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From Mind to Body and Back


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Without doubt, one of the most important questions that has kept philosophers busy, at least ever since the ancient Greeks, is the nature of the mind. Grappling with this question for ages, thinkers from various fields of inquiry have put forward their views concerning the mind and its nature. An interdisciplinary approach to the human mind has emerged in our contemporary era, where philosophy continuously supplements, inter alia, neurobiology and cognitive science with fresh perspectives on this issue. Philosophy’s role in advancing the debate surrounding it has certainly been central, and should be regarded as so by non-philosophers as well.

In a work recently published as part of the Cambridge Elements series, Janet Levin brings together the most important contemporary theories that attempt to answer the question of the mental. In her book, The Metaphysics of Mind (2022), she acknowledges that the metaphysical questions surrounding the mind should be distinguished from the epistemological and moral ones. While taking into consideration the implications of the epistemological and moral questions for the metaphysics of mind, Levin focuses primarily on the metaphysical questions.

1 Published online on February 10th, 2022. Published in print on March 10th, 2022.
To accomplish the task at hand, she analyzes Dualism, Type-Identity Theory, Role Functionalism, Russellian Monism and Eliminativism (or Illusionism). As she makes clear at the outset of her book, the aim of her text is not to argue for or against a certain metaphysical theory of mind, but rather to assess the merits and demerits of each theory objectively. A good metaphysics of mind should account for certain elements that are taken to be key to the controversy over the mental. These elements range from the qualitative character of sensations and perceptual experiences, the outer-directedness of intentional states (beliefs, desires, etc.) to — basically — the space the mind occupies in nature as a whole. In the following, I shall try to review each theory of mind separately, as approached by Levin. Then I will conclude my review with some critical remarks about the book.

I. Dualism

In its most basic form, Dualism is the theory that mental and physical states are two distinct phenomena. The main argument for this basic version posits that if the world were to be comprised merely of physical properties, “there would be no creatures with thoughts, sensations, volitions, or any other sort of mental states”. It follows from this argument that the world is comprised of some elements that go beyond the merely physical. This is what different versions of Dualism try to establish in their accounts. One variant of Dualism, Substance Dualism, proposes a demarcation between the physical world (including the body) and the mental world. This is the mind–body distinction. According to this version, the being of mental and physical states is tied to the being of immaterial substances or minds (sometimes also called souls), which are capable of thinking and willing. So, the body on its own cannot think or will. Substance Dualism is what René Descartes upheld in his Meditations, drawing a borderline between the thinking self and the body. According to the French philosopher, self-existence can be understood without resorting to the body containing it, and for that it is safe to assert that the self (mind) exists independently of the body. And, if the self exists independently of the body, then the self and body must be two distinct entities. In


short, Substance Dualism generally advocates a view in which immaterial substances lack spatial extension, with the latter being reserved for material, bodily things. There are, however, varieties of Substance Dualism that hold immaterial substances to be spatially extended. There have been a number of objections to Descartes' Cogito argument, with its premises eliciting a backlash from philosophers. One can deny the logical validity of Descartes' reasoning, but the importance of the Cogito argument is certainly undeniable. Descartes' Substance Dualism, if proven to be true, would back the long-standing intuition that conscious mental states are fundamentally distinct from physical states, and that the former cannot be reduced to the latter. David Chalmers would later term this "the hard problem of consciousness". Nonetheless, Substance Dualism raises a number of issues that undermine its philosophical coherence. Levin argues that Substance Dualism brings to the table a new, controversial type of substance, immaterial minds (or souls), which require a Herculean effort on the part of philosophers in order to explain how (and when) they came into existence, whether they are destructible or not, and how we can account for the apparent harmony between mind and body, vis-à-vis the physically caused feelings and sensations that we experience. Indeed, one of the main arguments against Substance Dualism is that it does not adequately accommodate the problem of "intermingling" (i.e. the interplay running in both directions between physical and mental states). It is not clear how an immaterial substance could cause a physical phenomenon, or how a physical phenomenon could bring about a mental state. Descartes failed to provide a satisfactory answer to this question, and this has forced proponents of Dualism to abandon his claim that mental and physical states are causally connected. Instead of conceding a causal relation between mental and physical states, some dualists argue that it is God's design that the mental and physical run in perfect parallel to each other, without there being any causality involved (Parallelism). Another group of dualists (inspired by Malebranche) argue that what we conceive of as a physical event causing a mental state is nothing but God devising the occurrence of a physical event as an occasion to set in motion a mental state (Occasionalism). However, invoking God to do away with the causal relation between physi-

