

Consciousness Is Motor: Warp and Weft in William James

Alexander Klein, McMaster University

Kleina7@mcmaster.ca

Nothing is easier than to familiarize one's self with the mammalian brain. Get a sheep's head, a small saw, chisel, scalpel and forceps (all three can best be had from a surgical-instrument maker), and unravel its parts either by the aid of a human dissecting book, such as Holden's *Manual of Anatomy*, or by the specific directions *ad hoc* given in such books as Foster and Langley's *Practical Physiology* (Macmillan) or Morrell's *Comparative Anatomy, and Guide to Dissection* (Longman &Co.).

(PP 1890, 24.n)

Contents

Preface

Chapter 1: Introduction

Part 1: Jame's Background, Biographical and Methodological

Chapter 2: Biographical

Chapter 3: Methodological

Part 2: The Evolutionary-Physiology of Consciousness

Chapter 4: Frogs

Chapter 5: Consciousness

Chapter 6: Against Epiphenomenalism

Part 3: Willing, Acting, and Meaning

Chapter 7: Will

Chapter 8: Against Trying

Chapter 9: Unity and Aboutness

Primary Sources

References to *The Works of William James* follow these conventions:

<u>Title</u>	<u>Abbreviation</u>
<i>Pragmatism</i>	P 1907
<i>The Meaning of Truth</i>	MT 1909
<i>Essays in Radical Empiricism</i>	ERE yyyy
<i>A Pluralistic Universe</i>	PU 1909
<i>Essays in Philosophy</i>	EPh yyyy
<i>The Will to Believe</i>	WB 1897
<i>Some Problems of Philosophy</i>	SPP 1911
<i>The Principles of Psychology</i>	PP 1890
<i>Essays in Religion and Morality</i>	ERM yyyy
<i>Talks to Teachers on Psychology</i>	TTP 1899
<i>Essays in Psychology</i>	EPs yyyy
<i>Psychology: Briefer Course</i>	PBC 1892
<i>The Varieties of Religious Experience</i>	VRE 1902
<i>Essays in Psychical Research</i>	EPR yyyy
<i>Essays, Comments, and Reviews</i>	ECR yyyy
<i>Manuscript Essays and Notes</i>	MEN yyyy
<i>Manuscript Lectures</i>	ML yyyy

For books originally published during James's lifetime, plus SPP, references include the year the work originally appeared (as above). For all other posthumous collections, references include the year that the cited item in the collection was originally published or composed (in lieu of "yyyy," above).

References to *The Correspondence of William James* follow this convention, where "yyyy" is the year the cited letter was composed, "v" is the volume number in which the letter appears, and "p" is a page range in the cited volume:

CWJ yyyy, v.p

Publication details for James's *Works* and *Correspondence* are as follows:

James, William. 1890/1981. *The Principles of Psychology*. Edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.

- James, William. 1892/1984. *Psychology: Briefer Course*. Edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1897/1979. *The Will to Believe, and Other Essays in Popular Philosophy*. Edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1902/1985. *The Varieties of Religious Experience*. Edited by Frederick Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1907/1975. *Pragmatism*. Edited by Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1909/1977. *A Pluralistic Universe*. Edited by Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1909/1978. *The Meaning of Truth*. Edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge, MA: Harvard University Press.
- James, William. 1911/1979. *Some Problems of Philosophy*. Edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1912/1976. *Essays in Radical Empiricism*. Edited by Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1978. *Essays in Philosophy*. Edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1982. *Essays in Religion and Morality*. Edited by Frederick Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1983a. *Essays in Psychology*. Edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1983b. *Talks to Teachers on Psychology and to Students on Some of Life's Ideals*. Edited by Frederick Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1987. *Essays, Comments, and Reviews*. Edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1988a. *Manuscript Essays and Notes*. Edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.

- James, William. 1988b. *Manuscript Lectures*. Edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge: Harvard University Press.
- James, William. 1992-2004. *The Correspondence of William James*. Edited by Ignas K. Skrupskelis and Elizabeth M. Berkeley. 12 vols. Charlottesville: University Press of Virginia.

Preface

Consciousness remains a topic of intense scientific and philosophical interest. Although William James is often regarded as a spiritual father of cognitive psychology, including what has come to be called consciousness science, the details of his own work on the topic, surprisingly, remain neglected. I hope this book might help revivify interest in James's peculiar way of making sense of this perplexing subject.

I have tried to bring alive some key historical episodes in hopes of enticing more technically-minded readers to take account of the actual conversations out of which James's work in fact emerged—conversations that were carried on, like all conversations, in their own specific time and place. These conversations are a resource for clarifying the intent behind James's colorful but sometimes enigmatic language.

But I have also tried to ask more technical questions of the positions James staked out, sometimes using conceptual resources to which James himself did not have access. This is because I believe that his work represents a promising path that was ultimately not taken.

The earlier chapters are heavier in narrative history, which some professional philosophers and psychologists may find distracting. The later chapters emphasize more technical analysis, which those with more purely historical interests may find anachronistic. Perhaps my vacillating approach is a defect. But I think we can listen to what historical figures have to say when they speak in their own language, even while we interrogate them in our own.

Alexander Klein
Belfountain, Ontario
2021

One

Introduction

All consciousness is motor. The reader will not have forgotten, in the jungle of purely inward processes and products through which the last chapters have borne him, that the final result of them all must be some form of bodily activity due to the escape of the central excitement through outgoing nerves. The whole neural organism, it will be remembered, is, physiologically considered, but a machine for converting stimuli into reactions; and the intellectual part of our life is knit up with but the middle or 'central' part of the machine's operations. (PBC 1892, 321)

1. What This Book Is About

William James was an acknowledged master of phenomenological description. We owe him some instantly recognizable figures that continue to crop up when we talk about consciousness: the newborn's mental life as a "blooming, buzzing confusion"; our experience of time as involving a "specious present"; the distinction between the "fringe" and the "nucleus" of a mental state; and of course our "stream of consciousness" that is "nothing jointed; it flows" (PP 1890, 462, 573, 454, 233).¹

¹ James credited one E. R. Clay with coining the phrase "the specious present." Clay was the pen name of an obscure cigar-salesman and amateur philosopher named E. Robert Kelly (Andersen and Grush 2009, 295). On the provenance of the phrase "stream of consciousness," see below, p. XXX.

Perhaps unsurprisingly then, his work on consciousness is chiefly remembered for its answers to what Van Gulick has more recently called “the descriptive question” (Van Gulick 2018). This is the question of how best to describe the basic phenomenology of consciousness itself, from a first-person perspective, and articulating such a phenomenology has often been portrayed as the ultimate aim of James’s 1890 magnum opus, *The Principles of Psychology*. Even sympathetic readers are apt to describe that work as “armchair psychology” (Evans 1990a, 28, Prinz, Dennett, and Sebanz 2006, 5).²

That familiar portrayal is misleading.³ If James’s account of mind is a tapestry, then his phenomenological descriptions are the colorful weft yarns. But a tapestry cannot be woven from weft yarns alone. A weaver produces a pattern by lacing the weft yarns over and under warp threads that have been arranged on the loom, and that provide the fabric’s structure. James’s tapestry has warp threads, too. The warp threads are third-person data drawn especially from physiological experiment and clinical observation.

