

Cognitive Systems And The Extended Mind

One of the most important research programmes in contemporary cognitive science is that of extended cognition, whereby features of a subject's cognitive environment can in certain conditions become constituent parts of the cognitive process itself. The aim of this volume is to explore the epistemological ramifications of this idea. The volume brings together a range of distinguished and emerging academics, from a variety of different perspectives, to investigate the very idea of an extended epistemology. The first part of the volume explores foundational issues with regard to an extended epistemology, including from a critical perspective. The second part of the volume examines the applications of extended epistemology and the new theoretical directions that it might take us. These include its ethical ramifications, its import to the epistemology of education and emerging digital technologies, and how this idea might dovetail with certain themes in Chinese philosophy.

This book identifies the 'cognitive humanities' with new approaches to literature and culture that engage with recent theories of the embodied mind in cognitive science. If cognition should be approached less as a matter of internal representation—a Cartesian inner theatre—than as a form of embodied action, how might cultural representation be rethought? What can literature and culture reveal or challenge about embodied minds? The essays in this book ask what new directions in the humanities open up when the thinking self is understood as a participant in contexts of action, even as extended beyond the skin. Building on cognitive literary studies, but engaging much more extensively with '4E' cognitive science (embodied, embedded, enactive, extended) than previously, the book uses case studies from many different historical settings (such as early modern theatre and digital technologies) and in different media (narrative, art, performance) to explore the embodied mind through culture.

This book demonstrates for the first time how the work of Ludwig Wittgenstein can transform 4E Cognitive Science. In particular, it shows how insights from Wittgenstein can empower those within 4E to reject the long held view that our minds must involve representations inside our heads. The book begins by showing how proponents of 4E are divided amongst themselves. Proponents of Extended Mind insist that internal representations are always needed to explain the human mind. However, proponents of Enacted Mind reject this claim. Using insights from Ludwig Wittgenstein, the book introduces and defends a new theoretical framework called Structural Enacted or Extended Mind (STEEM). STEEM brings together Enacted Mind and Extended Mind in a way that rejects all talk of internal representations. STEEM thus highlights the anti-representationalist credentials of 4E and so demonstrates how 4E can herald a new beginning when it comes to thinking about the mind.

A proposal for a new way to do cognitive science argues that cognition should be described in terms of agent-environment dynamics rather than computation and representation. While philosophers of mind have been arguing over the status of mental representations in cognitive science, cognitive scientists have been quietly engaged in studying perception, action, and cognition without explaining them in terms of mental representation. In this book, Anthony Chemero describes this nonrepresentational approach (which he terms radical embodied cognitive science), puts it in historical and conceptual context, and applies it to traditional problems in the philosophy of mind. Radical embodied cognitive science is a direct descendant of the American naturalist psychology of William James and John Dewey, and follows them in viewing perception and cognition to be understandable only in terms of action in the environment. Chemero argues that cognition should be described in terms of agent-environment dynamics rather than in terms of computation and representation. After outlining this orientation to cognition, Chemero proposes a methodology: dynamical systems theory, which would explain things dynamically and without reference to representation. He also advances a background theory: Gibsonian ecological psychology, "shored up" and clarified. Chemero then looks at some traditional philosophical problems (reductionism, epistemological skepticism, metaphysical realism, consciousness) through the lens of radical embodied cognitive science and concludes that the comparative ease with which it resolves these problems, combined with its empirical promise, makes this approach to cognitive science a rewarding one. "Jerry Fodor is my favorite philosopher," Chemero writes in his preface, adding, "I think that Jerry Fodor is wrong about nearly everything." With this book, Chemero explains nonrepresentational, dynamical, ecological cognitive science as clearly and as rigorously as Jerry Fodor explained computational cognitive science in his classic work *The Language of Thought*.

The Renaissance Extended Mind

Socially Extended Epistemology

The Oxford Handbook of Philosophy and Neuroscience

Radical Embodied Cognitive Science

Meditation, Buddhism, and Science

The Renaissance Extended Mind explores the parallels and contrasts between current philosophical notions of the mind as extended across brain, body and world, and analogous notions in literary, philosophical, and scientific texts circulating between the fifteenth century and early-seventeenth century.

An argument for a non-Cartesian philosophical foundation for cognitive science that combines elements of Heideggerian phenomenology, a dynamical systems approach to cognition, and insights from artificial intelligence-related robotics.