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cal and mental states faces the same problems Descartes faced with God and the malicious demon. This argument is more of a theological argument than a philosophical one.

Another important question that warrants an explanation from Substance Dualism has to do with minds, and whether they are only possessed by humans. Descartes answered the latter positively, appealing to humans’ capacity to communicate linguistically and respond to various social scenarios. Consequently, if only humans possess both minds and bodies, animals and any non-human creatures possess only bodies. This, of course, has been criticized heavily, especially following reports of animal communication and environmentally appropriate responses. Machines also furnish certain examples of non-human entities that can be expected to communicate linguistically and respond to their environments. Furthermore, if minds are immaterial substances, and are accessible only to the individuals possessing them, then how can we say for sure, or with confidence, that someone is experiencing happiness, pain, or any other state that we usually ascribe to people? This is where another variety of Dualism comes in: namely, Property Dualism. This version of Dualism abandons the thesis of immaterial substances altogether, contending that there are only physical substances, which possess physical as well as irreducibly mental properties. The latter encompass properties with a phenomenal character (i.e. what it is like to have a certain feeling, or experience a certain quality), the representational character of volitions, thoughts, beliefs, and so on. By preserving the mental–physical distinction, and eliminating immaterial substances, Property Dualism has successfully averted the problems raised by Substance Dualism. With that said, Property Dualism does not do justice to the complexity of mental states. As construed by many property dualists (such as Huxley), mental states are causally powerless (or epiphenomenal), but this is obviously overstretched: “I feel pain in my hand, say ‘ouch’, and move it away from the burner; I want some ice and believe there is some in the freezer, and so I walk over to the freezer and open the door”. Describing these truths as merely illusionary is insufficient. All in all, while they have their merits, both Substance Dualism and Property Dualism raise serious issues. One problem they both seem to bring about revolves around mental properties and their alleged possession only by humans — or the claim that they first appear in humans. As was proposed by Descartes, only humans possess mental states, and God is to be credited with

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humans’ conscious mental states. Huxley, a proponent of Property Dualism, reckons that mental properties occur in humans by way of evolution. Panpsychism addresses exactly this problem. According to this version of Dualism, mental properties are not solely possessed by humans, and do not make their first appearance in the latter: they have been here all along, just like physical properties. The causal relation between physical and mental properties is also accounted for in this view. If mental and physical properties occur hand in hand, then they are responsible for the events that take place in the universe, including human behavior. But Panpsychism still advocates a world of two kinds of properties, physical and mental, and the main challenges that it faces concern “combination problems”. In other words, “it must explain how microscopic glimmers of consciousness combine to produce the familiar sensations and perceptual experiences of our everyday mental lives, and also how microscopic subjects with glimmers of consciousness combine to produce macroscopic subjects like ourselves”.  

II. The Type-Identity Theory

A fierce opponent of Dualism, Physicalism (or Materialism) contends that the world only contains one kind of properties, physical properties; hence, it reduces mental properties to mere physical ones. In this chapter, Levin explores the merits and demerits of a central theory within Physicalism, namely the Type-Identity Theory. Contemporary accounts of this variety posit that “for each type of mental state or process $M$, there is a type of brain state or process $B$ such that $M$ is identical with $B$ (e.g. pain is the stimulation of C-fibers)”.  

