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COMMENTARY

“The Data Are Irrelevant”: Response to Reber and Alcock (2019)

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Abstract—The rebuttal by Reber and Alcock (2019a,b) to an umbrella review of multiple meta-analyses on the evidence for parapsychological (psi) phenomena (Cardeña 2018) did not engage deliberately with its data or analyses. Instead, the authors proposed that because they and some physicists consider psi phenomena to be impossible, “the data are irrelevant” (Reber & Alcock 2019b). After presenting some background information, this Commentary discusses how: 1) Reber and Alcock’s disregard for the data goes against a core tenet of science, 2) eminent physicists have not considered psi phenomena to be incompatible with their discipline and some have even proposed theories to explain it, so no definitive conclusion can be advanced with regard to the possibility or impossibility of psi phenomena based on physics, and 3) Reber and Alcock misrepresent the history and current status of psi research.

Keywords: parapsychology—psi—physics—philosophy of science

Background

In August of 2018, the flagship journal of the American Psychological Association (APA), *American Psychologist* (*AP*), published an umbrella review of meta-analysis of the experimental evidence for parapsychological (psi) phenomena (Cardeña 2018). Because in that article I concluded that the evidence across time and research paradigms was comparable to that for accepted phenomena in psychology, medicine, and other disciplines, it was a given that some anti-psi authors (I do not call them skeptics because their position is not one of doubt but of certainty) would cry “foul” at the audacity of *AP*. After all, this “bastion of psi propaganda” had already published an outrageous number of papers on psi: one by a past APA President (Murphy

1958) giving an overview of the field at that time, and another by the then Chair of the Psychology Department at Yale University (Child 1985) providing a meta-analysis supportive of a series of dream-psi studies.

Although I do not believe that *AP* published any correspondence about my article, it accepted a paper by Reber and Alcock (2019a), in which they criticized the field and my article (see also their non-peer-reviewed paper for *Skeptical Inquirer* [Reber & Alcock 2019b]).

After reading their contributions, I submitted a commentary to *AP* arguing that I had the right to respond to what was essentially a rebuttal of my paper. *AP* disagreed and rejected my commentary partly because they did not think that their paper was a rebuttal, and partly because they thought that my commentary was of the nature of “he said, she said.” Although I disagree with the *AP*’s rationale for rejecting my commentary, it must be said that in the process of editing my 2018 article the associate editor and reviewers were very demanding but fair, and that they helped me raise its level of quality. What follows is a slightly longer version of the commentary I sent to *AP*, although I think that the best argument I have is simply to ask the reader to go through my original paper and Reber and Alcock’s (2019a,b) responses, and compare the levels of evidence, argumentation, and professional respect.

Commentary

In a sense, parapsychologists should welcome a paper by Professors Arthur S. Reber and James E. Alcock (2019a) rebutting an umbrella review of meta-analyses showing longitudinal and cross-research support for parapsychological (psi) phenomena (Cardeña 2018). They might have scrutinized the data, analyses, and methods, debated their strengths and weakness, and proposed an alternative, non-psi hypothesis or re-analysis to account for the data. They did neither, but offered instead their assertion that psi is impossible and “the data are irrelevant” (Reber & Alcock 2019b). This Commentary focuses on three major problems with their position:

First, Reber and Alcock’s (2019a,b) refusal to consider the target paper’s data and analyses, and their a priori conclusion that psi is impossible, run counter to the scientific method, which involves an open but critical inquiry, based on data derived from empirical testing of hypotheses derived from observations and/or theoretical predictions. The great attribute of the scientific method is that, at least aspirationally, its claim to knowledge does not depend on authority, a sacred text, or authors’ metaphysical preferences. Furthermore, Reber and Alcock’s opinion is a minority one among scientists. In five surveys conducted to that point, only 14%, 10%, 3%, 4%, and 8.5% of scientists stated that psi was impossible (McClenon 1984:139–

140). Had science followed Reber and Alcock's logic, it would not have accepted relativity, quantum mechanics, or other new discoveries because some scientists at the time probably thought that they were impossible and the new data "irrelevant". In contrast, the history of science shows that all of the sciences, including physics, periodically undergo conceptual shifts that account for previously unexplained observations, and this has not made "the entire scientific enterprise . . . fatally compromised" (Reber & Alcock 2019a:3; for information on other catastrophizing statements see Cardeña 2015b). What Reber and Alcock offer instead of the critical openness of the scientific enterprise is a "Catch-22" (see Joseph Heller's novel of that title), an oxymoronic stance in which they conclude that "parapsychological research has failed to yield evidence to support [it]" while simultaneously refusing to look at that evidence. Even a psi-skeptic has criticized Reber and Alcock for their view of science as a closed system, and provided other examples of "definitive" physical pronouncements that turned out not to be so (<http://www.skeptophilia.com/2019/08/the-realm-of-impossible.html>). Child (1987, pp. 222–223) described another Catch-22 by psi critic Hyman, who required that before considering an anomalous result there should already be a very developed scientific context for it, which of course cannot happen unless there is prior research on the topic. . . . And even a psi-skeptic has criticized Reber and Alcock for their view of science as a closed system, and provided other examples of "definitive" physical pronouncements that turned out not to be so (<http://www.skeptophilia.com/2019/08/the-realm-of-impossible.html>).

