the earth, and that the earth was spherical. The reality was that Europeans at that time were well aware the earth was spherical, and the major issue for Columbus and Spanish authorities was how long the trip would be and whether the ships could carry enough food and water for their crews. The myth relating to Columbus traces mostly to a highly fictionalized biography of him by Washington Irving, amplified by others who wanted to make Christians (especially Catholics) look bad by pushing the false idea of warfare between science and Christianity. Unfortunately, the myth has been very slow to die out.

Who is this book for? I could imagine a history of science course for upper-level undergraduate or graduate students based on it, or selected parts being assigned in such a course. The audience for the book, however, should be much larger. Readers with an interest in history of science or philosophy of science would probably find it interesting and would learn from it. Those who primarily want the bigger picture may want to skim over some details. Anyone who wonders how the spherical earth idea reached and was received by non-western cultures is encouraged to read the book.

Reviewed by Kyle Cudworth, former director, Yerkes Observatory, Williams Bay, WI, and professor emeritus of astronomy and astrophysics, The University of Chicago.

Philosophy of Science

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THE ELEPHANT AND THE BLIND: The Experience of Pure Consciousness—Philosophy, Science, and 500+ Experiential Reports by Thomas Metzinger. MIT Press, 2024. 648 pages. Paperback; $80.00. ISBN: 9780262547109.

What is consciousness and how can science fruitfully study it? In this book, Thomas Metzinger proposes that the experience of pure awareness occurs without "subjectivity" and will help science uncover the "core causal factors" underlying consciousness. Science can then build on this minimal model for a more comprehensive theory. However, consciousness studies face a major problem: "Three decades after the Association for the Scientific Study of Consciousness was founded in 1994, we still do not even know (or cannot agree on) what precisely it is that needs to be explained" (p. xiv). Toward a solution, Metzinger contends that pure awareness is the simplest kind of experience, namely, the experience of awareness *as such*. With this hypothesis, science might verify whether pure awareness is the phenomenal-neurological boundary between the conscious and the unconscious. Believing that meditation helps people access pure awareness, Metzinger surveyed over 1,400 meditators who have experienced this phenomenon, labelling this the minimal phenomenal experience project (MPEP) and, in this book, reports more than 500 of the 841 narratives from the project. The result: he identifies phenomenal markers that help neuroscience map the causal correlates common to all conscious experiences.

Grouping meditative reports by chapter, Metzinger describes experiences of awareness that come from diverse meditative practices. Though he includes statistical analysis (from the MPEP), he concentrates on filtering reports by qualitative criteria. In each chapter, he selects reports from the narrative part of the survey and then groups them into phenomenal categories. Metzinger investigates over thirty experiences, some of which overlap with ordinary wakeful life (e.g., peace). Others (e.g., luminosity) are less familiar. Several are even difficult to describe without paradoxical metaphor (e.g., timeless change). Intended for a general audience, the chapters are readable and, typically, brief. Since jargon is unavoidable, a glossary clarifies new and abstract concepts. Other virtues of the book: Metzinger proposes a methodology for neuroscience to isolate and reproduce pure awareness, and he also suggests philosophical lessons about how pure awareness informs the theory of evidence. Overall, his reflections might inspire psychology, neuroscience, and philosophy with new phenomenal concepts.

As his main contribution, Metzinger introduces minimal phenomenal experience (MPE) as a trustworthy way of investigating consciousness. Such experiences are the simplest kind —causally and experientially—that we in fact have. In their narrative responses, meditators report either no discernible mental contents (i.e., an experience without a noticeable object) or contents "along with the deeper nature of consciousness" (p. xiii). According to Metzinger, pure awareness is a candidate MPE. He speculates that pure awareness might be the experience of the capacity to know—but without any known object. In his scientific aim to isolate MPE, Metzinger makes two methodological assumptions: (1) Introspective knowledge defines the target for the scientific investigation of consciousness; and (2) if a state is experientially simple, its neurological basis must be correspondingly simple. Without these assumptions, his study cannot help science uncover the neuro-correlates of conscious experience.

Metzinger weaves three major themes throughout his book. First, pure awareness occurs as a global way of being conscious, without discernible contents, and, at times, as a state with ordinary experiences as contents. In full-absorption episodes, for example, meditators report being conscious but without thought and perception, without a localized body-experience, and without felt agency and self-awareness. Meditative experiences in which one is fully absorbed are ineffable but later reportable. If they are states of pure awareness, the only reportable feature is the quality of awareness. As a state

combined with recognizable contents, pure awareness transforms the meditator's perspective; for example, with heightened senses, one feels as though one sees the world as it is for the first time. The visual contents and the quality of awareness are both present. As its global modes and states suggest, if pure awareness involves the most generic phenomenal quality, then experiences are irreducible to contents specific to objects and their properties.