But is the Type-Identity Theory logically plausible? Invoking Leibniz’s law (if $A = B$, then $A$ and $B$ must possess the same properties), it appears that the Type-Identity Theory does not obey this law. Even if we assume that subjective, introspective reports are indeed identical with data from brain scans, it is still inconceivable that there could be a relation of identity with respect to properties obtaining between subjective experiences and brain-scan data, given that the latter are publicly accessible and spatially extended, whereas the former are accessible only subjectively and lack spatial extension. A stronger argument has been raised against Type-Identity Theory, the “Distinct Property Objection”, which adopts Frege’s semantic principle to put for-
ward an argument against mental-state–brain-state identity statements: “the only way that a posteriori identity statements of the form \( A = B \) can be true is for both \( A \) and \( B \) to denote their common referent \( R \) by being conceptually connected to descriptions that pick out distinct properties of that referent, properties whose existence ensures the truth, respectively, of "\( R \) is \( A \)" and "\( R \) is \( B \)"". ⁹ It has been argued that while this principle can be satisfied by "scientific identity statements", the same cannot be said for "mental–physical identity statements". Some physicalists suggest that mental-state terms be translated into “topic-neutral” statements. ¹⁰ A different problem raised against the Type-Identity Theory has to do with its scope, as it is argued that this variety neglects the psychological similarities between humans and non-human creatures who may share our mental states. ¹¹ A number of solutions have been suggested to this argument. For instance, it has been argued that mental states can be characterized in terms of a "disjunction" of physical properties (e.g., "pain is identical with either C-fiber stimulation or the relevant type of silicon-based state or the relevant type of electronic circuitry"). ¹² But this theory still remains "chauvinistic" (Block), as it excludes other creatures who don’t have the same internal state types as we do, even if they share our behavior.

### III. Role Functionalism

A popular response among Physicalists to the aforementioned problem, Role Functionalism, suggests that mental states be identified “with the (higher-level) property of being in some internal state or other that plays a certain role, or functions in a certain way, in a cognitive system”, ¹³ instead of identifying them (i.e. mental states) with a type or disjunction of physical properties. Role Functionalism is regarded as a further development of Philosophical Behaviorism, which

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⁹ LEVIN, The Metaphysics of Mind..., p. 16.


¹³ LEVIN, The Metaphysics of Mind..., p. 20.
proposes that mental states should not be identified with physical or non-physical states, but rather with the behavior that results from them (e.g., "S has a pain in her toe" is to be understood as "S is disposed (all things being equal) to wince, grimace, rub her toe, and ask for aspirin"). This view has many advantages: among others, it allows non-human creatures to have the same mental states as we do, even if they differ physically from us. It can also explain how we draw conclusions about others' mental states through merely observing their behavior. Nonetheless, Philosophical Behaviorism has its own downsides. Putnam has levelled a well-articulated argument against this view, pointing to the possibility of a society (of "super-Spartans") whose members have learned to suppress any feelings of pain, and hence exhibit no behavioral indications of it at all. We can also imagine a society of "perfect actors" who fake feelings of pain. In response, proponents of Role Functionalism argue that to regard an individual as having certain mental states is tantamount to saying that they possess lower-order mental states that behave in exactly the same ways. It should be noted that Role Functionalism does not rule out the idea that the states playing certain roles are non-physical, which raises the following question: Is Role Functionalism a variety of Physicalism, or a position opposed to the latter? Depending on the perspective one adopts, it can be either. On the one hand, it does not prevent nonphysical states from fulfilling the roles of mental states and, as such, cannot be admitted as a variety of Physicalism. On the other hand, while leaving the door open as regards their existence, it rejects the idea that nonphysical states can produce physical states. Therefore, nonphysical states cannot cause or change individual behavior, and this also means that there cannot be creatures endowed with nonphysical states fulfilling the same roles as our physical ones. As such, this version of Role Functionalism can be seen as a variety of Nonreductive Physicalism, which indicates that "each particular instance (or token) of a mental state is identical with an instance (or token) of some physical state or other, even though these instances are not tokens of the same physical type". However, while we may grant that Role Functionalism avoids many of the problems discussed previously, it is


