

“The Nature of Contemplative and Scientific Discoveries”

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For millennia, contemplatives from diverse religious traditions claim to have made discoveries about the nature of the mind, consciousness, and their role in the natural world. While there are many significant differences in the doctrines of the world’s religions, many of the deepest insights made by contemplatives have been intersubjectively corroborated not only within individual traditions but across traditions, suggesting that, like scientific discoveries, they may point to universal truths that transcend the frameworks of any one belief system. While the notion of “discovery” is common to third-person scientific inquiry, it may appear misplaced in terms of first-person contemplative inquiry. In what sense do any contemplative experiences or truth-claims warrant the label “discovery”? If their alleged discoveries are not of the same sort as scientific discoveries, how do they differ?

Star-gazing versus Astronomy

Let us first turn to the nature of scientific discoveries made at the dawn of the Scientific Revolution. One might argue that, prior to the emergence of the science of astronomy, no discoveries had been made about the Sun, Moon, stars and planets simply by gazing at the sky. Although pre-scientific societies could distinguish between stars and planets, for example, they had no knowledge of the actual nature of celestial bodies.

Such star-gazing with the naked eye is comparable to people with no rigorous contemplative training simply noticing their thoughts, emotions, and impulses. In an ordinary way, they are discovering aspects of their minds that are invisible to behavioral and neuroscientific observations. That is, behaviorists can observe the *objective behavioral expressions* of mental processes, but not the *subjective mental events themselves*. Likewise, neuroscientists can measure the *neural correlates* of mental activities, but these, by themselves, give no clue as to the nature of the correlated mental states and processes. In an amateur way, people with no rigorous introspective training can make discoveries about their own minds during the waking state, and even while dreaming at night. But this is nothing more than folk psychology, analogous to the simplest form of star-gazing.

With respect to the sky, everything changed when Galileo found the appropriate technology for turning star-gazing into a rigorous scientific discipline of precise observation with his use of the telescope. But when he reported his “discoveries,” he was met with resistance from multiple quarters. For example, his friend, Cesare Cremonini, a professor of Aristotelian thought, refused to look through a telescope, insisting that Galileo’s so-called discoveries couldn’t be true as they contradicted the authoritative views of Aristotle. Similar objections have been made against the observations of contemplatives when they claim to discover facts about the mind that contradict the beliefs of materialism.

A more compelling objection was made by Galileo’s opponent, Giulio Libri. He refused to look through a telescope, being convinced that any observations might be optical illusions that had nothing to do with the actual nature of celestial bodies. A modern-day example of this kind of thinking would be the claim that whether we are looking at the stars and planets with the naked eye or through a telescope, all we really see are visual images generated in dependence upon the brain. These visual images must be related to the celestial bodies that exist objectively

in space (independently of our observations and concepts) but in a mysterious and possibly unknowable way.

The “Hard Problem”

The relationship between objective physical entities and our subjective sensory experiences of them is analogous to what the philosopher David Chalmers has called the “hard problem.” The “easy problem” is to identify correlations between subjectively experienced mental activities and their corresponding brain activities. The hard problem is to understand the actual nature of those correlations. For example, do mental events occur simultaneously with their correlated brain events? If this were so it would suggest that brain states and subjective experience are in fact the same natural phenomena viewed from two different perspectives—the first-person subjective perspective and the third-person objective perspective. However, according to research conducted by the physiologist Benjamin Libet, brain activities occur slightly before their corresponding mental activities. This is strong evidence against them being identical.

If brain activities do indeed precede their correlated subjective experiences, does this imply that the former cause the latter? And if so, what is the nature of that causation? If the neural processes *causally contribute* to the emergence of mental processes, are the former (embedded within the context of the body as a whole and its interactions with the external environment) solely responsible for generating the latter, or might there be other influences?

Subjective mental experiences cannot themselves be measured by objective scientific means, and since they display no physical characteristics when observed introspectively (e.g., no mass, physical dimensions, location, or velocity), it seems clear they cannot (in and of themselves) be physical. According to physics and chemistry, many physical systems give rise to emergent properties (e.g., temperature, fluidity, and solidity) that are not found in the individual atoms and molecules that make up those systems. But the emergent properties of physical systems are *invariably of a physical nature as well*. There being no scientific evidence for non-physical properties emerging from physical processes is a tautology—third-person scientific inquiry, using physical instruments of measurement, can detect only physical phenomena. This means there can be no scientific grounds for asserting that subjective experiences are physical or for speculating that non-physical mental events, including consciousness itself, “emerge” from physical processes in the brain or anywhere else.

