

EDITORIAL

Science Doesn't Dictate What's "Impossible"DOI: <https://doi.org/10.31275/2019/1693>

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In this issue we present Commentaries on a remarkably simplistic critique of psi research published recently by Arthur Reber and James Alcock—hereafter R&A (Reber & Alcock, 2019a, 2019b). I believe the Commentary rebuttals that follow in this issue, from Cardena and others, effectively demolish R&A's critique. But I also believe a few additional points are worth making. These highlight not only R&A's ignorance of—indeed, refusal to consider—relevant data, but also their general conceptual naivete. And I'll focus primarily on R&A's assertion that alleged psi phenomena are impossible.

Note, R&A aren't merely making the likewise inadequate but at least superficially more sophisticated claim that psi phenomena are initially improbable relative to some well-supported background theory. But even if we were to concede that the phenomena (including small-scale ESP and PK) are initially improbable relative to an accepted background theory, we're still not compelled to deny their reality. We need only show that the direct evidence in their favor overrides their initial and conditional improbability. That, I believe, is easy to do, but of course R&A are fortified by their refusal to consider the data. Moreover (as some of the Commentaries note), R&A greatly overestimate the level of support for what they take to be the background physical theory.

In any case, the more relevant points for now are these. First, there are serious reasons for thinking that no well-supported broad scientific theory (e.g., quantum physics, or the general or special theories of relativity) precludes the existence of any specific *mental* phenomenon, normal or paranormal. Arguably (I think persuasively), those phenomena are simply outside the domain of physics. I'll return to this point shortly. For that matter, the existence of ESP is compatible even with theories of perception

in psychology. Of course, those theories are much more limited in scope than the grand theories of physics or (say) evolutionary theory. So even if theories of perception did prohibit the existence of ESP, the failure of that prediction would matter little to science as a whole. But in fact, those theories merely *describe* the operation of the familiar or known sense modalities. It's simply not their business to legislate the full range of possible forms of information acquisition or organic interaction. So if evidence leads us to accept the existence of previously unacknowledged perceptual modalities, psychology would simply find its domain expanded.

Moreover, according to one plausible and influential view in the philosophy of science, initially advanced (I think) by Michael Scriven (Scriven, 1961) and then later Nancy Cartwright (Cartwright, 1983, 1999), many (if not most) scientific laws are approximations based on ideal cases and oversimplified boundary conditions (including single causes), and as such they don't strictly apply to real-life situations, which at the very least usually include multiple causes. But even if we concede that physical laws might still be approximately true of real-life situations (including those in which intentions or other mental states are causes), in the case of paranormal phenomena we have no decent idea what the relevant and possibly countervailing boundary conditions might be. That's one reason why psi researchers are dogged by the notorious "source of psi" problem. Therefore, we have no decent idea whether an apparently violated law should be abandoned or whether the law is still useful but only with respect to a different set of boundary conditions. Besides (as I mention in more detail below), insofar as mental processes play a causal role in ESP and PK, the laws of physics may not apply to them at all, and the phenomena would pose no more of a threat to the laws of physics than would the facts of ordinary memory or volition. (For example, see Braude [2014, Chapter 1] for an account of why a reductive analysis of memory is untenable.)

Nevertheless, at least as far as PK is concerned, some facts concerning physical mediumship (and poltergeist phenomena) suggest that, insofar as PK is a physical process, fundamental physical laws—including conservation laws—may actually be obeyed. For example, the literature contains many reports of cold breezes preceding physical phenomena (Adare, 1871/1976, pp. 1, 2, 7; Cox, 2004; Crookes, 1874, p. 86; Price, 1924; Randall, 1982, pp. 145–146; Theobald, 1887, pp. 45, 48, 62), and some researchers have reported a measured increase in a medium's weight by the amount of force needed to raise a levitated table (Courtier, 1908; Crawford, 1918).¹

As far as ESP is concerned, there's no reason to suppose (as many have claimed) that its apparent insensitivity to distance suggests a violation of Maxwell's equations, even if the phenomenon is mediated by a form of radiation. As Dobbs long ago observed (Dobbs, 1967), conventional forms of radiation (e.g., short-wave signals) sometimes display similarly anomalous behavior with distance, and typically these anomalies are explained relative to exceptional sorts of boundary conditions, such as ducting. In principle, one would think that ESP's apparent insensitivity to distance might be accommodated along similar lines. (For more on the problems plaguing brain-radio or energy-transfer theories of ESP, see Braude [2002].)