16 LEVIN, The Metaphysics of Mind..., p. 23.
also subject to serious criticisms. A major argument against it is what Kim \(^\text{17}\) referred to as the “Causal Exclusion Argument”, which states that the causal efficacy of mental states is ignored in the behavioral manifestations of individuals: “if every physical event has a complete, sufficient physical cause — as is now generally believed — then my saying «ouch» and pulling my hand away must be caused by the physical, presumably neural, state that realizes pain in me. But then, it seems, it is the lower-level neural state that is doing all the causal work, and my being in pain, if this is identified with being in a higher-order functional state, is causally irrelevant”. \(^\text{18}\) Moreover, Role Functionalism faces another difficult challenge: namely, its preparedness in terms of resources to distinguish various types of mental states. This is especially directed toward the Lewisian commonsensical theory of mind, the argument being that a simplistic theory of mind, such as relies on our common “platitudes” concerning topic-neutral relations and causal roles, does not have the necessary tools to establish complex distinctions within mental states.

**IV. Does Consciousness Have a Place in Nature?**

In this section, Levin explores two types of arguments against Physicalism: Conceivability Arguments and Knowledge Arguments. Against Identity Theory, for instance, the Modal Argument, developed by Kripke, \(^\text{19}\) construes the modal status of possible worlds in such a way as to then be able to argue that a possible world where *C-fiber stimulation is not linked to pain* is conceivable; therefore, in that world, *pain is C-fiber stimulation* is false. A similar Conceivability Argument has been put forward by Chalmers, \(^\text{20}\) whose Zombie Argument threatens all varieties of Physicalism. According to Chalmers, zombies are conceivable, which makes them metaphysically possible, which then entails that Physicalism is false. Although they differ in some details, both Kripke’s and Chalmers’ arguments assert that “we can genuinely conceive of the existence of mental states in the absence of physical states (and vice versa), whereas we cannot genuinely conceive of the de-


nials of other scientific identity statements — and genuine conceivable provides evidence for possibility”. The second type of argument, the Knowledge Argument, proceeds from the premise that knowledge of the mental cannot be derived from knowledge of the physical, and that the mental is something over and above the physical. Two main versions of this have gained widespread recognition. There is the Bat Argument of Nagel, which assumes that there is something it is like to be a bat, but, because of bats’ and humans’ different perceptual mechanisms, we cannot have the same world experiences. Nagel argues that no knowledge of the physical mechanisms of a bat can tell us what it is like to be a bat. If that is the case, then there is something that goes beyond the physical, which, consequently, makes Physicalism false. In the similar Knowledge Argument put forward by Jackson, Mary, though possessing all the physical-functional data about color experience prior to her leaving the white-and-black room, fails to know what it is like to see red. As Jackson’s argument concludes, if there is a fact concerning human color experience that does not conform to the physical-functional, then Physicalism is false. There have been a number of responses to these arguments, but, as Levin points out, they all fail to adequately address the issues raised. There is even a divide, as regards the physical attainability of intentional states, which, like phenomenal states, pose serious difficulties for Physicalism.

V. Intentional States

Statements like I believe my cat is sick and I would love to visit Norway express “intentional” (also representational/propositional) attitudes. They represent something in the world (e.g., my sick cat, and Norway). Put briefly, they are about something. This is what Brentano established in his seminal account of intentionality. This theory of intentionality raises a central argument against Physicalism: namely, as Brentano argues, the directedness of consciousness toward mind-