Second, pure awareness alters meditators' familiar embodied experience as thinking, active selves. Awareness, for example, widens as though the body expands. Bodily boundaries dissolve, attenuate, or form the limit of awareness, leading to a felt spatial expansion and oneness with everything. Senses merge, and the self-aware subject disappears. In particular, there is neither a spatiotemporal frame of self-reference nor the experience of a localized self who knows distinct objects. Ordinary wakeful experiences with their objects seem neither internal nor external. Everything but consciousness itself has a dreamlike virtuality. In addition, an impersonal observer—a "bigger" presence than the self—knows what one once knew as his or her wakeful self. Such "virtual" and "nondual" experiences, Metzinger believes, show that the purely aware are not self-aware. If so, being conscious doesn't necessarily involve self-awareness. In practice, a meditator can't mindfully observe the experience of pure awareness, which is just something one falls into and later recalls. Detractors might reply that meditators still have a perspective and are peripherally aware of themselves but without attending to themselves.[1]

Third, pure awareness combines with an experience of knowledge that is, given the above, independent of self-awareness. Based on this, Metzinger contends that the brain simulates our self-awareness, which is really a "complex hallucination" (pp. 80–81, 302–6, 353–71). Put differently, our internal "agent model" is a misleading "hologram," not a mental subject with self-knowledge. The "I" who thinks, perceives, plans, and acts is a fiction. Apparent experiences of the self don't merely fall short of knowledge; the purely aware experience their agent model *as a representation*. This internal modeling is normally transparent: a "virtual self appears, and it seems to be self-aware. Apparently, it really knows that it knows but the virtuality itself, the 'as if' quality is not experienced" (pp. 302–3). As the brain makes mere possibilities look real, a world outside us seems to appear and we experience "ourselves" so reliably that we have no experience of ourselves as a model.

Metzinger eliminates the self altogether from his ontology, a position that seems inconsistent with Christian teaching. The Bible addresses the nature of consciousness indirectly by assuming that we are moral agents and so capable of rational choice and personal knowledge.[2] We are significantly free—not only responsible for our actions but, at times, also worthy of praise and blame. We can, for example, resist our strongest urges for the sake of doing the right thing. A degree of free will justifies praise and blame—and, therefore, the possibility of reward, punishment, and atonement. Moreover, friendship with God is our greatest well-being. Friendships with good people and the shared worthy goals they presuppose involve self-knowledge and agency. If, as Metzinger claims, we don't have the mental properties that define personal agency and knowledge, Christian teachings that presuppose moral agency are false.

Despite Metzinger's careful research, I see no reason to accept his denial of the self, which implies that self-knowledge is merely apparent. His appeal to hallucinations is unconvincing for several reasons.[3] We can be fooled by non-veridical experiences, such as hallucinations. I can't always tell when I'm hallucinating. However, I can discover that I'm hallucinating X by investigating how X appears. Even if I can't *now* distinguish a hallucination from a veridical experience, it doesn't follow that they are indistinguishable and, therefore, the same experience. Moreover, hallucinations present properties—properties that the objects we hallucinate apparently have. If these properties are I-properties (e.g., purposes), they can't exist on their own. Whatever has them is an active, viewing subject—I or you. In addition, if meditators know their self-model *as* a model, they are still self-aware. No one can be aware of a model as such without also being aware of the thing modeled.

Why take meditative reports seriously, especially ones with religious framing that filter the experience? In answering this question, Metzinger implies that we can distinguish religious filters from the experience itself and thus sift the experience from its interpretation. After all, meditative reports are descriptively rich and arise out of diverse traditions. In his epilogue, however, Metzinger applies his findings about pure awareness to ethics and rejects the religious perspectives through which many meditators interpret their experiences. He believes that an ethic without religious belief, especially belief in the afterlife, is openminded. But without justifying his naturalism, Metzinger's stance remains ideology. Religious or not, ideology helps us integrate our experiences with our lives and, if true, clarifies those experiences. Religion doesn't necessarily distort them—although Metzinger claims otherwise.

Often overlooked by Western science, Metzinger explores features of pure experience that alter how we think about consciousness, especially the way it relates to the body, knowledge, and the self. The book is well worth the read for all interested in the phenomenology and science of consciousness.