Of course, psi phenomena *do* seem to be proscribed by various philosophical theses—for example, Broad's basic limiting principles (Braude, 2002; Broad, 1962). But no principle entailing the impossibility of psi is universally accepted, even among the scientifically sophisticated. Even more important, the basic limiting principles (and their ilk) are neither presupposed nor implied by any fundamental scientific theory. For example, if scientists were to agree that consciousness survives bodily death, the main body of scientific theories, and certainly the global theories of physics, would remain largely unaffected. Relativity and quantum physics (say) are mute on the topic of survival. In fact, if we established the reality of postmortem survival, most areas of science would continue to operate as they had all along. For instance, neither geology nor astronomy would have to find new approaches to their respective domains. Nor would physiology (at least apart from untenably reductionist elements of the brain sciences) be forced to describe bodily functions in novel ways. And, for the most part, the social sciences could preserve their approaches to the study of human behavior.

Some scientists are both open to the possibility of psi and don't see it as posing a threat either to fundamental scientific principles or to good science generally (as our other commentators in this journal issue also observe). They take the attitude that if evidence shows the phenomena to be genuine, we'll eventually figure out how to explain them either in terms of current scientific theory or an extension or evolution thereof. In fact, scientists who actually accept psi phenomena often analyze them in conventional scientific terms—that is, in terms of the background theory (usually physics). For reasons discussed below, I would say that's not a particularly good idea. But the important point is that competent, practicing scientists don't all believe that positing the existence of psi is somehow anti-scientific and thus can be safely ignored. Apparently, then, the impossibility of psi (or improbability

of psi relative to the background theory) is not as conspicuous as R&A glibly suggest.

Therefore, it's certainly not obvious that psi phenomena violate fundamental laws or theories of physics, even to the extent that the phenomena are physical. Moreover, it's not clear that physics *should* have anything of great interest to say regarding psi phenomena, because it's unclear why physics should have anything of great interest to say about organic activities generally and psychological processes in particular. For one thing, the laws of physics (including conservation laws) strictly speaking apply only to impersonal or mechanical forces—that is, to physical systems and interactions abstracted from the realm of intention. There's no reason to think that physics must have anything at all to say about the ranges of phenomena ignored in, or simply not susceptible to, that particular process of abstraction. But those limitations reveal no defect in physics. They merely illustrate the obvious point that the process of abstraction and the associated activity of theory construction at best yield only part of a more complex picture.

In fact, it's frequently the case that we don't consider formal laws to be violated or false just because we discover that they have exceptions. In fact, these apparent violations are what we should expect if (as noted above) scientific laws are approximations and “there are no rigorous solutions for real life problems” (Cartwright, 1983, p. 13). Moreover, in some cases the exceptions show only that the domain of the laws is limited.

For example, in logic, “if ___, then ___” constructions unanalyzable in terms of the material conditional (such as subjunctive conditionals) don't falsify the standard laws of sentential logic. They demonstrate merely that standard systems of logic are not properly interpreted as applying to those expressions. Indeed, logicians have devised various alternative logics to apply precisely to linguistic domains resistant to otherwise valuable sentential and predicate logic (e.g., deontic, epistemic, temporal, and other modal logics). Similarly, although the addition of 7cc of water to 5cc of alcohol yields less than 12cc of liquid, that fact reveals no defect in arithmetic. It shows merely that the formal system of arithmetic doesn't apply straightforwardly to the addition of water to alcohol. And again, the properties of objects in curved space don't violate or falsify the principles of Euclidean geometry. They reveal merely that the Euclidean system applies, strictly speaking, only to plane surfaces. Analogously, I suggest, the principles of physics are bound to have their limitations. More specifically, they're not threatened by their failure to apply exactly to non-ideal conditions or by phenomena falling outside their domain.