² The term “armchair psychology” traces back to E. W. Scripture in 1895, and it came to be used as a rallying cry for those who wanted to restrict psychology to the laboratory (Klein 1942, 227). Sexton notes that the term has long been turned against James, even though James was himself a pioneer of the “new” psychology (Sexton 1978, 6). More recent commentators like Rand Evans and Wolfgang Prinz (*op. cit.*) apparently accept the label for James, but not the derogatory connotation.

³ There are a great variety of readings that, in my view, overemphasize the role of phenomenological description and/or underplay the role of third-person observation in James’s psychology. Some have claimed that for James, descriptive phenomenology was importantly privileged or prioritized over third-person experimentation, while others have gone so far as to suggest that he saw third person experiment as close to useless. Without attempting to catalog the wide range of approaches that share either of these attitudes, some examples can be found at (Boring 1953, 170, Evans 1990a, b, 435 – 36, Flanagan 1984/1991, 25, Lyons 1986, 6 – 10, Seigfried 1990a, 119, 1990b, 12, 51, 54, Wilshire 1968, esp. chs. 1, 2, and 5; RBP 1935, II.24).

This book investigates James’s account of consciousness, with a particular emphasis on showing how the warp threads structure his tapestry. He regarded introspection as hugely useful, but nevertheless fallible (EPs 1884, 142 – 143), and he used third-person streams of evidence to underwrite crucial inferences from descriptions of his own phenomenology to potentially more objective claims about the nature of all consciousness.

What emerges when we keep both warp and weft in view is an account of consciousness that is *theoretically, methodologically, and historically* interesting. From a theoretical standpoint, James was addressing two basic questions, on my reading: how consciousness works, and why. The first question is about the physiological role consciousness might be playing in initiating or mediating observable behavior (that’s the “how”). The second question is about the evolutionary function consciousness might serve if it typically plays this hypothesized physiological role (that’s the “why”).⁴

In a nutshell, here is how he answered these questions. James contended that consciousness enables organisms to *value*⁵ objects and potential actions, and

⁴ I use “evolutionary function” as a synonym for a trait’s etiological function—for the task in virtue of whose accomplishment the trait conferred a survival advantage and thereby proliferated in a population. I will sometimes write that a trait “is an adaptation for” x, meaning that x is the trait’s evolutionary function. I use “physiological role” or “function” to mean the causal impact a trait characteristically has in generating or mediating bodily change.

⁵ Throughout the book I will be using a loosely Deweyan term in connection with James’s idea that consciousness both creates and responds to value, like the “judge” who “makes the law while announcing it” (EPs 1879, 45). Dewey would later criticize philosophers who fail to distinguish two different activities we perform with respect to value: *ascribing* value and *appraising* it. He hatched the term “valuation” to cover both senses (Anderson 2019), writing:

I am convinced that contemporary discussion of values and valuation suffers from confusion of the two radically different attitudes—that of direct, active, non-cognitive experience of goods and bads and that of valuation, the latter being simply a mode of judgment like any other form of judgment, differing in that its subject-matter happens to be a good or a bad instead of a horse or planet or curve. But unfortunately for discussions, “to value” means two

(with the aid of volition) to *act* in light of those valuations. That is the *how-it-works* of consciousness—it is incessantly valuating objects and potential actions, allowing creatures to decouple their sensory barrage from what might otherwise be hyperactive, mechanical responses to every input.

And James hypothesized that a valuating consciousness might be a Darwinian⁶ adaptation for behavior regulation, a task that is particularly pressing (James argued) for creatures with highly articulated brains. Behavior regulation is the *why-we-have-it* of consciousness, according to his evolutionary story.

What evidence did he offer for these views? James proposed these two hypotheses as inferences to the best explanation—in particular, as a way to explain some puzzling vivisection results, as we will see.⁷ This approach is methodologically interesting for the abductive way it weaves first- and third-person data together in the study of mind. James was effectively proposing introspectively-informed hypotheses about consciousness that, *if true, would*

radically different things: to prize and appraise; to esteem and to estimate: to find good . . . , and to judge it to be good, to *know* it as good. I call them radically different because to prize names a practical, non-intellectual attitude, and to appraise names a judgment. (Dewey 1916/1979, 26 – 27, also see Dewey 1922/1983, 4)

Dewey might well have seen the seeds of this idea in James. So I will use the term loosely, simply intending it as shorthand for James's basic idea that that value has, so to speak, two faces. While Dewey's more sophisticated development of this concept is not my concern in this book, there may be further affinities that would reward further investigation.

⁶ Trevor Pearce has rightly emphasized the importance of Herbert Spencer for James's thinking about evolution (Pearce 2020), but James advanced his theory of consciousness as a specifically Darwinian hypothesis, not just a broadly evolutionary one (EPs 1879, 45, 53 – 54).

⁷ "Vivisection" is now used mainly by opponents of experimentation on live animals, but in the Victorian era the term did not carry a pejorative connotation and was used by both opponents and proponents of this practice. James in fact wrote several articles defending what he was happy to call "vivisection" (see EPs 1875, 10 – 13, 1876, 18 – 19, 1909, 190 – 192; for more on his defense, see fn. XXX, below).

explain some otherwise puzzling observations. This is consciousness in the role of explanans, not explanandum.

The methodological strategy is to put consciousness to use in explaining surprising physiological observation rather than to wait around for the more metaphysical mysteries about consciousness to *get* explained. At least during the period I will be considering, James rejected demands to *explain* consciousness in the sense of trying to ground it in some more metaphysically basic phenomenon.⁸

As the book develops, I will occasionally bring James's account to bear on issues of interest in more recent philosophy and cognitive science. But my project is driven in the first instance by a concern to place James's work in historical context and to assess it in light of its own ambitions. I will concentrate on the period during which he was most actively developing a naturalistic account of phenomenal consciousness: between roughly 1872, when he first began lecturing on the topic, and 1895, when he published a theory of conscious representation (in "The Knowing of Things Together") that marked a career transition from psychology to his later philosophy of pragmatism and radical empiricism. Here is a preview of the story I will develop.

Part one offers some stage-setting concerning aspects of James's biography and methodology that are relevant to my story. There are many rich accounts of James's life available,⁹ so I confine myself (in chapter two) to a few aspects of his

⁸ James was not against metaphysics in general, but rather was wary of certain kinds of intractable, speculative questions intruding into scientific investigation (Klein 2008). And like many of his positivistic peers, he was particularly wary of the idea that science should try to "explain" consciousness; see pp. [[XXX—in chapter three]], below. For more on James and positivism, see (Pearce 2015).