According to the fundamental principle of the conservation of mass-energy throughout the known universe, configurations of mass-energy arise only from prior configurations of mass-energy. Physical entities never arise from nothing and never turn into nothing. This is a universal law. Subjective mental processes certainly arise *in dependence* upon their correlated neural processes, but since they are evidently non-physical, *it is unscientific to assert categorically that they arise from the brain*. There is simply no credible evidence to support this conclusion, and, in fact, there are compelling reasons to reject it—subjective experience arising from the brain would violate a fundamental law of the universe.

The “Illusion of Knowledge”

There is a widespread (and largely unexamined) belief within the mainstream scientific community that all states of consciousness and mental processes arise from the brain. It is clear that this belief is an implication of an uncritical commitment to the metaphysics of materialism.

With the materialist assumption in place, it becomes a given “truth” that all natural phenomena consist of matter and their emergent properties. As with most ideological biases, this “truth” turns out not to be based on any compelling empirical evidence.

On the contrary, while there is compelling scientific evidence that the brain *conditions* consciousness and *contributes to* the formation of mental processes, there is no evidence that such subjective experiences actually *emerge from* the brain. But if they don’t, are we to believe that, unlike any other natural phenomena, they *emerge from nothing* during the formation of a human fetus and *transform into nothing* at death? These questions have been widely overlooked by many scientists due to what the historian Daniel Boorstin calls the “illusion of knowledge,” namely, the illusion that the mind-body problem has already been solved.

The eminent 19th-century biologist Thomas Huxley commented on the implausibility of consciousness emerging from the brain, likening it to a genie emerging from a magical lamp. Since his time, science has made little progress in understanding the nature of consciousness. As the contemporary neuroscientist Donald Hoffman explains, “Now, Huxley knew that brain activity and conscious experiences are correlated, but he didn’t know why. To the science of his day, it was a mystery. In the years since Huxley, science has learned a lot about brain activity, but the relationship between brain activity and conscious experiences is still a mystery.” What very few scientists are willing to admit, however, is that while the nature of consciousness and the mind-body problem remain a mystery *to them*, profound discoveries regarding both these topics may already have been made and intersubjectively corroborated by contemplatives, using their own sophisticated methods of first-person inquiry.

As mentioned above, the “hard problem” (the relationship between subjective sensory experience and objective physical phenomena) is still a mystery to conventional science. There is clear, compelling evidence that no simple one-to-one correlation exists between the colors we see and their corresponding frequencies of light waves. Similarly, there is no clear evidence of a one-to-one correlation between the sounds we hear and the frequencies of their correlated sound waves. The actual nature of these correlations remains as mysterious as those of the mind and brain.

This problem becomes even deeper when we look at recent advances in theoretical physics. Nowadays, a growing number of prominent physicists have given up on the assumption that space-time (let alone matter and energy as traditionally conceived) exists objectively in the fundamental fabric of reality. If space-time itself disappears from the domain of a supposedly independent, objective universe, then the appearances generated by the Hubble telescope will in turn not lead to discoveries about the *real* nature of galaxies. It may turn out that “scientific discovery” becomes as problematic for the physical sciences as “contemplative discovery” has been for the mind sciences.

That said, no one familiar with the enormous success of astronomy seriously doubts that observations made with telescopes can tell us a great deal about the universe. Likewise, no one who is deeply trained in serious contemplative inquiry doubts that genuine discoveries have been made. These include inter-subjectively validated discoveries about the fundamental causes of mental distress and genuine happiness, about the origins of the human mind and about what happens to consciousness at death. Religious fundamentalists may doubt the myriad discoveries made by scientists and insist that the Earth is less than ten thousand years old. In a similar way, scientific materialists, with a different set of fundamentalist assumptions, may also doubt that contemplatives have actually discovered anything about the nature of the mind and assert that it is really nothing more than a function of the brain. Religious and scientific fundamentalism share

the same process of dogmatism—a blind confidence that one’s group alone holds the key to understanding reality.