The book focuses on a conceptual flaw in contemporary artificial intelligence and cognitive science. Many people have discovered diverse manifestations and facets of this flaw, but the central conceptual impasse is at best only partially perceived. Its consequences, nevertheless, visit themselves as distortions and failures of multiple research projects - and make impossible the ultimate aspirations of the fields. The impasse concerns a presupposition concerning the nature of representation - that all representation has the nature of encodings: encodingism. Encodings certainly exist, but encodingism is at root logically

incoherent; any programmatic research predicted on it is doomed to distortion and ultimate failure. The impasse and its consequences - and steps away from that impasse - are explored in a large number of projects and approaches. These include SOAR, CYC, PDP, situated cognition, subsumption architecture robotics, and the frame problems - a general survey of the current research in AI and Cognitive Science emerges. Interactivism, an alternative model of representation, is proposed and examined. This 2006 book explores how people's subjective, felt experiences of their bodies in action provide part of the fundamental grounding for human cognition and language. Cognition is what occurs when the body engages the physical and cultural world and must be studied in terms of the dynamical interactions between people and the environment. Human language and thought emerge from recurring patterns of embodied activity that constrain ongoing intelligent behavior. We must not assume cognition to be purely internal, symbolic, computational, and disembodied, but seek out the gross and detailed ways that language and thought are inextricably shaped by embodied action. Embodiment and Cognitive Science describes the abundance of empirical evidence from many disciplines, including work on perception, concepts, imagery and reasoning, language and communication, cognitive development, and emotions and consciousness, that support the idea that the mind is embodied.

A New Perspective in the Cognitive Science of Attention and Action

Cognitive Integration

Mind, Body, World

Foundational Issues in Artificial Intelligence and Cognitive Science

The New Science of the Mind

Socially Extended Epistemology explores the epistemological ramifications of one of the most important research programmes in contemporary cognitive science: distributed cognition. In certain conditions, according to this programme, groups of people can generate distributed cognitive systems that consist of all participating members. This volume brings together a range of distinguished and early career academics, from a variety of different perspectives, to investigate the very idea of socially extended epistemology. They ask, for example: can distributed cognitive systems generate knowledge in a similar way to individuals? And if so, how, if at all, does this kind of knowledge differ from normal, individual knowledge? The first part of the volume examines foundational issues, including from a critical perspective. The second part of the volume turns to applications of this idea, and the new theoretical directions that it might take us. These include the ethical ramifications of socially extended epistemology, its societal impact, and its import for emerging digital technologies.

Brain, body, and world are united in a complex dance of circular causation and extended computational activity. In *Being There*, Andy Clark weaves these several threads into a pleasing whole and goes on to address foundational questions concerning the new tools and techniques needed to make sense of the emerging sciences of the embodied mind. Clark brings together ideas and techniques from robotics, neuroscience, infant psychology, and artificial intelligence. He addresses a broad range of adaptive behaviors, from cockroach locomotion to the role of linguistic artifacts in higher-level thought.

Cognitive Information Systems in Management Sciences summarizes the body of work in this area, taking an analytical approach to interpreting the data, while also providing an approach that can be used for practical implementation in the fields of computing, economics, and engineering. Using numerous illustrative examples, and following both theoretical and practical results, Dr. Lidia Ogiela discusses the concepts and principles of cognitive information systems, the relationship between intelligent computer data analysis, and how to utilize computational intelligent approaches to enhance information retrieval. Real world implantation use cases round out the book, with valuable scenarios covering management science, computer science, and engineering. Indexing: The books of this series are submitted to EI-Compendex and SCOPUS Discusses the basic concepts and principles in cognitive information systems, providing 'real-world' implementation examples Explains the relationship between intelligent computer data analysis and how to utilize computational intelligent approaches to enhance information retrieval Provides a unified structured approach that can be used to develop information flow in cognitive management systems

Cognitive Systems - Information Processing Meets Brain Science presents an overview of the exciting, truly multidisciplinary research by neuroscientists and systems engineers in the emerging field of cognitive systems, providing a cross-disciplinary examination of this cutting-edge area of scientific research. This is a great example of where research in very different disciplines touches to create a new emerging area of research. The book illustrates some of the technical developments that could arise from our growing understanding of how living cognitive systems behave, and the ability to use that knowledge in the design of artificial systems. This unique book is of considerable interest to researchers and students in information science, neuroscience, psychology, engineering and adjacent fields. Represents a remarkable collection of relevant experts from both the life sciences and computer science Includes state-of-the-art reviews of topics in cognitive systems from both a life sciences and a computer science perspective Discusses the impact of this research on our lives in the near future

