrer read and gave extensive comments on various drafts of the manuscript as a whole.

Eve Sweetser was involved in the project from the beginning and has made innumerable suggestions and contributions over the years. Her groundbreaking research on the metaphors for mind laid the foundation for the study presented in Chapter 12.

Jerome Feldman's definitive contributions to the neural theory of language helped lay the foundations for the approach to the embodiment of mind that is central to this work. In addition, we have benefited immensely from his detailed suggestions on various drafts of the manuscript.

Robert Powell went above and beyond the call of collegiality and friendship in helping to work out the mathematical details of rational action in Chapter 23.

Joseph Grady's investigations into the experiential basis of metaphor played a major role in the theory presented in this book, as did Srinivasa Narayanan's neural theory of metaphor, which meshed perfectly with Grady's results.

Jane Espenson spent more than a year researching the metaphorical structure of causation before leaving Berkeley for a writing career in Hollywood.

None of this work would have been possible without the development of cognitive linguistics as a discipline. Our debt to those who have defined the discipline is both immense and evident throughout the entire project. In particular, our gratitude goes to Ron Langacker, Leonard Talmy, Gilles Fauconnier, Eve Sweetser, Charles Fillmore, Mark Turner, Claudia Brugman, Adele Goldberg, and Alan Cienki.

We owe a special debt to Evan Thompson, Francisco Varela, and Eleanor Rosch, whose extensive work on embodied cognition has been inspirational and has informed our thinking throughout.

In addition, many students and colleagues have made analytic suggestions and contributed unpublished research that has greatly enriched this work. We would like to recognize their contributions, chapter by chapter.

Chapter 3, The Embodied Mind and Appendix: Jerome Feldman, Terry Regier, David Bailey, and Srinii Narayanan.

Chapter 10, Time: Rafael Nunez, Kevin Moore, Jeong-Woon Park, Mark Turner, and John Robert Ross.

Chapter 11, Events and Causes: Jane Espenson, Karin Myhre, Sharon Fischlet, Claudia Brugman, Adele Goldberg, Sarah Taub, and Tim Rohrer.

Chapter 12, The Mind: Eve Sweetser, Alan Schwartz, Michele Emanatian, and Gyorgy Laszlo.

Chapter 13, The Self: Miles Becker, Andrew Lakoff, Yukio Hirose, and Bart Wisialowski.

Chapter 14, Morality: Bruce Buchanan, Sarah Taub, Chris Klingehiel, and Tim Adamson.

We also extend our deepest thanks to others who have helped in various ways: Robert Adcock, David Abram, Michael Barzelay, David Collier, Owen Flanagan, David Galin, Christopher Johnson, Dan Jurafsky, Jean-Pierre Koenig, Tony Leiserowitz, Robert McCauley, James D. McCawley, Laura Michaelis, Pamela Morgan, Charlene Spretnak, and Lionel Wee. We would also like to thank all the participants in seminars we have held on philosophy and cognitive science at Berkeley and at Oregon, as well as the participants in our seminar at the 1996 Berkeley Summer Institute. We are indebted to several anonymous readers whose comments made this a much better book.

We are especially grateful for the diligent copyediting of Ann Moru and the editorial guidance of William Frucht.

Our wives, Kathleen Frumkin and Sandi Johnson, have not only provided support above and beyond the call of duty with their love and abundant patience extending over many years, but have also given us regular and invaluable feedback on our ideas.

We would especially like to express our gratitude for the privilege of working in the extraordinary intellectual communities at the University of California at Berkeley and the University of Oregon at Eugene. We owe a particular debt to the Institute for Cognitive Studies and the International Computer Science Institute at Berkeley.

Finally, we want to honor the two greatest philosophers of the embodied mind. Any book with the words "philosophy" and "flesh" in the title must express its obvious debt to Maurice Merleau-Ponty. He used the word "flesh" for our primordial embodied experience and sought to focus the attention of philosophy on what he called "the flesh of the world," the world as we feel

it by living in it. John Dewey, no less than Merleau-Ponty, saw that our bodily experience is the primal basis for everything we can mean, think, know, and communicate. He understood the full richness, complexity, and philosophical importance of bodily experience. For their day, Dewey and Merleau-Ponty were models of what we will refer to as "empirically responsible philosophers." They drew upon the best available empirical psychology, physiology, and neuroscience to shape their philosophical thinking.