Second, Reber and Alcock (2019a), despite not being physicists, disregarded those physicists cited in Cardeña (2018) who have advanced theories of psi. They concluded instead that psi is impossible because it would violate the principles of physics. They wrote (2019b) that two unnamed "experts in quantum mechanics" vetted their commentary and they cited a blog entry by a physicist to bolster their case. The Cardeña (2018) paper was also vetted, in his case by three experts (Professors at Cambridge, Queen Mary University of London, and UC Berkeley, one of them a Nobel prizewinner in physics), as mentioned in a footnote of the article. These physicists and other scientists do not believe that psi phenomena are necessarily incompatible with physics (or, specifically, with causality, the arrow of time, thermodynamics, or the inverse square law), either in its current form or in an expansion into a more general paradigm that would encompass phenomena in the natural world such as meaning and consciousness. Eminent scientists from the past who have at least been open to the possibility of psi include Nobelists Marie and Pierre Curie, Einstein, Josephson, Planck, Wigner, Lord Rayleigh, and Thomson,

and quantum physicists of very considerable stature: Bell, Bohm, and Costa de Beauregard. The last one, basing his conclusion on Einsteinian and QM physics, concluded that “today’s physics allows for the existence of the so-called ‘paranormal’ phenomena of telepathy, precognition, and psychokinesis” (Costa de Beauregard 1998:315; see also his 2001 paper on this issue). There is also a very long list of mainstream illustrious scientists and other authors who have supported psi research in the past and today (Cardeña 2014, 2015a).

This does not mean necessarily that the physicists who endorse psi phenomena are right, but it shows that the plausibility of psi given current physics is very much in contention, and that definitive statements by psychologists (but also by physicists) should be taken with great reservation. Even within mainstream hard science, what was once considered to be “impossible” has turned out to be very real. For instance, although at one point “Violating Dalton’s dicta [about the atom immutability] . . . became a scientific high crime” (Gensler 1987:86), the discovery of radiation by Becquerel, Marie Curie, and Pierre Curie (the last two, incidentally, took part in psychical research) showed that elements could be transformed into other elements.

Third, Reber and Alcock consistently misrepresent the psi field and its findings. Here are two examples of many: a) “A novel methodology is introduced but, when findings are not replicated, is discarded” (Reber & Alcock 2019b). In contrast, the Cardeña (2018) paper showed that the same psi methods have been used and replicated for decades and to a similar degree as in psychology and medicine. Psi research has also revealed significant patterns, for instance that techniques to alter consciousness produce larger and more significant effects than testing participants in the ordinary state; b) Reber and Alcock (2019a:6) discard Daryl Bem’s data because he used RAs (research assistants) and conclude that “one can give little credence to findings . . . that came from Bem’s lab,” but fail to mention that even excluding them there is a significant effect for independent replications ($z = 4.16$, $p = 1.1 \times 10^{-5}$; Bem, Tressoldi, Rabeyron, & Duggan 2016), not to mention the insubstantiality of their contention that because a researcher had RAs collect data those data are untrustworthy. If this criterion were to be applied across the board, many studies in various disciplines would have to be considered invalid, but Reber and Alcock fail to mention this inconvenient implication of their criticism. Alcock has a long history of basing his pronouncements on secondary sources and misrepresenting the facts in psi studies (cf. Child, 1985).

Reber and Alcock (2019b) also write “Why, we wondered, are researchers still running experiments, using ever more sophisticated statistical analyses,”

even though one of them had concluded earlier (but apparently forgotten): "[Psi researchers] should [not] abandon parapsychological research, but . . . they should take seriously the methodological critiques provided by knowledgeable critics" (Alcock 2010:32), a position that psi research adopted from its inception. What Reber, Alcock, and other (but not all) critics of psi do is repeat the same tropes that have been used for decades, and which have been effective mostly because of the "illusory truth effect," in which statements become believed not for their merits but because they are repeated often enough (cf. Hertwig, Gigerenzer, & Hoffrage 1997). Or as Lewis Carroll remarked in *The Hunt of the Snark*: "What I tell you three times is true."

As for Reber and Alcock's (2019a,b) use of an adynaton (a rhetorical hyperbole to express impossibility), phrased by them as "pigs cannot fly," they got it wrong on two accounts. First, the adynaton would be "pigs can fly," not its opposite (by the way, mathematician Lewis Carroll also referred to this image in his *Through the Looking Glass*: "And whether pigs have wings"). But far more important is that whereas no one I know or have read has mentioned witnessing flying pigs, majorities in general surveys for more than a century (for a review see Watt & Tierney 2014) have testified to having experienced ostensible psi phenomena. In a recent paper, 48% of scientists endorsed the item: "Known something about the future that you had no normal way to know," similar to the percentage of the general population sample (Wahbeh, Radin, Mossbridge, Vieten, & Delorme 2018). That these are not delusional beliefs is supported by the meta-analyses I reviewed and the general lack of relation between anomalous or extraordinary experiences and poor mental health (for a review see Cardeña, Lynn, & Krippner 2017). Instead of discussing the relevant research, Reber and Alcock borrow from the critics' till the strategy of using a snarky phrase to evoke ridicule, rather than engaging in serious and respectful scientific dialogue.

Informed readers can reasonably disagree as to how persuasive they find the evidence for psi. Honest difference of opinion on the interpretation of research findings does not damage but strengthens the scientific process, but a refusal to consider data because they run counter to a scientist's belief system does damage science, no matter the belief system held. In the words of William James (1920:248): "there is no source of deception in the investigation of nature which can compare with a fixed belief that certain kinds of phenomena are *impossible* (emphasis in the original)."

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