Notes

[1]Brandon Rickabaugh and J. P. Moreland, *The Substance of Consciousness* (Wiley-Blackwell, 2024), 99–100.

[2]See Richard Swinburne, *Responsibility and Atonement* (Oxford University Press, 1989).

[3]See Walter Hopp, *Phenomenology* (Routledge, 2020).

Reviewed by Jonathan K. Metcalf, Department of Philosophy, Boston University, Boston, MA 02215.

Science and Faith

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CONJUNCTIVE EXPLANATIONS IN SCIENCE AND RELIGION by Diarmid A. Finnegan, David H. Glass, Mikael Leidenhag, and David N. Livingstone, eds. Routledge, 2023. 346 pages. Hardcover; $128.00. ISBN: 9781032139685. Ebook; $42.36. ISBN: 9781003251101.

"If scientists have explained a phenomenon, where's God?" The basic false forced choice underlying this question is that things happen either (1) because of divine intervention apart from nature's properties and processes, or (2) because of the operation of those properties and processes with no divine influence. This false forced choice underlies God-of-the-gaps reasoning: scientists' explanations leave God nothing to do. For instance, arguing against those who think that cognitive science explanations have done away with religion and God as superfluous, James Jones notes that "these findings do no such thing … The debunkers seem to be assuming that if natural processes are at work, nothing else can be. But no argument is offered to support that assumption" (quoted in Gijsbert van den Brink's essay, p. 218). This is an example of the false forced choice at work, an unexamined assumption of much of the sciences-faith literature. (Indeed, van den Brink seems to cede too much to this false forced choice too often.)

The edited collection, *Conjunctive Explanations in Science and Religion*, explores this milieu. The contributions are helpfully arranged in dialogue with essays and responses by pairs of authors. This arrangement invites the reader to join the conversation with open, critical ears to hear. Another strength of the book is the range of topics addressed by the authors: There are discussions of scientific and theological methodologies with respect to explanation, the question of design in evolutionary biology, consciousness, emergence, psychopathology and religious experience, role of scientific explanations in Christian faith, divine action, Ockham's razor, and how distinct scientific and religious explanations should be.

A weakness of the book is that most authors write and think in terms of "science" as a unitary explanatory enterprise instead of more accurately framing discussion in terms of multiple scientific disciplines—sciences (Alister McGrath's essay is a welcome exception). Explanations can vary widely across the subdisciplines of physics and among the fields of physics, biology, and psychology. The homogenizing of "science" in the abstract is at odds with the variety of scientific explanations authors deal with in specific cases of different disciplines. One could raise a similar complaint about the homogenizing term "religion" when the authors are dealing with different theological and experiential aspects of Christian faith (although David Brown's contribution seems to be an exception, focusing more on what is often critiqued as the "God of the philosophers").

A crucial complex question is how different explanations aimed at distinct questions relate to one another when focused on the same subject matter. An example is explaining why water is boiling in the tea kettle. A thermodynamics explanation would involve features such as heat, pressure, temperature, and volume of water. Meanwhile, a purposeful explanation would be in terms of my desire for some tea. These two explanations involve the same subject matter but are responding to different questions about the water boiling. A conjunctive explanation recognizes that thermodynamics and purpose questions are not only consistent with each other, but both explanations tell us more about the event in question than either explanation alone.

Although the book's authors typically do not develop this point (McGrath is an exception), scientists often engage in conjunctive explanations when there are multiple factors involved in phenomena (e.g., materials sciences, mechanics, electromagnetism, gravity, and thermodynamics in explaining an experiment and its outcomes). Moreover, it is always the case that scientific explanations leave out numerous factors and stability conditions defining the context making scientific explanations of phenomena possible. Philosophers of science have been helpful with filling in many unstated factors and conditions in scientific explanations. The implication is that conjunctive explanations in the sciences always involve more than just scientific materials and factors.

There also is no consensus about what a conjunctive explanation is (not surprising since there is no consensus about what an explanation is, whether in the sciences, theology, philosophy, or any other fields of inquiry). Several contributions illustrate that we are talking about different ways of knowing, the kinds of questions and explanations relevant to those ways of knowing, and how to put all this into fruitful conversations. Most pressing for the contributors to this book—and more controversial among Christians and non-Christians—is what it means to relate different explanations in sciences-faith contexts: If we have a well-attested scientific explanation for some phenomenon, the diversity of life on Earth for instance, what, if anything, can a theological explanation add (explored from a historical perspective in David Livingstone's and Rope Kojonen's essays)?