A Primer

The Extended Mind

From Extended Mind to Embodied Phenomenology

The Cambridge Handbook of Cognitive Science

The Cognitive Humanities

Cognitive science arose in the 1950s when it became apparent that a number of disciplines, including psychology, computer science, linguistics, and philosophy, were fragmenting. Perhaps owing to the field's immediate origins in cybernetics, as well as to the foundational assumption that cognition is information processing, cognitive science initially seemed more unified than psychology. However, as a result of differing interpretations of the foundational assumption and dramatically divergent views of the meaning of the term information processing, three separate schools emerged: classical cognitive science, connectionist cognitive science, and embodied cognitive science.

Examples, cases, and research findings taken from the wide range of phenomena studied by cognitive scientists effectively explain and explore the relationship among the three perspectives. Intended to introduce both graduate and senior undergraduate students to the foundations of cognitive science, *Mind, Body, World* addresses a number of questions currently being asked by those practicing in the field: What are the core assumptions of the three different schools? What are the relationships between these different sets of core assumptions? Is there only one cognitive science, or are there many different cognitive sciences? Giving the schools equal treatment and displaying a broad and deep understanding of the field, Dawson highlights the fundamental tensions and lines of fragmentation that exist among the schools and provides a refreshing and unifying framework for students of cognitive science. Michael R. W. Dawson is a professor of psychology at the University of Alberta. He is the author of numerous scientific papers as well as the books *Understanding Cognitive Science* (1998), *Minds and Machines* (2004), *Connectionism: A Hands-on Approach* (2005), and *From Bricks to Brains: The Embodied Cognitive Science of LEGO Robots* (2010).

Cognitive Systems and the Extended Mind surveys philosophical issues raised by the situated movement in cognitive science, that is, the treatment of cognitive phenomena as the joint products of brain, body, and environment. This edited volume focuses on the hypothesis that performativity is not a property confined to certain specific human skills, or to certain specific acts of language, nor an accidental enrichment due to creative intelligence. Instead, the executive and motor component of cognitive behavior should be considered an intrinsic part of the physiological functioning of the mind, and as endowed with self-generative power. Performativity, in this theoretical context, can be defined as a constituent component of cognitive processes. The material action allowing us to interact with reality is both the means by which the subject knows the surrounding world and one through which he experiments with the possibilities of his body. This proposal is rooted in models now widely accepted in the philosophy of mind and language; in fact, it focuses on a space of awareness that is not in the individual, or outside it, but is determined by the species-specific ways in which the body acts on the world. This theoretical hypothesis will be pursued through the latest interdisciplinary methodology typical of cognitive science, that coincide with the five sections in which the book is organized: Embodied, enactivist, philosophical approaches; Aesthetics approaches; Naturalistic and evolutionary approaches; Neuroscientific approaches; Linguistics approaches. This book is intended for: linguists, philosophers, psychologists, cognitive scientists, scholars of art and aesthetics, performing artists, researchers in embodied cognition, especially enactivists and students of the extended mind.

4E cognition (embodied, embedded, enactive, and extended) is a relatively young and thriving field of interdisciplinary research. It assumes that cognition is shaped and structured by dynamic interactions between the brain, body, and both the physical and social environments. With essays from leading scholars and researchers, *The Oxford Handbook of 4E Cognition* investigates this recent paradigm. It addresses the central issues of embodied cognition by focusing on recent trends, such as Bayesian inference and predictive coding, and presenting new insights, such as the development of false belief understanding. *The Oxford Handbook of 4E Cognition* also introduces new theoretical paradigms for understanding emotion and conceptualizing the interactions between cognition, language, and culture. With an entire section dedicated to the application of 4E cognition in disciplines such as psychiatry and robotics, and critical notes aimed at stimulating discussion, this Oxford handbook is the definitive guide to 4E cognition. Aimed at neuroscientists, psychologists, psychiatrists, and philosophers, *The Oxford Handbook of 4E Cognition* will be essential reading for anyone with an interest in this young and thriving field.