Validating Introspection

A major limitation of folk introspective psychology is that it assumes that introspection is infallible. William James, the father of modern psychological science, laid out very clear guidelines for the kind of validation that would make introspection reliable. He expresses the guiding principle of introspective psychology as a science when he writes, “*Introspective Observation is what we have to rely on first and foremost and always*. The word introspection need hardly be defined—it means, of course, the looking into our own minds and reporting what we there discover. *Everyone agrees that we there discover states of consciousness*.” He then crucially adds, “Introspection is difficult and fallible; and ... the difficulty is simply that of all observation of whatever kind. ... The only safeguard is in the final consensus of our farther knowledge about the thing in question, later views correcting earlier ones, until at last the harmony of a consistent system is reached.”

Due to the ideological and methodological constraints of materialist assumptions, the cognitive sciences have still failed to produce a “telescope for the mind,” namely, a form of highly-trained meditative concentration, *imbued with refined skills of introspection and mindfulness*.

William James’ claim made more than a century ago still holds true: “Psychology, indeed, is today hardly more than what physics was before Galileo, what chemistry was before Lavoisier. It is a mass of phenomenal description, gossip, and myth, including, however, real material enough to justify one in the hope that with judgment and good-will on the part of those interested, its study may be so organized even now as to become worthy of the name of natural science at no very distant day.”

A major step towards developing a natural science of the mind, as James envisioned, is to recognize how thoroughly illusory *all* our perceptions are. Whether we are looking outwards upon our intersubjective objective world or inwards upon our own individual subjective mental experiences, what we see is filtered by our conceptions. Donald Hoffman comments in this regard, “None of our perceptions are veridical. All of our perceptions have evolved to guide adaptive behaviors, but this evolution did not result in us seeing parts of reality truly. We see none of reality truly. Our perceptions are simply a species-specific interface that we must take seriously, because it has evolved to help us survive and reproduce. But none of it is literally true.” He explains that the reason for the misleading nature of our perceptions is this: “There is no way to remove the observer—us—from our perception of the world, which is created through our sensory processing and through the way we think and reason. Our perception—and hence the observations upon which our theories are based—is not direct, but rather is shaped by a kind of lens...”

The “Black Box” Problem

The assumption of metaphysical realism (held widely within the natural sciences), that sensory appearances correspond to an independently existent physical world, is fundamentally problematic and unprovable. The electromagnetic waves that strike our retinas and the soundwaves that strike our ears are contributing factors interacting with brain functions and

consciousness to bring about appearances of colors and sound. We are experiencing *qualia*, or sensory impressions, that we believe somehow “re-present” what exists “out there,” independently of our perceptions. But the qualia themselves do not exist in the physical space outside our brains or inside our brains. They, like other mental events, cannot be measured physically and bear no physical attributes, and they are not themselves physical. The common assumption is that they are effects produced in dependence upon physical processes in the independent, objective world. In fact, though, what we actually perceive are only the subjective effects and never the “underlying” objective causes.

This is a classic example of what philosophers call the “black box” problem. A paradigmatic black box is a system to which observers have only external access: they can perceive the external effects but never peer inside the system and perceive the internal causes. It is indeed possible to infer the existence of a cause based on the perception of its effect. For example, when we see smoke billowing from afar, we rightly infer it originates from fire. But to make such a valid inference, it must be based on the prior knowledge of having seen that fire produces smoke, and the more general knowledge that smoke can be produced if and only if fire is present. If we *never* perceive fire, let alone the ubiquitous truth that smoke is always produced by some kind of combustion, we cannot infer the existence of fire based on the perception of smoke.

Herein lies the problem of trying to infer the causes in the physical world of what generates our subjective, sensory experiences of the universe. We never perceive the physical causes themselves, independently of our measurements or our sensory experiences of them. *We do not even know for sure that physical processes, either inside or outside the brain, are always necessary to produce subjective appearances.*

In other words, we can never look inside the black box of the physical world “out there,” but rather are limited to perceiving only our internal sensory and mental impressions “in here.” This revelation makes the absolute distinction of “out there” and “in here” all the more dubious. We cannot logically infer even the existence of a physical universe that exists independently of all our measurements and subjective experience.