A Note on the References

In citing the many sources we used in preparing this book, we have departed somewhat from the familiar author-date reference system by arranging the sources into subject categories. Each citation begins with a capitalized letter and a number (or sometimes just a letter) keyed to its location in the reference list. For example, our book *Metaphors We Live By* is cited in the text as (A1, Lakoff and Johnson 1980). This tells readers that the full listing can be found in section A1 of the references, "Metaphor Theory." We have done this to make it easier to find specific references and also to provide a helpful start for readers who want to dig deeper into the literature on particular topics.

Here is a complete list of the subject categories:

- A. Cognitive Science and Cognitive Linguistics
 - A 1. Metaphor Theory
 - A2. Experimental Studies in Metaphor
 - A3. Metaphor in Gesture and American Sign Language
 - A4. Categorization
 - AS. Color
 - A6. Framing
 - A7. Mental Spaces and Conceptual Blending
 - A8. Cognitive Grammar and Image Schemas
 - A9. Discourse and Pragmatics
 - A10. Decision Theory: The Heuristics and Biases Approach
- B. Neuroscience and Neural Modeling
 - B1. Basic Neuroscience
 - B2. Structured Connectionist Modeling
- C. Philosophy

C1. Cognitive Science and Moral Philosophy

C2. Philosophical Sources

D. Other Linguistics

E. Miscellaneous

Part I

How the Embodied Mind Challenges the Western Philosophical Tradition

introduction: Who Are We?

How Cognitive Science Reopens Central Philosophical Questions

The mind is inherently embodied.

Thought is mostly unconscious.

Abstract concepts are largely metaphorical.

These are three major findings of cognitive science. More than two millennia of a priori philosophical speculation about these aspects of reason are over. Because of these discoveries, philosophy can never be the same again.

When taken together and considered in detail, these three findings from the science of the mind are inconsistent with central parts of Western philosophy. They require a thorough rethinking of the most popular current approaches, namely, Anglo-American analytic philosophy and postmodernist philosophy.

This book asks: What would happen if we started with these empirical discoveries about the nature of mind and constructed philosophy anew? The answer is that an empirically responsible philosophy would require our culture to abandon some of its deepest philosophical assumptions. This book is an extensive study of what many of those changes would be in detail.

Our understanding of what the mind is matters deeply. Our most basic philosophical beliefs are tied inextricably to our view of reason. Reason has been taken for over two millennia as the defining characteristic of human beings. Reason includes not only our capacity for logical inference, but also our ability to conduct inquiry, to solve problems, to evaluate, to criticize, to deliberate about how we should act, and to reach an understanding of ourselves, other people, and the world. A radical change in our understanding of reason is therefore a radical change in our understanding of ourselves. It is surprising to discover, on the basis of empirical research, that human rationality is not at all what the Western philosophical tradition has held it to be. But it is shocking to discover that we are very different from what our philosophical tradition has told us we are.

Let us start with the changes in our understanding of reason:

- Reason is not disembodied, as the tradition has largely held, but arises from the nature of our brains, bodies, and bodily experience. This is not just the innocuous and obvious claim that we need a body to reason; rather, it is the striking claim that the very structure of reason itself comes from the details of our embodiment. The same neural and cognitive mechanisms that allow us to perceive and move around also create our conceptual systems and modes of reason. Thus, to understand reason we must understand the details of our visual system, our motor system, and the

general mechanisms of neural binding. In summary, reason is not, in any way, a transcendent feature of the universe or of disembodied mind. Instead, it is shaped crucially by the peculiarities of our human bodies, by the remarkable details of the neural structure of our brains, and by the specifics of our everyday functioning in the world.