Being There

Putting Brain, Body, and World Together Again

The Oxford Handbook of 4E Cognition

Cognition in the Wild

Reconstructing the Cognitive World

The philosophy of cognitive science is concerned with fundamental philosophical and theoretical questions connected to the sciences of the mind. How does the brain give rise to conscious experience? Does speaking a language change how we think? Is a genuinely intelligent computer possible? What features of the mind are innate? Advances in cognitive science have given philosophers important tools for addressing these sorts of questions; and cognitive scientists have, in turn, found themselves drawing upon insights from philosophy—insights that have often taken their research in novel directions. *The Oxford Handbook of Philosophy of Cognitive Science* brings together twenty-one newly commissioned chapters by leading researchers in this rich and fast-growing area of philosophy. It is an indispensable resource for anyone who seeks to understand the implications of cognitive science for philosophy, and the role of philosophy within cognitive science.

Articulates and defends a theory of the mark of the cognitive, an approach to cognitive science that differentiates between cognitive and non-cognitive processes. Addressing the limits of the embodied mind, the mark of the cognitive is an alternative approach to extended cognition whose advocates argue that cognitive processing is not brain bound.

In recent decades cognitive science has revolutionised our understanding of the workings of the human mind. Philosophy has made a major contribution to cognitive science and has itself been hugely influenced by its development. This dynamic book explores the philosophical significance of cognitive science and examines the central debates that have enlivened its history. In a wide-ranging and comprehensive account of the topic, philosopher M.J. Cain discusses the historical origins of cognitive science and its philosophical underpinnings; the nature and role of representations in cognition; the architecture of the mind and the modularity thesis; the nature of concepts; knowledge of language and its acquisition; perception; and the relationship between the brain and cognition. Cain draws upon an extensive knowledge of empirical developments and their philosophical interpretation. He argues that although the field has generated some challenging new views in recent

years, many of the core ideas that initiated its birth are still to be taken seriously. Clearly written and incisively argued, The Philosophy of Cognitive Science will appeal to any student or researcher interested in the workings of the mind.

In this book the authors present current developments in the study of cognitive systems research. Topics discussed in this compilation include the theory of everything cognitive, from neurons to extended cognition; cognitive systems associated with the hippo-campus of the human brain and their role in behavior and neurodegenerative disease; the evolution of frames in information systems development; and prospective fields of applied cognitive systems research

Action, Perception and the Brain

Cognitive Information Systems in Management Sciences

Feeling Extended

The Philosophy of Cognitive Science

Extended Epistemology

Andy Clark is a leading philosopher of cognitive science, whose work has had an extraordinary impact throughout philosophy, psychology, neuroscience, and robotics. His monographs have led the way for new research programs in the philosophy of mind and cognition: Microcognition (1989) and Associative Engines (1993) introduced the philosophical community to connectionist research and the novel issues it raised; Being There (1997) showed the relevance of embodiment, dynamical systems theory, and minimal computation frameworks for the study of the mind; Natural Born Cyborgs (OUP 2003) presented an accessible development of embodied and embedded approaches to understanding human nature and cognition; Supersizing the Mind (OUP 2008) developed this yet further along with the famous "Extended Mind" hypothesis; and Surfing Uncertainty (OUP 2017) presents a framework for uniting perception, action, and the embodied mind. In Andy Clark and His Critics, a range of high-profile researchers in philosophy of mind, philosophy of cognitive science, and empirical cognitive science, critically engage with Clark's work across the themes of: Extended, Embodied, Embedded, Enactive, and Affective Minds; Natural Born Cyborgs; and Perception, Action, and Prediction. Daniel Dennett provides a foreword on the significance of Clark's work, and Clark replies to each section of the book, thus advancing current literature with original contributions that will form the basis for new discussions, debates and directions in the discipline.

The scientific study of Buddhist forms of meditation has surged in recent years, capturing the popular imagination and reshaping conceptions of what meditation is and what it can do. For perhaps the first time in history, meditation has shifted from Buddhist monasteries and practice centers to some of the most prominent and powerful modern institutions in the world, as well as non-institutional settings. As their contexts change, so do the practices—sometimes drastically. New ways of thinking about meditation are emerging as it moves toward more secular settings, ways that profoundly affect millions of lives all over the world. To understand these changes and their effects, the essays in this volume explore the unaddressed complexities in the interrelations between Buddhist history and thought and the scientific study of meditation. The contributors bring philosophical, cultural, historical, and ethnographic perspectives to bear, considering such issues as the philosophical presuppositions behind practice, the secularization of meditation, the values and goods assumed in clinical approaches, and the sorts of subjects that take shape under the influence of these transformed and transformative practices—all the more powerful for being so often formulated with the authority of scientific discourse.