It turns out that our experiences of the physical world are *even more illusory* than our introspective experiences of our own minds. Sensory appearances, such as the colors of things in our physical environment, seem to be “out there,” independent of our perceptions of them, whereas conscious mental processes and images (at least to a contemplative) rightly appear *as* subjective and precisely *as* being dependent upon our awareness of them.

Discerning the Illusion

The exception to this veridical awareness of subjective mental events is the non-lucid dream, in which one does not know that one is dreaming. During such normal dreams, one mentally perceives what appear to be external objects, people, and events that seem to exist independently of one’s awareness of them. By mistakenly reifying oneself as existing “over here” and other things in a dream as existing “over there,” we are vulnerable to all manner of psychological and even (seemingly) physical kinds of distress while dreaming. Only after waking up do we realize that we were deluded, and that all our suffering was self-generated.

In contrast, when one masters the skill of lucid dreaming—recognizing the dream as a dream while still dreaming—one knows that oneself and everything else appearing in the dream are nothing more than empty appearances, incapable of inflicting harm.

By developing such discerning introspective skills regarding one's subjective mental states and processes during the daytime, contemplatives have discovered a similar freedom from mental distress during the waking state. The 19th-century Tibetan contemplative Lerab Lingpa writes that by mastering the ability to observe mental events without identifying with them or reifying them, there arises, "a nonconceptual sense that nothing can harm your mind, regardless of whether or not thoughts have ceased." When one emerges from meditation, the trait-effect of such practice is that, "the afflictions of your own mindstream will be subdued, you will gain the autonomy of not succumbing to them, and your mind will constantly be calm and composed."

Validating Discoveries

We could say that *all* contemplative and scientific discoveries are first-person experiences. Third-person discoveries are simply those first-person discoveries that have been intersubjectively corroborated. Contemplatives commonly make observations of their own mental states, and these yield discoveries that can be intersubjectively corroborated by other contemplatives who have sufficiently trained their skills of concentration and introspection. The same is true of highly trained scientists who make discoveries that can be corroborated by other researchers with sufficient training in the theory and practice of their discipline.

A field of inquiry that mediates between our typical understanding of objective scientific inquiry and subjective contemplative inquiry is mathematics. For example, Sir Andrew Wiles discovered a proof to Fermat's last theorem, and it was corroborated by other sufficiently trained mathematicians. People with no formal mathematical training may assume that mathematicians don't actually "discover" anything. They just formulate theorems and other concoctions of their own minds. But the most renowned of contemporary mathematicians, Roger Penrose, argues in his book, *The Emperor's New Mind*, that exceptionally gifted mathematicians are able to "visit" a Platonic world of pure ideas, where they make genuine discoveries. In line with other distinguished mathematicians, Penrose has developed a universal mathematical framework simultaneously representing the material world of physical reality and the Platonic world of mathematical reality.

Using methods situated between those of natural scientists and those of contemplatives, mathematicians make genuine discoveries that they can intersubjectively validate or repudiate. This is equally true of scientists and of highly trained, expert contemplatives. Contemplatives have made many discoveries about the nature of the mind and consciousness, which in many cases have been intersubjectively corroborated, even across diverse religious traditions. But to those with no such rigorous contemplative training or realization, contemplatives' discoveries will appear to be no more than concoctions of their own minds. Reading about meditation, without being rigorously trained or experienced in this discipline, provides no more insight into what can and cannot be discovered through meditation than someone who reads about mathematics or physics, but has never trained in their methods and practice.

As Eurocentric civilization begins to appreciate the depth and breadth of the contemplative traditions of Asia and the insights and discoveries they claim to have made, we are poised to take a fresh look at the wealth of insights gleaned over the centuries by Jewish, Christian, and Muslim contemplatives as well. Their important contributions to human knowledge have also been widely overlooked or dismissed ever since the rise of modern science. As we learn to integrate contemplative and scientific discoveries about the whole of reality—and

not just about some imagined external world comprised solely of matter and energy—we may catalyze a true revolution in the mind sciences, with repercussions for all other branches of the natural sciences. In addition, we may help bring about a renaissance in contemplative inquiry for all the major religions of the world. Through this union of religious and scientific insight, humanity may be poised to re-envision the meaning and potentials of human existence. By drawing on the natural resources of the human spirit, we may together preserve and enhance human civilization in ways never before imagined.