- Reason is evolutionary, in that abstract reason builds on and makes use of forms of perceptual and motor inference present in "lower" animals. The result is a Darwinism of reason, a rational Darwinism: Reason, even in its most abstract form, makes use of, rather than transcends, our animal nature. The discovery that reason is evolutionary utterly changes our relation to other animals and changes our conception of human beings as uniquely rational. Reason is thus not an essence that separates us from other animals; rather, it places us on a continuum with them.
- Reason is not "universal" in the transcendent sense; that is, it is not part of the structure of the universe. It is universal, however, in that it is a capacity shared universally by all human beings. What allows it to be shared are the commonalities that exist in the way our minds are embodied.
- Reason is not completely conscious, but mostly unconscious.
- Reason is not purely literal, but largely metaphorical and imaginative.
- Reason is not dispassionate, but emotionally engaged.

This shift in our understanding of reason is of vast proportions, and it entails a corresponding shift in our understanding of what we are as human beings. What we now know about the mind is radically at odds with the major classical philosophical views of what a person is.

For example, there is no Cartesian dualistic person, with a mind separate from and independent of the body, sharing exactly the same disembodied transcendent reason with everyone else, and capable of knowing everything about his or her mind simply by self-reflection. Rather, the mind is inherently embodied, reason is shaped by the body, and since most thought is unconscious, the mind cannot be known simply by self-reflection. Empirical study is necessary.

There exists no Kantian radically autonomous person, with absolute freedom and a transcendent reason that correctly dictates what is and isn't moral. Reason, arising from the body, doesn't transcend the body. What universal aspects of reason there are arise from the commonalities of our bodies and brains and the environments we inhabit. The existence of these universals does not imply that reason transcends the body. Moreover, since conceptual systems vary significantly, reason is not entirely universal.

Since reason is shaped by the body, it is not radically free, because the possible human conceptual systems and the possible forms of reason are limited. In addition, once we have learned a conceptual system, it is neurally instantiated in our brains and we are not free to think just anything. Hence, we have no absolute freedom in Kant's sense, no full autonomy. There is no a priori, purely philosophical basis for a universal concept of morality and no transcendent,

universal pure reason that could give rise to universal moral laws.

The utilitarian person, for whom rationality is economic rationality-the maximization of utility-does not exist. Real human beings are not, for the most part, in conscious control of-or even consciously aware of-their reasoning. Most of their reason, besides, is based on various kinds of prototypes, framings, and metaphors. People seldom engage in a form of economic reason that could maximize utility.

The phenomenological person, who through phenomenological introspection alone can discover everything there is to know about the mind and the nature of experience, is a fiction. Although we can have a theory of a vast, rapidly and automatically operating cognitive unconscious, we have no direct conscious access to its operation and therefore to most of our thought. Phenomenological reflection, though valuable in revealing the structure of experience, must be supplemented by empirical research into the cognitive unconscious.

There is no poststructuralist person-no completely decentered subject for whom all meaning is arbitrary, totally relative, and purely historically contingent, unconstrained by body and brain. The mind is not merely embodied, but embodied in such a way that our conceptual systems draw largely upon the commonalities of our bodies and of the environments we live in. The result is that much of a person's conceptual system is either universal or widespread across languages and cultures. Our conceptual systems are not totally relative and not merely a matter of historical contingency, even though a degree of conceptual relativity does exist and even though historical contingency does matter a great deal. The grounding of our conceptual systems in shared embodiment and bodily experience creates a largely centered self, but not a monolithic self.

There exists no Fregean person-as posed by analytic philosophy-for whom thought has been extruded from the body. That is, there is no real person whose embodiment plays no role in meaning, whose meaning is purely objective and defined by the external world, and whose language can fit the external world with no significant role played by mind, brain, or body. Because our conceptual systems grow out of our bodies, meaning is grounded in and through our bodies. Because a vast range of our concepts are metaphorical, meaning is not entirely literal and the classical correspondence theory of truth is false. The correspondence theory holds that statements are true or false objectively, depending on how they map directly onto the world-independent of any human understanding of either the statement or the world. On the contrary, truth is mediated by embodied understanding and imagination. That does not mean that truth is purely subjective or that there is no stable truth. Rather, our common embodiment allows for common, stable truths.