Moreover, even if humans are physical systems that don't survive bodily death, they and their activities may be characterized and analyzed on many different levels of description, at least some of which may not be translatable without residue into any other. For example, humans may be described on levels at which their intentional or vital properties are ignored. Thus, they may be described as if they were inert or nonliving systems like sticks and stones. Here, physics may indeed have something to say about us, although what it describes won't be anything distinctively human. After all, both humans and rocks, if thrown from a building, will obey the laws of gravitation. But people may also be described with respect to psychological regularities, such as manipulativeness, optimism, immaturity, the tendency to be intimidated by intellectuals, the inability to sustain a meaningful relationship, and fatigue with shallow and snarky parapsychological skeptics. In these cases, there are totally persuasive reasons for thinking that the associated levels of description have no further analysis or underlying structure and that the regularities lie beyond the domain of physics (I discuss that issue in more detail elsewhere [Braude, 2014, especially Chapter 3]). But since it seems as if a great deal of psi functioning involves processes or regularities that must be characterized in psychological terms, it's moot (to say the least) whether psi phenomena pose any threat to physics. Physics may be as irrelevant to parapsychology as it is to psychology (see also Fodor, 1981).

The only way I can see a psi phenomenon threatening the fabric of science is the way in which practically any psychological process or regularity poses a threat—namely, by undermining the view that physics is the fundamental branch of science or at least prime contender for that position. In fact, if clear thinking were to reign, we'd witness the abandonment of the view that *any* branch of science is fundamental. Physics would be regarded as neither more nor less fundamental than biology or psychology, at least some of whose laws and descriptive categories will be absorbed by no other branch of science. Granted, to concede this would be a major step for many people. But it needn't shatter one's faith in the theoretical integrity of physics. All that needs to change is the belief in the reducibility of all other sciences to physics—that is, a certain general conception of the structure of science as a whole. The laws of physics can remain intact (although as anyone with even a modest grasp of history realizes, those principles continue to evolve). So neither volition and memory on the one hand, nor ESP and PK on the other, should force the rejection of (say) the theory of relativity or undermine the accuracy and utility of the mathematics of quantum physics. Instead, global

physical theories could simply be embedded within a different philosophical and scientific nexus.

To put it mildly, then, it hardly looks promising to claim that psi phenomena are empirically impossible. To say that a phenomenon *P* is empirically impossible is to claim that *P* is incompatible with the laws of this world (though there may be possible worlds in which *P* occurs). But what are the laws of this world? All we ever have to go on are the scientific theories of the day. But of course (and as is noted as well in the Commentaries later in this issue), science may undergo minor or substantial theoretical revision (as it has in the past), and some future scientific theory may countenance phenomena not embraced by current science. So the claim that psi is empirically impossible presumably means that psi phenomena violate principles, not just of current scientific theory, but also of any successful evolution of current science. The claim, therefore, seems to rest on a personal intuition about the future course of scientific development—specifically, that future science will never countenance psi phenomena. But there's little reason for according much respect to that intuition. Indeed, the history of science cautions us against treating it as anything more than one of many competing intuitions, or perhaps as a parochial or undernourished belief concerning the limits of the empirically possible.

Not surprisingly, parapsychologists have long been wary of this kind of metaphysical smugness. F. W. H. Myers, lamenting the lack of dispassionate scientific curiosity among critics of parapsychology, remarked,

... let certain of our correspondents note that "intuitions and deep perceptions" can cut both ways, and that while their own intuitions as to the truth of certain tenets may be so cogent that they deem it superfluous to aid our plodding inquiry, other people's intuitions may make for just the opposite view; and where is the intuitive umpire who shall settle it between them? (Myers, 1890, p. 250)

And Ducasse, paraphrasing C. D. Broad, once wrote,

... scientists who regard the phenomena investigated by psychical researchers as impossible seem ... to confuse the Author of Nature with the Editor of the scientific periodical *Nature*; or at any rate they seem to suppose that there can be no productions of the former which would not be accepted for publication by the latter! (Ducasse, 1956, p. 147)

Note

¹ I'm grateful to Carlos Alvarado for help with the references in this paragraph.