A concise introduction to a complex field, bringing together recent work in cognitive science and cognitive robotics to offer a solid grounding on key issues. This book offers a concise and accessible introduction to the emerging field of artificial cognitive systems. Cognition, both natural and artificial, is about anticipating the need for action and developing the capacity to predict the outcome of those actions. Drawing on artificial intelligence, developmental psychology, and cognitive neuroscience, the field of artificial cognitive systems has as its ultimate goal the creation of computer-based systems that can interact with humans and serve society in a variety of ways. This primer brings together recent work in cognitive science and cognitive robotics to offer readers a solid grounding on key issues. The book first develops a working definition of cognitive systems—broad enough to encompass multiple views of the subject and deep enough to help in the formulation of theories and models. It surveys the cognitivist, emergent, and hybrid paradigms of cognitive science and discusses cognitive architectures derived from them. It then

turns to the key issues, with chapters devoted to autonomy, embodiment, learning and development, memory and prospection, knowledge and representation, and social cognition. Ideas are introduced in an intuitive, natural order, with an emphasis on the relationships among ideas and building to an overview of the field. The main text is straightforward and succinct; sidenotes drill deeper on specific topics and provide contextual links to further reading.

This book argues that thinking is bounded by neither the brain nor the skin of an organism. Cognitive systems function through integration of neural and bodily functions with the functions of representational vehicles. The integrationist position offers a fresh contribution to the emerging embodied and embedded approach to the study of mind.

Cognitive Systems - Information Processing Meets Brain Science

The Oxford Handbook of Philosophy of Cognitive Science

Effortless Attention

4E Cognitive Science and Wittgenstein

Artificial Cognitive Systems

Theories of brain evolution stress communication and sociality are essential to our capacity to represent objects as intersubjectively accessible. How did we grow as a species to be able to recognize objects as common, as that which can also be seen in much the same way by others? Such constitution of intersubjectively accessible objects is bound up with our flexible and sophisticated capacities for social cognition understanding others and their desires, intentions, emotions, and moods which are crucial to the way human beings live. This book is about contemporary philosophical and neuroscientific perspectives on the relation of action, perception, and cognition as it is lived in embodied and socially embedded experience. This emphasis on embodiment and embeddedness is a change from traditional theories, which focused on isolated, representational, and conceptual cognition. In the new perspectives contained in our book, such 'pure' cognition is thought to be under-girded and interpenetrated by embodied and embedded processes. When historian Charles Weiner found pages of Nobel Prize-winning physicist Richard Feynman's notes, he saw it as a "record" of Feynman's work. Feynman himself, however, insisted that the notes were not a record but the work itself. In *Supersizing the Mind*, Andy Clark argues that our thinking doesn't happen only in our heads but that "certain forms of human cognizing include inextricable tangles of feedback, feed-forward and feed-around loops: loops that promiscuously criss-cross the boundaries of brain, body and world." The pen and paper of Feynman's thought are just such feedback loops, physical machinery that shape the flow of thought and enlarge the boundaries of mind. Drawing upon recent work in psychology, linguistics, neuroscience, artificial intelligence, robotics, human-computer systems, and beyond, *Supersizing the Mind* offers both a tour of the emerging cognitive landscape and a sustained argument in favor of a conception of mind that is extended rather than "brain-bound." The importance of this new perspective is profound. If our minds themselves can include aspects of our social and physical environments, then the kinds of social and physical environments we create can reconfigure our minds and our capacity for thought and reason.

*Cognitive Systems and the Extended Mind*Oxford University Press

The phenomena of effortless attention and action and the challenges they pose to current cognitive models of attention and action.