There is no such thing as a computational person, whose mind is like computer software, able to work on any suitable computer or neural hardware whose mind somehow derives meaning from taking meaningless symbols as input, manipulating them by rule, and giving meaningless symbols as output. Real people have embodied minds whose conceptual systems arise from, are shaped by, and are given meaning through living human bodies. The neural structures of our brains produce conceptual systems and linguistic structures that cannot be adequately accounted

for by formal systems that only manipulate symbols.

Finally, there is no Chomskyan person, for whom language is pure syntax, pure form insulated from and independent of all meaning, context, perception, emotion, memory, attention, action, and the dynamic nature of communication. Moreover, human language is not a totally genetic innovation. Rather, central aspects of language arise evolutionarily from sensory, motor, and other neural systems that are present in "lower" animals.

Classical philosophical conceptions of the person have stirred our imaginations and taught us a great deal. But once we understand the importance of the cognitive unconscious, the embodiment of mind, and metaphorical thought, we can never go back to a priori philosophizing about mind and language or to philosophical ideas of what a person is that are inconsistent with what we are learning about the mind.

Given our new understanding of the mind, the question of what a human being is arises for us anew in the most urgent way.

Asking Philosophical Questions Requires Using Human Reason

If we are going to ask philosophical questions, we have to remember that we are human. As human beings, we have no special access to any form of purely objective or transcendent reason. We must necessarily use common human cognitive and neural mechanisms. Because most of our thought is unconscious, a priori philosophizing provides no privileged direct access to knowledge of our own mind and how our experience is constituted.

In asking philosophical questions, we use a reason shaped by the body, a cognitive unconscious to which we have no direct access, and metaphorical thought of which we are largely unaware. The fact that abstract thought is mostly metaphorical means that answers to philosophical questions have always been, and always will be, mostly metaphorical. In itself, that is neither good nor bad. It is simply a fact about the capacities of the human mind. But it has major consequences for every aspect of philosophy. Metaphorical thought is the principal tool that makes philosophical insight possible and that constrains the forms that philosophy can take.

Philosophical reflection, uninformed by cognitive science, did not discover, establish, and investigate the details of the fundamental aspects of mind we will be discussing. Some insightful philosophers did notice some of these phenomena, but lacked the empirical methodology to establish the validity of these results and to study them in fine detail. Without empirical confirmation, these facts about the mind did not find their way into the philosophical mainstream.

Jointly, the cognitive unconscious, the embodiment of mind, and metaphorical thought require not only a new way of understanding reason and the nature of a person. They also require a new understanding of one of the most common and natural of human activities-asking philosophical questions.

What Goes into Asking and Answering Philosophical Questions?

If you're going to reopen basic philosophical issues, here's the minimum you have to do. First, you need a method of investigation. Second, you have to use that method to understand basic philosophical concepts. Third, you have to apply that method to previous philosophies to understand what they are about and what makes them hang together. And fourth, you have to use that method to ask the big questions: What it is to be a person? What is morality? How do we understand the causal structure of the universe? And so on.

This book takes a small first step in each of these areas, with the intent of giving an overview of the enterprise of rethinking what philosophy can become. The methods we use come from cognitive science and cognitive linguistics. We discuss these methods in Part I of the book.

In Part II, we study the cognitive science of basic philosophical ideas. That is, we use these methods to analyze certain basic concepts that any approach to philosophy must address, such as time, events, causation, the mind, the self, and morality.

In Part III, we begin the study of philosophy itself from the perspective of cognitive science. We apply these analytic methods to important moments in the history of philosophy: Greek metaphysics, including the pre-Socratics, Plato, and Aristotle; Descartes's theory of mind and Enlightenment faculty psychology; Kant's moral theory; and analytic philosophy. These methods, we argue, lead to new and deep insights into these great intellectual edifices. They help us understand those philosophies and explain why, despite their fundamental differences, they have each seemed intuitive to many people over the centuries. We also take up issues in contemporary philosophy, linguistics, and the social sciences, in particular, Anglo-American analytic philosophy, Chomskyan linguistics, and the rational-actor model used in economics and foreign policy.