⁹ Some notable biographies of James include (Allen 1967, Bjork 1988, Croce 2018, Feinstein 1984, Richardson 2006, Simon 1998).

biography that are relatively less well-known. I focus on his early-career attempt to position himself as a new kind of empirical researcher, one who could marry the latest results in clinical and experimental physiology with with what he at the time called “introspective philosophy.” An offspring of this marriage, as James fashioned it, was to be the nascent science of empirical psychology. In chapter three I examine James’s explicit remarks on scientific methodology in the new psychology. I rebut a common caricature of him as a mere “introspectionist” who had little use for third-person, empirical observation. That caricature is rooted in a misleading story about the history of psychology that has become standard in that discipline’s textbooks. On this story, James was a leading figure in an era (ultimately put to death by behaviorism) when “introspectionist” methodology supposedly dominated.

Readers with more interest in the theoretical story can skip directly to part two without missing too many plot points. In chapter four I examine the genesis of an intense debate in physiology to which James would eventually respond. A blockbuster experiment published by Eduard Pflüger in 1853 demonstrated that living, decapitated frogs not only exhibit reflex responses to stimuli (a phenomenon that was already well known), but they also perform *purposive* behaviors. Suppose one thinks, along with Pflüger’s English ally G. H. Lewes, that purposive behavior is a mark of consciousness. Then one must count a decapitated frog as conscious. If one *rejects* this mark, along with critics like T. H. Huxley, then one can avoid saying peculiar things about decapitated animals. But this view opens the way for epiphenomenalism: just as pithed frogs *seem* to act with purpose even though their behavior is not really guided by consciousness,

so intact *human* behaviors may seem purposive without really being guided by consciousness.

I situate this controversy as part of an older debate in physiology between mechanists, who held that all physiological action might ultimately be reducible to purely mechanical causes, and vitalists, who held that living things (including minds) might be governed by a different set of natural laws than inanimate matter. A key touchstone for this debate over the nature of physiological explanation was Descartes's treatment of the automatism of brutes, with which I begin. I also show how so-called British Emergentism grew out of the vitalist side of this controversy in Lewes's work. James's reaction to Lewesian emergentism—which was to pass it over as so much metaphysical hot air—puts his (James's) empirically-driven sensibility into sharp relief.

When James began working on these issues in the 1870s, he quickly concluded that the debate was deadlocked in any case, and presented his own account of consciousness (which I introduce in chapter five) as an intervention. It was clear that the purposiveness criterion alone could not differentiate between the behavior of decapitated and intact creatures. But James came to think that one *could* differentiate these behaviors by adding a second criterion: to be counted as genuinely conscious, creatures must not only have a capacity for purposive behavior, he proposed, but they must also have a capacity to take account of what he called “absent ... objects” or, as he also put it, “*remote sensations*” (PP 1890, 32).

He offered the example of seeing a snake on a hiking trail. Consciousness allows me to entertain the consequences of different possible courses of action—

say, going around the snake and risking a bite versus retreating at the price of fatigue. Neither the bite nor the fatigue are perceptually presented; they are absent objects that consciousness enables us to propose to ourselves and to value, effectively decoupling the visual stimulus of the snake from an immediate reflexive response.¹⁰ James thought the exercise of this capacity was publicly observable, characterizing as “prudence” (PP 1890, 33) behavior that is both purposive *and* undertaken in a way that takes account of absent objects. *Prudent* behavior is, in effect, regulated behavior, and James pointed to a series of experimental results suggesting that de-cerebrated vertebrates *lack* behavioral prudence under this definition.

So the surprising physiological facts that James thought demanded explanation were the subtle, observed differences between the hemisphereless vertebrate’s purposive (but otherwise impaired) behavior and the genuinely prudent (regulated) behavior displayed by intact conspecifics.¹¹ He accounted for these observations roughly as follows. Based in part on brain damage evidence from humans and dogs (PP 1890, 74 – 75), he proposed that consciousness is

¹⁰ Here we have an anticipation of a point advocated more recently by representationalists: that an aspect of mental states that is important for guiding intelligent behavior is so-called “decouplability”—e.g., a mental state’s capacity to intend or depict a lemon whether or not the lemon is perceptually present (Clark and Grush 1999, cf. Grush and Mandik 2002 for the related notion of “independent targetability”). A summary of the literature on decouplability, along with an attempted refutation, can be found at (Gallagher 2017, 13 – 14, 91 – 96). We will see that for James, something like decouplability is crucial to consciousness’s evolutionary and physiological function, though his account of representation—of what makes a decouplable state *about* something else—depends on future action rather than on the state’s causal history, or on its providing an internal copy or a pictorial model of something outside of us.

¹¹ In his work on consciousness, the vivisection evidence with which James dealt came almost exclusively from vertebrates. We should therefore regard his theorizing as applying in the first instance, roughly, to members of the subphylum Vertebrata. For more on so-called “invertebrate” consciousness, see fn. XXX, below.

primarily a product of the hemispheres. So he held that the hemisphereless creatures in Pflüger's experiments are unlikely actually to be conscious. James then offered both phenomenological and third-person, experimental evidence that consciousness in intact creatures incessantly values its objects, and conjectured that if consciousness is *characteristically* or *typically* a valuating agency, it might thereby play a role in regulating the behavior of (i.e., in enabling prudent behavior in) creatures with complex neural circuitry. In fact, he hypothesized, consciousness might have been selected for precisely this purpose. And he pointed to experimental evidence that hemisphereless creatures *lack* this evaluative capacity, which he took to be so central to behavioral regulation.

Notice that for James in these early years, consciousness appeared in the role of *explanans*, just as I suggested above. Whether or not his view turns out to have been correct in substance, his methodology alone represents an interesting road not taken, and at the start of chapter six I offer some further historical context for his approach.

Since James was developing an argument to the best explanation of some experimental results, he also sought to undermine rival, epiphenomenalist accounts of those same experiments. He argued that epiphenomenalism is incompatible with basic evolutionary principles, an objection to which I devote the remainder (and bulk) of chapter six. This objection continues to generate responses even today, so after historically situating James's argument, I sharpen it by appealing to some more recent theoretical tools from the philosophy of biology.