—STEPHEN E. BRAUDE

References

- Adare, V. (1871/1976). *Experiences in spiritualism with D. D. Home*. New York: Arno Press.
- Braude, S. E. (2002). *ESP and psychokinesis: A philosophical examination* (Rev. ed.). Parkland, FL: Brown Walker Press.
- Braude, S. E. (2014). *Crimes of reason: On mind, nature, & the paranormal*. Lanham, MD: Rowman & Littlefield.
- Broad, C. D. (1962). *Lectures on psychical research: Incorporating the Perrott lectures given in Cambridge University in 1959 and 1960.* London: Routledge & Kegan Paul. [Reprinted by Routledge, 2011.]
- Cartwright, N. (1983). *How the laws of physics lie*. Oxford, UK: Oxford University Press. [Reprinted Oxford Scholarship Online: November 2003; doi:10.1093/0198247044.001.0001]
- Cartwright, N. (1999). *The dappled world: A study of the boundaries of science*. Cambridge, UK: Cambridge University Press.
- Courtier, J. (1908). Rapport sur les séances d'Eusapia Palladino à l'Institut Général Psychologique. *Bulletin de l'Institut Général Psychologique*, 8, 415–546.
- Cox, W. E. (2004). *Psi physics: A scientific investigation of recurrent psychokinesis related to Dr. Neihardt's sorrat*. Rockport, ME: Penobscot Press.
- Crawford, W. J. (1918). *The reality of psychic phenomena: Raps, Levitations, etc.* New York: E. P. Dutton. [Reprinted, Mokelumne Hill, CA: Health Research, 1970.]
- Crookes, W. (1874). *Researches in the phenomena of spiritualism*. London: J. Burns.
- Dobbs, A. (1967). The feasibility of a physical theory of ESP. In J. R. Smythies (Ed.), *Science and ESP* (pp. 225–254). London: Routledge & Kegan Paul.
- Ducasse, C. J. (1956). Science, scientists, and psychical research. *Journal of the American Society for Psychical Research*, 50(4), 142–147.
- Fodor, J. A. (1981). *RePresentations: Philosophical essays on the foundations of cognitive science*. Cambridge, MA: MIT Press.
- Myers, F. W. H. (1890). Review of *The gift of D. D. Home*. *Proceedings of the Society for Psychical Research*, 4, 249–252.
- Price, H. (1924). Stella C.: A record of thirteen sittings for thermo-psychic and other experiments. *Journal of the American Society for Psychical Research*, 18(5), 305–362.
- Randall, J. L. (1982). *Psychokinesis: A study of paranormal forces through the ages*. London: Souvenir Press.
- Reber, A. S., & Alcock, J. E. (2019a, July/August). Searching for the impossible: Parapsychology's elusive quest. *American Psychologist*. Advance online publication. doi:<https://dx.doi.org/10.1037/amp0000486>
- Reber, A. S., & Alcock, J. E. (2019b, July/August). Why parapsychological claims cannot be true. *Skeptical Inquirer*, 43(4), 8–10.

- Scriven, M. (1961). The key property of physical laws—Inaccuracy. In H. Feigl & G. Maxwell (Eds.), *Current issues in the philosophy of science—Proceedings of Section L of the American Association for the Advancement of Sciences, 1959* (pp. 91–104). New York: Holt, Rinehart and Winston.
- Theobald, M. (1887). *Spirit workers in the home circle: An autobiographic narrative of psychic phenomena in family daily life, extending over a period of twenty years*. London: T. Fisher Unwin.