Finally, in Part IV, we summarize what we have learned in the course of this inquiry about what human beings are and about the human condition.

What emerges is a philosophy close to the bone. A philosophical perspective based on our empirical understanding of the embodiment of mind is a philosophy in the flesh, a philosophy that takes account of what we most basically are and can be.

The Cognitive Unconscious

Living a human life is a philosophical endeavor. Every thought we have, every decision we make, and every act we perform is based upon philosophical assumptions so numerous we couldn't possibly list them all. We go around armed with a host of presuppositions about what is real, what counts as knowledge, how the mind works, who we are, and how we should act. Such questions, which arise out of our daily concerns, form the basic subject matter of philosophy: metaphysics, epistemology, philosophy of mind, ethics, and so on.

Metaphysics, for example, is a fancy name for our concern with what is real. Traditional metaphysics asks questions that sound esoteric: What is essence? What is causation? What is time? What is the self? But in everyday terms there is nothing esoteric about such questions.

Take our concern with morality. Does morality consist of a set of absolute moral laws that come from universal reason? Or is it a cultural construct? Or neither? Are there unchanging universal moral values? Where does morality come from? Is it part of the essence of what it is to be a human being? Is there an essence of what it is to be a human being? And what, exactly, is an essence anyway?

Causation might appear to be another esoteric topic that only a philosopher could care about. But our moral and political commitments and actions presuppose implicit views on whether there are social causes and, if so, what they might be. Whenever we attribute moral or social responsibility, we are implicitly assuming the possibility of causation, as well as very specific notions of what a cause is.

Or take the self. Asking about the nature of the self might seem to be the ultimate in esoteric metaphysical speculation. But we cannot get through a day without relying on unconscious conceptions of the internal structure of the self. Have you taken a good look at yourself recently? Are you trying to find your "true self"? Are you in control of yourself? Do you have a hidden self that you are trying to protect or that is so awful you don't want anyone to know about it? If you have ever considered any matters of this sort, you have been relying on unconscious models of what a self is, and you could hardly live a life of any introspection at all without doing so.

Though we are only occasionally aware of it, we are all metaphysicians-not in some ivory-tower sense but as part of our everyday capacity to make sense of our experience. It is through our conceptual systems that we are able to make sense of everyday life, and our everyday metaphysics is embodied in those conceptual systems.

Cognitive science is the scientific discipline that studies conceptual systems. It is a relatively new discipline, having been founded in the 1970s. Yet in a short time it has made startling discoveries. It has discovered, first of all, that most of our thought is unconscious, not in the Freudian sense of being repressed, but in the sense that it operates beneath the level of cognitive awareness, inaccessible to consciousness and operating too quickly to be focused on.

Consider, for example, all that is going on below the level of conscious awareness when you are in a conversation. Here is only a small part of what you are doing, second by second:

Accessing memories relevant to what is being said

Comprehending a stream of sound as being language, dividing it into distinctive phonetic features and segments, identifying phonemes, and grouping them into morphemes

Assigning a structure to the sentence in accord with the vast number of grammatical constructions in your native language

Picking out words and giving them meanings appropriate to context

Making semantic and pragmatic sense of the sentences as a whole

Framing what is said in terms relevant to the discussion

Performing inferences relevant to what is being discussed

Constructing mental images where relevant and inspecting them

Filling in gaps in the discourse

Noticing and interpreting your interlocutor's body language

Anticipating where the conversation is going

Planning what to say in response

Cognitive scientists have shown experimentally that to understand even the simplest utterance, we must perform these and other incredibly complex forms of thought automatically and without noticeable effort below the level of consciousness. It is not merely that we occasionally do not notice these processes; rather, they are inaccessible to conscious awareness and control.