A full grasp of James's account of consciousness also requires taking notice of his closely related work on will, to which I turn in part three. If consciousness enables evaluation by permitting organisms to entertain possible (but not yet actualized) courses of action, it is in willing that we *propose* those possibilities to ourselves in the first place, and finally *choose* which ones to enact. So willing is also a capacity needed for achieving the behavioral regulation at issue in chapter four. We can say that consciousness and will thus work hand-in-glove, for James, in generating and guiding prudent action. This is the thrust of the slogan from which I draw my title: "All consciousness is motor" (PBC 1892, 321).¹²

James's account of willing is extraordinarily sophisticated. I offer a reading of some basics in chapter seven. The point of attachment with his physiological account of consciousness is the remote sensation, one variety of which is what James called an "anticipatory image." This is a conscious representation of what experiences we can expect should we perform some bodily motion. According to James, all anticipatory images directly trigger the represented motion (as a matter

¹² I mentioned (in fn. 10, above) that James anticipated some insights of contemporary representationalism. Here we see an important respect in which James also anticipated aspects of enactivism about consciousness and cognition. Noë writes that for enactivists, perception involves the physiological mastery of "pattern[s] of sensorimotor dependence"—for instance, we know how to move our bodies to hear a sound source more clearly or to get a closer look at something, and our ability to perceive is "constituted by" this sort of skillful engagement with the environment (Gallagher 2017, 6, Noë 2004, 1 – 2, also see Noë and O'Regan 2002, 569). Similarly, James sees consciousness as inherently tied to the dynamic regulation of bodily activity inside an environment. His conception of regulation has a strongly volitional component that would not sit well with today's enactivism, though, and neither would his claim that consciousness enables the decoupling of stimulus and response. In any case, James's foreshadowing of enactivism in some respects is not surprising as a historical matter. His student Edwin Holt was working out the implications of James's radical empiricism for psychology at the time he (Holt) mentored a young James Gibson at Princeton (Heft 2001, 2002), and Gibson has been a major influence on enactivists. Gallagher also cites Dewey's pragmatism as an important inspiration for enactivists (Gallagher 2017, ch. 3), but says little about James.

of brute psychological fact), unless there is some inhibiting factor, such as the agent's also entertaining antagonistic action representations simultaneously. This is the theory of ideo-motor action, and the paradigm of willing is the case where the subject actively chooses between antagonistic bodily-motion representations. The choice is executed via attention, on James's view—through the subject's attending to the anticipatory image that most captures her subjective interest, and doing so until the antagonistic representations fade.

Like many in his era, James took the reflex arc as a model for much physiological response—insisting that consciousness is just a phase that we abstract out of a larger reflex “loop,” both ends of which “have their point of application in the outer world” (WTB 1881, 92).¹³ But he ultimately denied that all behavioral outputs can be traced back to prior sensory inputs, in a fully lawlike way, without remainder. For in our most volitional actions we *break* the reflex arc, bringing to bear at least two mental factors that are not themselves either stimuli or mechanical reactions to stimuli: *anticipatory images*, which amount to endogenously generated goal-representations; and *subjective interests*, which we rely on in attentively choosing between mutually exclusive goal representations. Thus James's work on will suggests that if we want to understand either the physiology or the evolution of consciousness, we will have to take subjectivity

¹³ The influence on Dewey (particularly in Dewey 1896) of James's holistic approach to the reflex arc is apparent here. Nevertheless, there is a debate about just how strong this influence actually was. On one side, scholars like (Phillips 1971) contend that Dewey's paper essentially develops a basic approach originally laid out by James (especially in “Reflex Action and Theism,” an 1881 essay later included in WTB 1897). On the other side, scholars like (Backe 1999) contend that Dewey's early Hegelianism was an important and quite distinct influence on Dewey's 1896 reflex arc paper, and that James's influence has been overstated. Nothing I have to say turns on deciding the precise extent of James's influence on Dewey, and so I will not attempt to adjudicate this debate here.

into account, understanding “subjectivity” as an agent’s capacity to formulate her own *goals* and *interests*.

As a historical matter, James’s approach did not end up carrying the day. 19th-century mechanists like Huxley effectively sought to fit *all* physiological response into the template of strict reflex action. According to what is sometimes called the sensorimotor tradition, physiology should seek lawlike connections between stimuli and responses, and simply assume that all apparent “spontaneity” (unpredictable, non-lawlike behavior) will eventually be explained away by a more complete physiology (Huxley 1894, 39, 159). Behaviorists carried this tradition forward in the 20th century, and despite the so-called “cognitive revolution,” sensorimotor echoes can be found in computational approaches to mind today, and even in some forms of enactivism.¹⁴ But in some recent experimental psychology that I touch on in chapter seven, there has been a revival of James’s ideo-motor approach, suggesting that his road-not-taken might continue to carry us into the future up fruitful new paths.

Chapter eight highlights an aspect of James’s account of will that is closely connected with his take on consciousness’s evolution: his claim that every conscious state, including every anticipatory image, produces some bodily change by itself, so that willing is choosing *to allow* one of several antagonistic action representations to be enacted. In contrast, a dominant account of volition (in James’s day and our own) portrays willing as the translation of an *otherwise inert*

¹⁴ It has often been suggested that enactivism is a form of behaviorism, by critics (like Jacob 2011) as well as by proponents (like Alksnis and Reynolds 2019). One underappreciated link between the earlier and later movements is the pervasiveness they both see of lawlike, exceptionless patterns of connection between sensory input and motor output (on which see O’Regan 2014, 24).

thought into action. Today, philosophers of action sometimes call mental states that play this purported translating role “tryings.” James rejected their existence first for reasons of evolutionary parsimony, and second because of empirical evidence suggesting that *all* mental states trigger some bodily change or other, directly.

He was responding to trying theorists in his era like Helmholtz, Wundt, and Mach, who had often appealed to increasingly complex empirical work performed with paresis patients. Such patients report a feeling of effort when trying to move an immobilized appendage, despite the limb moving little or not at all. They termed this feeling an “*Innervationsgefühl*,” literally a feeling of innervation, claiming that it arises from the outflowing nerve currents that trigger muscular contraction. In a series of investigations on will and on spatial perception, James set out to dismantle this purported evidence, showing how the paresis observations were also consistent with his own, anti-trying account of will, an account he claimed to be more parsimonious from an evolutionary perspective.

Finally chapter nine takes up James’s account of mental *aboutness*—of what *makes* some conscious state count as a representation of something else. In his later pragmatism, he would contend that mental states represent an object in virtue of affording guidance in navigating to that object and interfering with it in a way that accords with the agent’s subjective interests and goals. But this account was anchored (I will argue) in the architecture of consciousness and will that James had developed in his earlier, psychological work. As a historical matter, James developed his first mature version of this view in response to some epistemological criticisms of his account of consciousness. The basic criticism

(leveled by G. S. Fullerton in particular) targeted James's holism—his view that conscious states are, from a phenomenological standpoint, always inviolable wholes, as opposed to being complex states made up of simpler mental elements. So in chapter nine I begin with an account of James's holistic model of the phenomenology of conscious states. I then turn to Fullerton's central criticism, which is that no defensible account of knowledge could be built on such a model. I finally show how James's response—to reconceive *aboutness* in terms of aiding future action—helps skirt the criticism by drawing on key aspects of his earlier, evolutionary-physiological work.

An important caveat is in order before moving on. So far I have been using “phenomenal consciousness” as a first approximation to help us pick out what it is James took himself to be talking about, since he was *at least* interested in the subjective, qualitative aspects of experience. However, he denied that those qualitative aspects are independent (as a matter of fact) of accompanying physiological inputs and outputs. That is the upshot of his claim that all conscious states—all qualia, if you like—naturally and directly produce some bodily change or other.