21 LEVIN, The Metaphysics of Mind..., p. 31.


independent objects is exclusively characteristic of the mental (the “mark of the mental”). Therefore, no physical states can be said to possess intentionality. This is Brentano’s Thesis. Accordingly, we can distinguish between two types of intentionality: internalist and externalist. A prominent internalist theory, Conceptual Role Semantics (CRS), maintains that “the representational content of an intentional state can be identified with the role it plays in theoretical and practical reasoning”. This theory points to a crucial component in intentional states, the varying of their representational content, tracing that to the varying roles they play in theoretical and practical reasoning. For instance, my belief that my cat is sick and my desire to visit Norway have two different representational contents, in the sense that they have different effects on my inferences and my behavioral response. There are, however, major problems that CRS must deal with. For example, it is argued that the conceptual role cannot capture any distinctions in the varying things that intentional states represent. Even if the thoughts we have when I say “I’m tired” and when you say “I’m tired” are, based on the role they play in our reasoning, the same, they do not capture the same intentional content, because you and I are different. In addition, Putnam has developed a physicalist argument against the internalist conception of intentionality, arguing that meaning “ain’t in the head”, based on the Twin Earth argument. In response to this and other similar arguments, two types of representational content have been established: narrow (covering the psychological similarities between ourselves and others), and wide (evaluating whether intentional states are true, realized, etc.). Nevertheless, this (or any) “two-factor” view of representational content faces the difficulty of specifying the narrow content. A problem for internalist and externalist conceptions of intentionality alike revolves around the wide representational states, as regards the relations between an individual and the world. The externalists assert that meaning occurs in nature; thus, what “natural signs”, for instance, convey can be found in nature. However, there are many problems with this view, too, and this has prompted some philosophers to reject both Physicalism and Dualism about intentional and phenomenal states. They propose instead a different kind of theory: Russellian Monism.

VI. Russellian Monism

In this section, Levin moves on to an exploration of a different approach to the problem of the mental: Russellian Monism. So far, varieties of both Dualism and Physicalism have been briefly analyzed. Dualism is the thesis that the world is composed of two types of things, mental and physical. Physicalism contends that the world is composed of mere physical things. Therefore, Physicalism is a Monist account. The monist counterpart of Physicalism is Idealism, the thesis that the world is fundamentally mental. Levin acknowledges that a detailed investigation of Idealism would divert her attention from a proper metaphysics of mind, in that to analyze the scope of Idealism one would have to analyze how mere mental properties can give rise to ordinary things in the world (tables, chairs, etc.). However, this should not be understood as stating that these problems are completely unrelated. It is a major problem within the metaphysics of mind whether or not mental states are fundamental constituents of the world. Some philosophers suggest Neutral Monism as an alternative to both Physicalism and Idealism: “the thesis that the fundamental elements of the world are neither mental nor physical, but rather a “neutral” set of properties that can be combined in one way to produce physical objects”. In stating that the mental and the physical are comprised of the same elements that can be arranged in different ways, Neutral Monism proves to be more economical than Dualism. In addition, this view accounts for the causal relation between minds and bodies, and vice versa, since the two types of entities are derived from the same basic principles. As is the case with every theory of mind thus far, Neutral Monism faces some difficulties as regards its ability to establish that the basic elements are themselves definitely neutral, and not physical or mental. Many contemporary philosophers turn to a different version of Monism, namely Russellian Monism, for its ability to solve the mind-body problem and the hard problem of consciousness. Russellian Monism appeals to a distinction between dispositional properties and categorical properties. To elaborate, viewing a thing as physical means that it is fully describable by the laws of the physical sciences. The latter only describe the “structure and dynamics” (dispositions) of things. But the world cannot consist merely of dispositional properties. There must also be categorical properties that ground the dispositional properties. However, these categorical properties cannot be physical, since they are not...
fully describable by physical laws. Therefore, non-physical properties exist. Philosophers who oppose this distinction argue that it is perfectly conceivable to have ungrounded dispositional properties. Other philosophers maintain that both dispositional and categorical properties are physical, understood broadly. Proponents of this distinction even go so far as to state that categorical properties are directly involved in the phenomenal character of experiences. As has been previously claimed, Russellian Monism is said to have the capacity to solve the hard problem of consciousness. But, if we hold the categorical properties to be mere “thumbtacks” (properties whose sole role is to ground the dispositional properties), then it is not clear how this view can solve the hard problem of consciousness. The categorical properties must do more. Some philosophers argue that the categorical properties have some phenomenal character, which, if they are combined in a certain way, can give rise to phenomenal experiences, such as feeling pain or seeing purple. This is a version of Panpsychism, and it is debatable whether elementary particles have any phenomenal character at all. All things considered, Russellian Monism, although questioned by some — especially as regards its affinities with Dualism and Physicalism — puts forward a tenable distinction between properties. The distinction between dispositional and categorical properties is believed by many to be the right path toward solving the mind-body problem and the hard problem of consciousness.