When we understand all that constitutes the cognitive unconscious, our understanding of the nature of consciousness is vastly enlarged. Consciousness goes way beyond mere awareness of something, beyond the mere experience of qualia (the qualitative senses of, for example, pain or color), beyond the awareness that you are aware, and beyond the multiple takes on immediate experience provided by various centers of the brain. Consciousness certainly involves all of the above plus the immeasurably vaster constitutive framework provided by the cognitive

unconscious, which must be operating for us to be aware of anything at all.

Why "Cognitive" Unconscious?

The term cognitive has two very different meanings, which can sometimes create confusion. In cognitive science, the term cognitive is used for any kind of mental operation or structure that can be studied in precise terms. Most of these structures and operations have been found to be unconscious. Thus, visual processing falls under the cognitive, as does auditory processing. Obviously, neither of these is conscious, since we are not and could not possibly be aware of each of the neural processes involved in the vastly complicated total process that gives rise to conscious visual and auditory experience. Memory and attention fall under the cognitive. All aspects of thought and language, conscious or unconscious, are thus cognitive. This includes phonology, grammar, conceptual systems, the mental lexicon, and all unconscious inferences of any sort. Mental imagery, emotions, and the conception of motor operations have also been studied from such a cognitive perspective. And neural modeling of any cognitive operation is also part of cognitive science.

Confusion sometimes arises because the term cognitive is often used in a very different way in certain philosophical traditions. For philosophers in these traditions, cognitive means only conceptual or propositional structure. It also includes rule-governed operations on such conceptual and propositional structures. Moreover, cognitive meaning is seen as truth-conditional meaning, that is, meaning defined not internally in the mind or body, but by reference to things in the external world. Most of what we will be calling the cognitive unconscious is thus for many philosophers not considered cognitive at all.

As is the practice in cognitive science, we will use the term cognitive in the richest possible sense, to describe any mental operations and structures that are involved in language, meaning, perception, conceptual systems, and reason. Because our conceptual systems and our reason arise from our bodies, we will also use the term cognitive for aspects of our sensorimotor system that contribute to our abilities to conceptualize and to reason. Since cognitive operations are largely unconscious, the term cognitive unconscious accurately describes all unconscious mental operations concerned with conceptual systems, meaning, inference, and language.

The Hidden Hand That Shapes Conscious Thought

The very existence of the cognitive unconscious, a fact fundamental to all conceptions of cognitive science, has important implications for the practice of philosophy. It means that we can have no direct conscious awareness of most of what goes on in our minds. The idea that pure philosophical reflection can plumb the depths of human understanding is an illusion. Traditional methods of philosophical analysis alone, even phenomenological introspection, cannot come close to allowing us to know our own minds.

There is much to be said for traditional philosophical reflection and phenomenological analysis. They can make us aware of many aspects of consciousness and, to a limited extent, can

enlarge our capacities for conscious awareness. Phenomenological reflection even allows us to examine many of the background prereflective structures that lie beneath our conscious experience. But neither method can adequately explore the cognitive unconscious—the realm of thought that is completely and irrevocably inaccessible to direct conscious introspection. It is this realm that is the primary focus of cognitive science, which allows us to theorize about the cognitive unconscious on the basis of evidence. Cognitive science, however, does not allow us direct access to what the cognitive unconscious is doing as it is doing it.

Conscious thought is the tip of an enormous iceberg. It is the rule of thumb among cognitive scientists that unconscious thought is 95 percent of all thought—and that may be a serious underestimate. Moreover, the 95 percent below the surface of conscious awareness shapes and structures all conscious thought. If the cognitive unconscious were not there doing this shaping, there could be no conscious thought.

The cognitive unconscious is vast and intricately structured. It includes not only all our automatic cognitive operations, but also all our implicit knowledge. All of our knowledge and beliefs are framed in terms of a conceptual system that resides mostly in the cognitive unconscious.