This point is crucial to bear in mind, as it creates a mismatch with the way we typically use the term “phenomenal consciousness” today. Here is how James links consciousness with physiology:

Mental phenomena are not only conditioned *a parte ante* by bodily processes; but they lead to them *a parte post*. That they lead to *acts* is of course the most familiar of truths, but I do not merely mean acts in the sense of voluntary and deliberate muscular performances. Mental states

occasion also changes in the calibre of blood-vessels, or alteration in the heartbeats, or processes more subtle still, in glands and viscera. If these are taken into account, as well as acts which follow at some *remote period* because the mental state was once there, it will be safe to lay down the general law that *no mental modification ever occurs which is not accompanied or followed by a bodily change*. The ideas and feelings, e.g., which these present printed characters excite in the reader's mind not only occasion movements of his eyes and nascent movements of articulation in him, but will some day make him speak, or take sides in a discussion, or give advice, or choose a book to read, differently from what would have been the case had they never impressed his retina. Our psychology must therefore take account not only of the conditions antecedent to mental states, but of their resultant consequences as well. (PP 1890, 18 – 19, italics original)

For James, modifications in consciousness are *always* (again, as a matter of fact) both preceded and followed by bodily modifications, so that “mental life” must be regarded as something that “intervene[s] between impressions made from without upon the body, and reactions of the body upon the outer world again” (PP 1890, 19 – 20). It would therefore be misplaced, on James's approach, to give an evolutionary or physiological account of “pure” phenomenal consciousness in itself, without reference to the bodily and environmental conditions in which consciousness operates.

But this flies in the face of the way many philosophers conceptualize so-called “phenomenal consciousness,” today. Block introduced this term precisely

to distinguish pure subjective phenomenality—what-it-is-like-ness—from what he called “access consciousness”—the kind of informational availability in virtue of which mental states can causally influence behavior (Block 1995). From James’s evolutionary and physiological perspective, this philosophical distinction is invidious. The question is not whether we can *conceptually* isolate these two purported varieties of consciousness, but whether there are two traits whose function needs to be accounted for, or only one. We will see James presenting an account according to which there is only one trait here, something like *causally-
efficacious-what-it-is-likeness*.

This is an ugly expression, but its ugliness is instructive. Today, the distinction between phenomenal and access consciousness is ingrained, so that it takes effort to keep together conceptual fragments that once formed an inviolable whole. In any case, since the phrase *causally-
efficacious-what-it-is-likeness* is so cumbersome, I simply use “phenomenal consciousness” in connection with James instead, but bear in mind that I use the latter term as a shorthand for the ugly expression, and not as Block originally intended it.¹⁵

¹⁵ Phenomenal consciousness is typically thought to be a form of state consciousness, not creature consciousness (Block 1995, 235), and James at least agrees to that. He held that psychology should resist the urge to postulate a *thinker* somehow standing behind our passing thoughts—the thinker *just is* the passing thought, for James: “as psychologists, we need not be metaphysical at all. The phenomena are enough, the passing Thought itself is the only verifiable thinker...” (PP 1890, 328). So like in much contemporary philosophy of mind, when James uses the noun form “consciousness,” this should be taken as indicating a property that can be predicated only of mental states, not whole creatures. Also, Block regarded phenomenal consciousness as sometimes transitive, sometimes intransitive (Block 1995, 232). On this issue James held, both early and late, that consciousness is typically transitive—even essentially, he sometimes suggests (at PP 1890, 186 he says that “reference to an object other than the mental state itself” is “the mental life’s essence”; and he expresses a similar view on consciousness in the setting of his pure experience metaphysic at ERE 1904, 4).

James is not the only figure whose account of “consciousness” I will be discussing, though, so some looseness in my usage is unavoidable. For example, the epiphenomenalists we will examine (especially T. H. Huxley) obviously did not take themselves to have theories of a causally-*efficacious* consciousness. What is more, on pain of begging the question, when James attacks epiphenomenalist accounts of “consciousness” he cannot be using that term to indicate something causally-*efficacious* either. But one can take his attack on epiphenomenalism as an argument for why we *should* think of consciousness as a causally-*efficacious*, subjective phenomenon.

2. Who Cares?

There is an impressive renaissance afoot in James scholarship at present. Topics that have commanded the most attention have been James’s pragmatic epistemology, of course, but also his ethics, religious reflections, social and political philosophy, and historical connections to kindred figures like Hume, Hegel, Renouvier, Husserl, and Wittgenstein (for a sampling of some leading authors, see Klein Forthcoming-c). While there is growing interest in James’s philosophy of mind as well, especially in his work on emotion,¹⁶ his evolutionary, interactionist account of consciousness has received surprisingly little attention.¹⁷ So one goal of this book is simply to offer a more historically and theoretically nuanced picture of James’s work on consciousness, one that takes account of a

¹⁶ Much of the work I have in mind has been James-inspired, rather than in the first instance historical (e.g., Damasio 2010, Prinz 2004, Strawson 2009). A forthcoming volume does contain more directly historical work on James’s account of mind (e.g., Hatfield Forthcoming, Klein Forthcoming-b, Levine 2018, Prinz Forthcoming).

¹⁷ For an overview of the existing literature, see below, fn.XXX.

range of his evidentiary sources that has been largely overlooked in the secondary literature. I hope James scholars come away with a better sense of how empirical reflections structured James's life-long engagement with this topic.

I have tried to write not only for James specialists, though, but also for a broader audience of philosophical naturalists as well. The rise of naturalism in our own day has sometimes been accompanied by a sense of revolutionary fervor, as though the application of empirical results to philosophical questions were quite a new thing.¹⁸ Thus some advocates of experimental philosophy (one prominent form of naturalism, of late) portray their work as undermining the strictly a priori "philosophical methods" that have supposedly been used "for 2,400 years," as Stephen Stich has put it.¹⁹ A more defensible view is that empirically-engaged philosophy has a long, albeit long-ignored, history.²⁰ And so this book attempts to excavate the small but important part of this history that James's work on consciousness represents.

¹⁸ For instance, (Papineau 1993, 3) portrays naturalism as a reaction against "traditionalists" who insist that "'first philosophy'" must proceed without relying on any "empirically based assumptions."

¹⁹ Stich is quoted in the *Chronicle of Higher Education* (Shea 2008, 9). Anthony Appiah also portrays the movement in a revolutionary light in a *New York Times* essay (Appiah 2007).

²⁰ Some experimental philosophers who take a more revivalist attitude include Knobe and Nichols, who advocate "a return to [a] ... traditional vision" that sees philosophy as continuous with the sciences, although they go on to suggest that experimental philosophy is revolutionary in that today's practitioners are *themselves* willing to conduct "systematic empirical studies" on philosophical questions (Knobe and Nichols 2008, 3). Although Appiah sounds like a revolutionary in his popular writing (see fn. 19, above), in his more scholarly work he contends that experimental philosophy is actually as old as philosophy itself (e.g., Appiah 2008a, ch. 1, Appiah 2008b), a thought echoed by (Sytsma and Livengood, xvii – xix, ch. 1). And (Kitcher 1992, 54) portrays Fregean linguistic analysis as "a revolution which overthrew philosophical naturalism" as exemplified by Descartes, Locke, Leibniz, Hume, Kant, and Mill. And a few historians have begun looking in more detail at earlier instances of empirical or experimental philosophy, notably Peter Anstey and Alberto Vanzo (e.g. Anstey 2005, Anstey and Vanzo 2016, Anstey and Vanzo 2012). Also see the issue of *British Journal for the History of Philosophy* on this topic, which is guest-edited by Vanzo, and in which my (Klein 2018) appears.