From Bodily Intersubjectivity to Symbolic Articulation

New Developments in Cognitive Systems Research

Impasse and Solution

Embodied Mind in Literature and Culture

Adaptation and Cephalic Expression

Edwin Hutchins combines his background as an anthropologist and an open ocean racing sailor and navigator in this account of how anthropological methods can be combined with cognitive theory to produce a new reading of cognitive science. His theoretical insights are grounded in an extended analysis of ship navigation—its computational basis, its historical roots, its social organization, and the details of its implementation in actual practice aboard large ships. The result is an unusual interdisciplinary approach to cognition in culturally constituted activities outside the laboratory—"in the wild." Hutchins examines a set of phenomena that have fallen in the cracks between the established disciplines of psychology and anthropology, bringing to light a new set of relationships between culture and cognition. The standard view is that culture affects the cognition of individuals. Hutchins argues instead that cultural activity systems have cognitive properties of their own that are different from the cognitive properties of the individuals who participate in them. Each action for bringing a large naval vessel into port, for example, is informed by culture: the navigation team can be seen as a cognitive and computational system. Introducing Navy life and work on the bridge, Hutchins makes a clear distinction between the cognitive properties of an individual and the cognitive properties of a system. In striking contrast to the usual laboratory tasks of research in cognitive science, he applies the principal metaphor of cognitive science—cognition as computation (adopting David Marr's paradigm)—to the navigation task. After comparing modern Western navigation with the method practiced in Micronesia, Hutchins explores the computational and cognitive properties of systems that are larger than an individual. He then turns to an analysis of learning or change in the organization of cognitive systems at several scales. Hutchins's conclusion illustrates the costs of ignoring the cultural nature of cognition, pointing to the ways in which

contemporary cognitive science can be transformed by new meanings and interpretations. A Bradford Book

An authoritative, up-to-date survey of the state of the art in cognitive science, written for non-specialists.

This title is a collection of interdisciplinary research from contributors including both philosophers and neuroscientists. Topics covered include the neurobiology of learning and memory perception and sensation, neurocomputational modelling neuroanatomy, neuroethics, and neurology and clinical neuropsychology.

An alarming number of philosophers and cognitive scientists have argued that mind extends beyond the brain and body. This book evaluates these arguments and suggests that, typically, it does not. A timely and relevant study that exposes the need to develop a more sophisticated theory of cognition, while pointing to a bold new direction in exploring the nature of cognition Articulates and defends the "mark of the cognitive", a common sense theory used to distinguish between cognitive and non-cognitive processes Challenges the current popularity of extended cognition theory through critical analysis and by pointing out fallacies and shortcoming in the literature Stimulates discussions that will advance debate about the nature of cognition in the cognitive sciences

The Next Step

Sociality as Extended Body-Becoming-Mind

Cognitive Systems and the Extended Mind

Supersizing the Mind

Mind and Cognition Unbounded

An investigation into the conceptual foundations of a new way of thinking about the mind that does not locate all cognition "in the head." There is a new way of thinking about the mind that does not locate mental processes exclusively "in the head." Some think that this expanded conception of the mind will be the basis of a new science of the mind. In this book, leading philosopher Mark Rowlands investigates the conceptual foundations of this new science of the mind. The new way of thinking about the mind emphasizes the ways in which mental processes are embodied (made up partly of extraneural bodily structures and processes), embedded (designed to function in tandem with the environment), enacted (constituted in part by action), and extended (located in the environment). The new way of thinking about the mind, Rowlands writes, is actually an old way of thinking that has taken on new form. Rowlands describes a conception of mind that had its clearest expression in phenomenology—in the work of Husserl, Heidegger, Sartre, and Merleau-Ponty. He builds on these views, clarifies and renders consistent the ideas of embodied, embedded, enacted, and extended mind, and develops a unified philosophical treatment of the novel conception of the mind that underlies the new science of the mind.

This book endeavors to fill the conceptual gap in theorizing about embodied cognition. The theories of mind and cognition which one could generally call "situated" or "embodied cognition" have gained much attention in the recent decades. However, it has been mostly phenomenology (Heidegger, Merleau-Ponty, etc.), which has served as a philosophical background for their research program. The main goal of this book is to bring the philosophy of classical American pragmatism firmly into play. Although pragmatism has been arguably the first intellectual current which systematically built its theories of knowledge, mind and valuation upon the model of a bodily interaction between an organism and its environment, as the editors and authors argue, it has not been given sufficient attention in the debate and, consequently, its conceptual resources for enriching the embodied mind project are far from being exhausted. In this book, the authors propose concrete subject-areas in which the philosophy of pragmatism can be of help when dealing with particular problems the philosophy of the embodied mind nowadays faces - a prominent example being the inevitable tension between bodily situatedness and the potential universality of symbolic meaning.

Leading scholars respond to the famous proposition by Andy Clark and David Chalmers that cognition and mind are not located exclusively in the head.

A new view of the extended mind thesis argues that a stark binary opposition between really extending and seeming to extend oversimplifies the issue.

Foundations of Cognitive Science

Interdisciplinary Approaches to Performativity

Andy Clark and His Critics

Embodiment and Cognitive Science