VII. Eliminativism

In light of the strong arguments raised against Dualism, Physicalism and Russellian Monism, some philosophers have decided to adopt an eliminativist stance toward the problem of the mind. That is, proponents of Eliminativism argue that mental states do not exist. There is, however, a dispute among Eliminativists concerning the range of mental states, and what elements are to be eliminated, with qualia and mental states being among those widely viewed as having a question-


able status. The so-called Qualia Eliminativists direct their skepticism toward the alleged distinctive “feel” of mental states, and not mental states themselves. (That is, they are skeptical about the *quale* of seeing purple or feeling pain). But even if conscious experiences lack qualia, we can still talk about something it is like to have them. Physicalists, who argue that the mental is nothing over and above the physical, must account for qualia in a purely physical world. In response, Frankish provides a more recent eliminativist account of qualia, in which he posits that qualia are *misrepresentations* of certain properties. What we think is a distinctive feature of seeing purple or feeling pain is nothing but a “quasi-phenomenal” experience, where physical properties are misrepresented as phenomenal properties following an *introspective illusion*. However, this account of Illusionism sounds more reductionist than eliminativist. If it reduces qualia to physical properties, then it is a version of Physicalism, not Eliminativism. Apart from the threat they pose to Physicalism, Eliminativists have an extra motivation to eliminate qualia and mental states: namely, “skepticism about the possibility of explaining human behavior as the product of beliefs, desires, and the other intentional states that figure in our commonsense theory of mind”.

A prominent figure as regards *Intentional Eliminativism* is Churchland, who criticizes the attempts of our Folk Psychological theory to explain behavior by referring to mental states. Folk Psychology, as an empirical theory, has proven to be faulty, especially if contrasted with the findings of neurophysiology. Churchland’s elimination of intentional states in favor of a physical theory of behavior has been contested by many. For instance, Baker and Fodor uphold the essential role of intentional psy-

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chology. Meanwhile, Davidson suggests folk psychology be regarded as a normative theory instead of an empirical one. Dennett defends Folk Psychology’s role, indicating that it is useful as long as it equips us with “patterns” with which we can understand human behavior, and which can be further explained by lower-level accounts in the future. There are even philosophers who maintain that Folk Psychology is empirically founded and supported. These philosophers argue that Churchland’s criticism of Folk Psychology as failing to provide explanations for certain phenomena is unjust, as those phenomena do not fall within the explanatory scope of Folk Psychology (“creative imagination, intelligence differences between individuals, the psychological function of sleep, and motor skills”, etc.). They also point to a number of what count now as commonsense explanations, but which were originally derived from empirical investigations. Further, these philosophers argue that cognitive psychology, which tries to explain behavior by appealing to the relation between states and representational content, is better suited to accounting for generalizations pertaining to the causation of behavior than neurophysiology. “Thus, if the generalizations of Folk Psychology are approximations of at least a fragment of cognitive psychology, then it can be a genuinely explanatory theory”. More arguments have been raised as regards the explanatory role played by intentional folk psychology. Levin concludes this section with an open question: Will the novel ways of approaching intentional states be absorbed into our commonsense psychology someday? This would disprove Churchland’s argument that Folk Psychology runs contrary to empirical psychology.

VIII. Some Further Questions

Levin brings her informative book to a close with some further, more recent

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questions concerning the problem of the mental. Clark and Chalmers raise a thought-provoking question about the possibility of Extended Minds (i.e., minds that are outside the brain or head). They seek to determine whether cognitive processes can exist outside of the brain, and they give smartphones as an example of storing and information-retrieving devices that could be said to exist outside of it. As Levin notes, it is still too early to assert that retrieval devices, acting as extended mental states, have what is needed to function as standard mental states. Indeed, one objection to this is that the similarities between the two types of mental states are less than what some believe them to be. In response, proponents of the Extended Minds Thesis contend that, with accelerating technological developments, differences between extended and standard mental processes will be undermined, leaving only irrelevant differences intact. A further question that Levin highlights in this section has to do with "collective intentionality" — the thesis that entire communities can possess collective mental states that are irreducible to the states of the communities’ individuals. Investigating this problem may prove fruitful not only for the metaphysics of mind, but also for questions surrounding self-knowledge, knowledge of other minds, and moral assessment, as beliefs and desires lead to actions and it is a question whether collective communities or individuals should be held accountable for the consequences of their actions.