That James bears affinities with more recent philosophical naturalism is, by itself, not a novel point (e.g., see Flanagan 1984/1991, 23 – 24). Yet even those who celebrate his naturalist theories of mind too often ignore the experimental details he brought to bear in support of those theories, so that we are left with the impression that James was a naturalist in spirit, but perhaps unwilling or inept when it came to engaging actual empirical work.²¹

Indeed, some commentators go even further. Rand Evans, to take one prominent example, suggests that James “openly rejected experimental psychology and the methods of the laboratory” (also see Evans 1990a, 28, Evans 1990b, 433). In the *Principles* James is supposed to have sided

not with experimental psychology but with what he called “introspective observation.” ... James meant by introspective observation, “the looking into our own minds and reporting what we there discover” [fn.: PP 1890, 185]. What James found there, of course, were states of consciousness. His was a phenomenological description rather than an analytical description as was used by Wundt and Titchener. James’s notions of psychological description were based on the fundamental precept that “all people unhesitatingly believe that they feel themselves thinking, and that they distinguish the mental state as an inward activity or passion” [fn. omitted]. ... He believed, however, that the age-old method of philosophy would best serve to resolve any individually erroneous observations. ...

²¹ For instance, Flanagan portrays James as a naturalist, but goes on to draw mainly on the latter’s introspective observations, taking little account of experimental results in the *Principles* (Flanagan 1984/1991, ch. 2).

His was the tried and true method of philosophical observation and reflection. (Evans 1990b, 435 – 36)

This kind of attitude about James is widespread.²² An early example is found in Perry’s classic 1935 study, where we read that James’s physical limitations, his quantitative ineptitude,²³ and his impatience prevented him from contributing “experimental results of importance”; and these limitations dovetailed with James’s supposed “opinion that the new laboratory method had not yielded significant results” in physiological psychology generally (RBP II. 24). Similarly, Boring calls James “but a half-hearted experimentalist” (Boring 1929/1950, 495). Danziger casually refers to “nonexperimentalists like J. S. Mill and William James” (Danziger 1980, 251). And so on.

Wilshire approvingly cites Perry’s contention (RBP II.24) that “[n]ot more than a fifth of his *Principles of Psychology* can be said to relate even to the experimental work of others” (Wilshire 1968, 25). Perry does not explain how he arrived at his one-fifth estimation, but Wilshire cites this supposed statistic to cast doubt on the notion that James’s *Principles* should be read as a genuine attempt to build a properly scientific psychology. Wilshire instead suggests that we should see James as quietly building towards a “phenomenology” that is fundamentally

²² A similar view about James’s attitude towards experiment (which is supposed to have come “very close to bored contempt”) can be found at (Klein 1942, 229).

²³ James had no special quantitative talent, but his supposed mathematical ineptitude has been wildly overstated. Francesca Bordogna has shown that James was fairly seriously engaged—and quite deeply influenced by—some of the major mathematical controversies of his day, particularly as represented in Bolzano, Dedekind, and Cantor’s respective work on the so-called “new infinite” (Bordogna Forthcoming).

an “a priori” “transcendental inquiry” about the necessary preconditions of phenomenal experience.²⁴

That James produced few “experimental results of importance” is one of the two most commonly-cited bases for the “introspectionist caricature,” as I will call it, according to which James’s work on the mind relied almost exclusively on phenomenological description and largely eschewed or downplayed third-person evidence. The other basis for this caricature is textual, involving a few lines from James’s psychological work that are supposed to demonstrate that he “openly rejected” the use of experiment in psychology (in Evans’s words). I will examine both arguments in detail (in chapter three). I will also offer (in chapter two) some biographical background on James’s scientific training and experimental practice, along with a consideration of his most well-known (and I think widely-misinterpreted) remarks on psychological methodology in the *Principles* and in the *Briefer Course*.

James’s own experimental results, while more substantial than the caricature suggests, really are not and should not be the basis for his good reputation—that much is accurate. But his empirical reflections on the mind were rarely based on his *own* experiments. The drift of this book suggests that when it came to experiment, James’s real gift was as an interpreter and synthesizer. He had an almost unrivaled grip on the latest empirical literature in physiology and psychology—perhaps totally unrivaled compared to those few who also shared his facility with more literary texts in philosophy, as we shall see in chapter two.

²⁴ For an insightful overview and response to this style of reading, see (Levine 2018). I have also offered considerations that tell against this sort of reading in (Klein 2008).

He had had high-level training in physiology, chemistry, evolutionary biology, and medicine. By all accounts he also read widely both inside and outside of the sciences from a young age, spurred on by his father, an idiosyncratic theologian with substantial hereditary wealth. And thanks to an international upbringing, by the time of his young adulthood James was fluent in both French and German.²⁵ All of this helped him move easily in rarefied intellectual circles in Europe, gaining access to researchers whose laboratories were churning out leading results, as well as to foreign-language literature in which those results were being published. Hence he was particularly well-positioned to put his observant phenomenological descriptions into contact with a battery of up-to-date empirical work, and in this respect James is an important precursor to some naturalistic approaches to mind, today.

In any case, I mentioned above that this book is not only written for James scholars, but also for those who have more purely theoretical interests in consciousness and related issues. These more theoretical readers will (I hope) be intrigued by James's phenomenological description, by his psychological methodology, and by his more philosophical argument. But they may wonder why they should bother reading about the outdated science that (on my reading) undergirds this other work.

Here is one answer. Scientific results can be outdated in the sense of having been proven false. They can also be outdated in the sense of belonging to a

²⁵ To get a sense of James's linguistic abilities, along with his incredibly wide-ranging intellectual interests from a young age, see (Richardson 2006, 14 – 17 and *passim*). I have examined some aspects of James's philosophical debt to his father in (Klein 2019), and of his tendency to draw from international sources in (Klein Forthcoming-a).

research paradigm that is no longer active. As far as I have been able to discern, the empirical results up for discussion in this book are largely outdated in the latter sense, not the former. Do we know more about neurophysiology today than we did then? Yes, we know much more. But have the main results concerning animal vivisection been shown to be false in any substantial way? To my knowledge, the answer is no. That research was brutal, and has ceased for good ethical reasons. As an experimental program it is dormant, not discarded.²⁶

We should be careful about placing too much stock in old experiments that we cannot verify using modern techniques, admittedly. The results readers will encounter do not meet today's standards of experimental practice and statistical analysis. The widespread acceptance of those standards (including standards like a demand for replication, null-hypothesis testing, blinded methodologies, and so on) post-date the laboratory work we will examine. And even if we wanted to replicate this work, today, we should not do so, since the experiments involve surgical procedures on live animals that shock the conscience. And since the results we will examine are tailored to answer 19th-century theoretical questions, they are cashed out in a vocabulary that would be awkward at best to integrate with contemporary approaches.