Our unconscious conceptual system functions like a "hidden hand" that shapes how we conceptualize all aspects of our experience. This hidden hand gives form to the metaphysics that is built into our ordinary conceptual systems. It creates the entities that inhabit the cognitive unconscious—abstract entities like friendships, bargains, failures, and lies—that we use in ordinary unconscious reasoning. It thus shapes how we automatically and unconsciously comprehend what we experience. It constitutes our unreflective common sense.

For example, let us return to our commonsense understanding of the self. Consider the common experience of struggling to gain control over ourselves. We not only feel this struggle within us, but conceptualize the "struggle" as being between two distinct parts of our self, each with different values. Sometimes we think of our "higher" (moral and rational) self struggling to get control over our "lower" (irrational and amoral) self.

Our conception of the self, in such cases, is fundamentally metaphoric. We conceptualize ourselves as split into two distinct entities that can be at war, locked in a struggle for control over our bodily behavior. This metaphoric conception is rooted deep in our unconscious conceptual systems, so much so that it takes considerable effort and insight to see how it functions as the basis for reasoning about ourselves.

Similarly, when you try to find your "true self," you are using another, usually unconscious metaphorical conceptualization. There are more than a dozen such metaphorical conceptions of the self, and we will discuss them below. When we consciously reason about how to gain mastery over ourselves, or how to protect our vulnerable "inner self," or how to find our "true self," it is the hidden hand of the unconscious conceptual system that makes such reasoning "common sense."

Metaphysics as Metaphor

A large part of this book will be devoted to exploring in detail what the hidden hand of our unconscious conceptual system looks like and how it shapes not only everyday commonsense reasoning but also philosophy itself. We will discuss some of the most basic of philosophical concepts, not only the self but also time, events, causation, essence, the mind, and morality. What is startling is that, even for these most basic of concepts, the hidden hand of the unconscious mind uses metaphor to define our unconscious metaphysics-the metaphysics used not just by ordinary people, but also by philosophers to make sense of these concepts. As we will see, what counts as an "intuitive" philosophical theory is one that draws upon these unconscious metaphors. In short, philosophical theories are largely the product of the hidden hand of the cognitive unconscious.

Throughout history it has been virtually impossible for philosophers to do metaphysics without such metaphors. For the most part, philosophers engaged in making metaphysical claims are choosing from the cognitive unconscious a set of existing metaphors that have a consistent ontology. That is, using unconscious everyday metaphors, philosophers seek to make a noncontradictory choice of conceptual entities defined by those metaphors; they then take those entities to be real and systematically draw out the implications of that choice in an attempt to account for our experience using that metaphysics.

Metaphysics in philosophy is, of course, supposed to characterize what is real-literally real. The irony is that such a conception of the real depends upon unconscious metaphors.

Empirically Responsible Philosophy: Beyond Naturalized Epistemology

For more than two thousand years, philosophy has defined metaphysics as the study of what is literally real. The weight of that tradition is so great that it is hardly likely to change in the face of empirical evidence against the tradition itself. Nevertheless that evidence, which comes from cognitive science, exists and raises deep questions not only about the project of philosophical metaphysics but also about the nature of philosophy itself.

Throughout most of our history, philosophy has seen itself as being independent of empirical investigation. It is that aspect of philosophy that is called into question by results in cognitive science. Through the study of the cognitive unconscious, cognitive science has given us a radically new view of how we conceptualize our experience and how we think.

Cognitive science-the empirical study of the mind-calls upon us to create a new, empirically responsible philosophy, a philosophy consistent with empirical discoveries about the nature of mind. This is not just old-fashioned philosophy "naturalized"-making minor adjustments, but basically keeping the old philosophical superstructure.

A serious appreciation of cognitive science requires us to rethink philosophy from the beginning, in a way that would put it more in touch with the reality of how we think. It would be

based on a detailed understanding of the cognitive unconscious, the hidden hand that shapes our conscious thought, our moral values, our plans, and our actions.

Unless we know our cognitive unconscious fully and intimately, we can neither know ourselves nor truly understand the basis of our moral judgments, our conscious deliberations, and our philosophy.