Critical Remarks

With all its merits, Levin’s book leaves a number of serious theories of mind either unaddressed or under-represented. As I mentioned at the outset of this review, philosophy has been in close collaboration with the cognitive sciences. Issues that have been predominantly raised by the philosophy of mind are now tackled by the latter. For instance, Levin’s book could have explored Bayesian models of the mental as instances of a cognitivist account of the mind built upon the findings presented by philosophers. To quote: "«Bayesian» is meant to be a placeholder for a set of interrelated principles, methods, and problem-solving procedures, which are unified by three tenets. First: uncertainty should be captured by a real-valued function that measures degrees of belief. Second: degrees
of belief, at any given time, ought to satisfy the axioms of probability theory. Third: degrees of belief, represented by determinate probabilities, ought to be updated in the light of new information, typically by the canonical rule of condition- alization”. One of the main Bayesian theories of mind is what is known as Predictive Processing, according to which the mind is essentially concerned with “prediction error minimization”. In other words, what the mind attempts to do is minimize the margin of “mismatch” between predictions of sensory inputs that are engendered internally and the real sensory inputs that are engendered externally.  

In addition, Levin’s book fails to explore a number of related Bayesian theories of mind. For instance, she does not explore the Free-Energy Principle (FEP), a pioneering theory that attempts to explain the mechanisms underlying all living systems. FEP was first put forward by Karl Friston, who has striven to establish a universal theory that purports to have the capacity to unravel the mysteries of all living systems, relying on physics. FEP suggests that “any self-organizing system that is at equilibrium with its environment must minimize its free energy”. An important concept here is “surprise”, which governs the way living organisms maintain their physical states. That is to say, a biological organism, such as the brain, has to keep its states within certain bounds, and thus maintain some sort of “homeostasis”. Put differently, this means that an organism needs to minimize the average surprise associated with the states it visits, and “[i]n the context of neuroscience, this implies that the brain becomes a model of the world in order to evaluate surprise in relation to model-based predictions”. There are other noteworthy Bayesian theories of mind also absent from Levin’s book, including the


Higher-Order State Space Approach,\(^{45}\) the Winning Hypothesis Account,\(^{46}\) and Predictive Global Neuronal Workspace Theory, to name just a few.\(^{47}\)

Another influential theory of mind not covered by Levin is Enactivism. Proponents of this theory view “mentality as rooted in engaged, embodied activity as opposed to detached forms of thought”.\(^{48}\) If that is correct, then our behavior and acting can tell us more about our minds than mere thinking does. In its initial conception, Enactivism aims to provide an alternative to the prevalent view that cognition consists in representation of an independent world (i.e. one independent of our cognitive and perceptual faculties) by means of a cognitive system whose existence is not bound to the world. For enactivists, cognition is “embodied action”.\(^{49}\) Enactivism puts forward a number of theses, of which the most important are: (a) that “the nervous system is an autonomous dynamic system”, in that it is not computational with regard to its processing of information, yet creates meaning; (b) that cognition is the practice of “skillful know-how” in the context of embodied action; and (c) that the world of cognitive beings is not an external world represented internally by their brains, but rather a “relational domain” enacted by their autonomous agency.\(^{50}\)

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\(^{50}\) Evan Thompson, *Mind in Life: Biology, Phenomenology, and the Sciences of the Mind*, Har-
These critical remarks are not meant to detract from Levin’s book. Given the latter’s length, it is quite understandable that its author has not delved more deeply into the issues mentioned above. Hence, the philosophical rigor and depth of this (relatively) short book certainly merit praise. The theories and arguments tackled there are of the utmost importance to the metaphysics of the mental. By and large, the book is both a comprehensive introduction to the mind–body problem, and a helpful guide to further, advanced research in this field.

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