And yet, the experimental work at issue is not phlogiston theory. If there is a spectrum of rigorously-tested results ranging from that which we have the best reason to accept to that which we have the best reason to reject, these

²⁶ A journal article of mine tracing some aspects of these old vivisection experiments continues to be cited in various scientific (non-philosophical) papers today, which provides some limited evidence that today's researchers do not regard the old results as incorrect in any fundamental way. E.g., see (Lee, Kominami, and Ushio 2021, Millhouse, Moses, and Mitchell 2021, Wood 2021).

physiological experiments float somewhere in the vast, hard-to-catalog middle. They cannot and should not be repeated in just the way they were originally conducted. But I hope patient readers will find that nevertheless, they have a capacity to spur the imagination, today. Neglected science is a vast ocean. Some of it, one suspects, is nutrient rich.

3. On the Weaving Metaphor

A few final words are in order about the weaving metaphor in this book's subtitle. I take empirical reflections to be ineliminable parts of James's tapestry—but the metaphor is meant to emphasize that they are neither self-standing nor wholly independent of the introspective description he offers. The trouble is that James's introspective description has been so transfixing that readers have too often made the error of looking only at the colorful weft yarns—at the phenomenological treatments—without taking account of how they mesh with the warp—with the empirical component.

Also, while James evidently sought consistency across his many varied writings, he was not a geometric thinker in the sense of building up a grand account out of a few basic axioms or principles. Instead, he followed a more piecemeal strategy in investigating the many special mental topics that interested him. As such, although his work on consciousness perhaps occupies a central position on the tapestry, I take this to be one special account among many. In other words, I do not claim that his provocative accounts of attention, the self, spatial perception, temporal perception, emotion, and so on, in any simple way presuppose or logically depend on his account of consciousness. This is another

respect in which his theory of mind is tapestry-like. There are methodological threads that unify the fabric, continuities between what adjacent patches depict, and general patterns that emerge when one steps back and takes in the entire cloth as a whole. But this is quite different from offering a system built from a few basic principles.

His friend Charles Sanders Peirce, like an engineer, sought “to lay the foundations deep and massive” (CP I.1) for a grand intellectual system. But James is better regarded as a theoretical weaver who tried to knit together many spools of “facts” (a favorite word of his)²⁷ into a whole cloth.

- Alksnis, Nikolai, and Jack Reynolds. 2019. "Revaluing the Behaviorist Ghost in Enactivism and Embodied Cognition." *Synthese*.
- Allen, Gay Wilson. 1967. *William James: A Biography*. New York: Viking Press.
- Andersen, Holly K., and Rick Grush. 2009. "A Brief History of Time-Consciousness: Historical Precursors to James and Husserl." *Journal of the History of Philosophy* 47 (2):277-307.
- Anderson, Elizabeth. 2019. "Dewey's Moral Philosophy." *The Stanford Encyclopedia of Philosophy*. Edited by Edward N. Zalta. Winter ed. <<https://plato.stanford.edu/archives/win2019/entries/dewey-moral/>>.
- Anstey, Peter R. 2005. "Experimental Versus Speculative Natural Philosophy." In *The Science of Nature in the Seventeenth Century*, edited by Peter R. Anstey and J. A. Schuster, 215-42. ?: Springer.
- Anstey, Peter R., and Alberto Vanzo. 2016. "Early Modern Experimental Philosophy." In *A Companion to Experimental Philosophy*, edited by Justin Sytsma and Wesley Buckwalter, 87-102. Chichester: Wiley.
- Anstey, Peter, and Alberto Vanzo. 2012. "The Origins of Early Modern Experimental Philosophy." *Intellectual History Review* 22 (4):499-518.
- Appiah, Anthony. 2008a. *Experiments in Ethics*. Cambridge: Harvard University Press.
- Appiah, Kwame Anthony. 2007. "The New New Philosophy." *The New York Times Magazine*, December 9, 34.
- . 2008b. "Experimental Philosophy." *Proceedings and Addresses of the American Philosophical Association* 82 (2):7-22.

²⁷ Thus his famous brother, the novelist Henry James, once remarked: “There was not a single fact which, *qua* fact, did not give him a certain amount of pleasure” (quoted without further attribution at Wahl 1925, 116).

- Backe, Andrew. 1999. "Dewey and the Reflex Arc: The Limits of James's Influence." *Transactions of the Charles S. Peirce Society* 35 (2):312-26.
- Bjork, Daniel W. 1988. *William James: The Center of His Vision*. New York: Columbia University Press.
- Block, Ned Joel. 1995. "On a Confusion About a Function of Consciousness." *Behavioral and Brain Sciences* 18 (2):227-87.
- Bordogna, Francesca. Forthcoming. "James and Math." In *The Oxford Handbook of William James*, edited by Alexander Klein. New York: Oxford University Press.
- Boring, Edwin G. 1953. "A History of Introspection." *Psychological Bulletin* 50 (3):169-89.
- Boring, Edwin Garrigues. 1929/1950. *A History of Experimental Psychology*. 2nd ed. New York: Appleton-Century-Crofts.
- Clark, Andy, and Rick Grush. 1999. "Towards a Cognitive Robotics." *Adaptive Behavior* 7 (1):5-16.
- Croce, Paul Jerome. 2018. *Young William James Thinking*. Baltimore: Johns Hopkins University Press.
- Damasio, Antonio R. 2010. *Self Comes to Mind: Constructing the Conscious Brain*. New York: Pantheon Books.
- Danziger, Kurt. 1980. "The History of Introspection Reconsidered." *Journal of the History of the Behavioral Sciences* 16:241-62.
- Dewey, John. 1896. "The Reflex Arc Concept in Psychology." *Psychological Review* 3:357-70.
- . 1916/1979. "The Logic of Judgments of Practice." In *The Middle Works of John Dewey, 1899-1924. Volume 8: 1915, Essays, German Philosophy and Politics, Schools of Tomorrow*, edited by Jo Ann Boydston, 14-82. Carbondale: Southern Illinois University Press.
- . 1922/1983. "Valuation and Experimental Knowledge." In *The Middle Works of John Dewey, 1899-1924. Volume 13: 1921-1922, Essays*, edited by Jo Ann Boydston, 14-82. Carbondale: Southern Illinois University Press.
- Evans, Rand B. 1990a. "William James and His *Principles*." In *Reflections on the Principles of Psychology: William James after a Century*, edited by Michael G. Johnson and Tracy B. Henley, 11-31. Hillsdale, N.J.: L. Erlbaum Associates.
- . 1990b. "William James, *the Principles of Psychology*, and Experimental Psychology." *American Journal of Psychology* 103 (4):433-47.
- Feinstein, Howard M. 1984. *Becoming William James*. Ithaca: Cornell University Press.
- Flanagan, Owen J. 1984/1991. *The Science of the Mind*. 2nd ed. Cambridge: MIT Press.
- Gallagher, Shaun. 2017. *Enactivist Interventions: Rethinking the Mind*. Oxford: Oxford University Press.
- Grush, Rick, and Pete Mandik. 2002. "Representational Parts." *Phenomenology and the Cognitive Sciences* 1 (4):389-94.
- Hatfield, Gary C. Forthcoming. "James and Spatial Perception." In *The Oxford Handbook of William James*, edited by Alexander Klein. New York: Oxford University Press.

- Heft, Harry. 2001. *Ecological Psychology in Context: James Gibson, Roger Barker, and the Legacy of William James's Radical Empiricism*. Mahwah, N.J.: L. Erlbaum.
- . 2002. "Restoring Naturalism to James's Epistemology: A Belated Reply to Miller & Bode." *Transactions of the Charles S. Peirce Society* 38 (4):559-80.
- Huxley, Thomas Henry. 1894. *Collected Essays: Method and Results*. 1 of 9 vols. New York: Appleton.
- Jacob, Pierre. 2011. "The Direct-Perception Model of Empathy: A Critique." *Review of Philosophy and Psychology* 2 (3):519-40.
- Kitcher, Philip. 1992. "The Naturalists Return." *Philosophical Review* 101 (1):53-114.
- Klein, Alexander. 2008. "Divide Et Impera! William James's Pragmatist Tradition in the Philosophy of Science." *Philosophical Topics* 36 (1):129-66.
- . 2018. "The Curious Case of the Decapitated Frog: On Experiment and Philosophy." *British Journal for the History of Philosophy* 26 (5):890-917.
- . 2019. "Between Anarchism and Suicide: On William James's Religious Therapy." *Philosophers' Imprint* 19 (32):1-18.
- . Forthcoming-a. "How American Was Pragmatism?" *Philosophy of Science*.
- . Forthcoming-b. "James and Consciousness." In *Oxford Handbook of William James*, edited by Alexander Klein. New York: Oxford University Press.
- , ed. Forthcoming-c. *Oxford Handbook of William James*. New York: Oxford University Press.
- Klein, D. B. 1942. "Psychology's Progress and the Armchair Taboo." *Psychological Review* 49 (3):226-34.
- Knobe, Joshua, and Shaun Nichols. 2008. "An Experimental Philosophy Manifesto." In *Experimental Philosophy*, edited by Joshua Knobe and Shaun Nichols, 3-14. New York: Oxford University Press.
- Lee, Cheng-Linn, Yuri Kominami, and Hideki Ushio. 2021. "Mechanism of Delayed Convulsion in Fish: The Actions of Norepinephrine in Spinal Cord." *Fishes* 6 (2):12.
- Levine, Steven. 2018. "William James and Phenomenology." In *The Oxford Handbook of William James*, ed Alexander Klein. New York: Oxford University Press. 10.1093/oxfordhb/9780199395699.013.24.
- Lyons, William E. 1986. *The Disappearance of Introspection*. Cambridge: MIT Press.
- Millhouse, Tyler, Melanie Moses, and Melanie Mitchell. 2021. "Foundations of Intelligence in Natural and Artificial Systems: A Workshop Report." *arXiv* 2105.02198v1 [cs.AI].
- Noë, Alva. 2004. *Action in Perception, Representation and Mind*. Cambridge: MIT Press.
- Noë, Alva, and J. Kevin O'Regan. 2002. "On the Brain-Basis of Visual Consciousness: A Sensorimotor Account." In *Vision and Mind: Selected Readings in the Philosophy of Perception*, edited by Alva Noë and Evan Thompson, 567-98. Cambridge: MIT Press.

- O'Regan, Kevin. 2014. "The Explanatory Status of the Sensorimotor Approach to Phenomenal Consciousness, and Its Appeal to Cognition." In *Contemporary Sensorimotor Theory*, edited by John Mark Bishop and Andrew Martin, 23-35. Cham, Switzerland: Springer International Publishing Switzerland.
- Papineau, David. 1993. *Philosophical Naturalism*. Cambridge: Blackwell.
- Pearce, Trevor. 2015. "'Science Organized': Positivism and the Metaphysical Club, 1865-1875." *Journal of the History of Ideas* 76 (3):441-65.
- . 2020. *Pragmatism's Evolution: Organism and Environment in American Philosophy*. Chicago: University of Chicago Press.
- Phillips, D. C. 1971. "James, Dewey, and the Reflex Arc." *Journal of the History of Ideas* 32 (4):555-68.
- Prinz, Jesse. 2004. *Gut Reactions: A Perceptual Theory of Emotion*. New York: Oxford University Press.
- . Forthcoming. "Attention." In *Oxford Handbook of William James*, edited by Alexander Klein. New York: Oxford University Press.
- Prinz, Wolfgang, Daniel Dennett, and Natalie Sebanz. 2006. "Toward a Science of Volition." In *Disorders of Volition*, edited by Natalie Sebanz and Wolfgang Prinz, 1-16. Cambridge: MIT Press.
- Richardson, Robert D. 2006. *William James: In the Maelstrom of American Modernism*. Boston: Houghton Mifflin.
- Seigfried, Charlene Haddock. 1990a. "Poetic Invention and Scientific Observation: James's Model of 'Sympathetic Concrete Observation'." *Transactions of the Charles S. Peirce Society* 26 (1):115-30.
- . 1990b. *William James's Radical Reconstruction of Philosophy*. Albany: State University of New York Press.
- Sexton, Virginia Staudt. 1978. "American Psychology and Philosophy, 1876–1976: Alienation and Reconciliation." *The Journal of General Psychology* 99 (1):3-18.
- Shea, Christopher. 2008. "Against Intuition." *The Chronicle of Higher Education*, October 3, 9.
- Simon, Linda. 1998. *Genuine Reality: A Life of William James*. New York: Harcourt Brace.
- Strawson, Galen. 2009. *Selves: An Essay in Revisionary Metaphysics*. Oxford: Clarendon Press.
- Sytsma, Justin, and Jonathan Livengood. 2015. *The Theory and Practice of Experimental Philosophy*. Peterborough, Canada: Broadview Press.
- Van Gulick, Robert. 2018. "Consciousness." *The Stanford Encyclopedia of Philosophy*. Edited by Edward N. Zalta. Spring ed. <<https://plato.stanford.edu/archives/spr2018/entries/consciousness/>>.
- Wahl, Jean André. 1925. *The Pluralist Philosophies of England & America*. Translated by Fred Rothwell. London: Open Court.
- Wilshire, Bruce. 1968. *William James and Phenomenology: A Study of "the Principles of Psychology"*. Bloomington: Indiana University Press.
- Wood, Jackie Dale. 2021. "Motor Behavior of Mouse Large Intestine: A Minireview." *Neurogastroenterology & Motility* 33 (7):e14206.