

The Demarcation of Parapsychology: History, Controversies and Future Prospects

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Abstract

Parapsychology has not only a long history, but also its enthusiastic proponents and detractors within the scientific community. With the professionalization of parapsychology in 1927, criticism of the discipline soon began to be heard. This history includes many controversies that led to the rejection of parapsychology as a social science. This rejection resulted mostly from poor scientific standards that did not meet the requirements for inclusion among the social sciences, and reflected a process of demarcation within the social sciences. However, this process leads to what could be called “a demarcation problem.” There seem to be a number of different criteria for distinguishing pseudo-sciences from what are considered legitimate sciences. In light of this demarcation problem, few social scientists support parapsychology and they provide a variety of reasons for their rejection. Concerning the future of parapsychology, opinions remain divergent. While some scientists believe that parapsychology can never become a science without improving its scientific methods, others plead for the integration of parapsychology into the social sciences. All in all, it seems that parapsychology would have to vastly improve its scientific standards before receiving wide acceptance as a social science.

Keywords: *parapsychology, history, demarcation problem, controversies, future prospects*

Introduction

Year after year, surveys reveal that many people believe in the existence of paranormal phenomena due to their personal experiences (Alcock, 2003). Paranormal experiences are equivalent to experiences in which a happening cannot be explained by any conventional understanding of the way the world works (i.e. psychic experiences) (Broughton, 1991). It is the organized research of these psychic experiences that is usually related to the term “parapsychology” (Broughton, 1991).

Parapsychology is the scientific study of experiences which are out of the realm of human capabilities. These psychic experiences indicate the operation of factors unknown to orthodox sciences (Irwin, 1999). Parapsychology thereby refers to the strictly experimental approaches to the study of psychic phenomena (Broughton, 1991). The three principal methods in parapsychology are case studies, experiments and field investigations (Broughton, 1991).

Furthermore, parapsychology has a classification system of paranormal phenomena. Extrasensory perception (ESP) and psychokinesis (PK) are the names of the fundamental categories of phenomena in parapsychology (Broughton, 1991; Evans, 1996; Irwin, 1999). Where ESP usually refers to the receptive aspect of paranormal phenomena, PK refers to their expressive aspect (Irwin, 1999). ESP can be described as the ability to acquire information without depending on logical inference or use the ordinary senses of the body (Broughton, 1991). In contrast, the literal translation of PK is “movement by the mind or psyche” (Irwin, 1999) or “soul motion” (Broughton, 1991), and refers to the direct mental influence on a physical system (Irwin, 1999). These two aspects of parapsychology are usually combined

under the term psi phenomena, or psi (Broughton, 1991; Evans, 1996). Because of the wealth of documentation on ESP, most of the content in this review article will reflect on ESP.

There are several methods to distinguish sciences from pseudo-sciences, and these lead to different conceptions of demarcation. This process is usually referred to as the demarcation problem (Derksen, 1993; Pinch, 1979). To illustrate the demarcation problem and other controversies in parapsychology, different aspects of the field will be discussed. These issues will be evaluated in light of the demarcation problem, and a distinction will be drawn between a science and a pseudo-science. This might show concrete flaws in demarcation which can help researchers to redefine concrete and central guidelines for the demarcation of sciences. After discussing the demarcation problem and its manifestations in parapsychology, the future prospects of the field will be discussed.

The History of Parapsychology

Though the birth of parapsychology is generally dated back to 1882, the year in which the Society for Psychical Research [SPR] was officially constituted (Broughton, 1991; Irwin, 1999), close examination reveals a much longer history of examining parapsychological phenomena (Broughton, 1991). According to the Greek historian Herodotus, the first parapsychological experiment on record was conducted around 550 B. C. In addition, some of the best documented early reports of paranormal phenomena derive from the Middle Ages. During that historical period, the Catholic Church developed strict standards for evaluating reports of miracles (Broughton, 1991). These investigations could be the start of what we now call parapsychological research.

However, parapsychology as a self-proclaimed science begins with the SPR. The aim of those who founded the SPR was to scientifically investigate the large body of debatable phenomena, such as spiritual phenomena, without prejudice (Broughton, 1991). One of their initial tasks was to develop exact criteria for the collection of reports on spontaneous parapsychological experiences (Irwin, 1999). The most enduring contribution of the SPR was the collection of apparition cases (e.g. appearances of living beings without material stimuli to explain the perception) published in 1886 as *Phantasms of the Living*. This book established a methodology for case studies and an evaluation of eyewitness testimonies which remained valid for at least fifty years (Broughton, 1991). After an initial spurt of energy immediately following SPR's founding, the quantity of paranormal research declined during the subsequent 50 (Broughton, 1991; Irwin, 1999).

Though scholars regard the founding of the SPR as the beginning of parapsychology as a social science, professionalization of the discipline did not occur until 1927. This is the year in which J.B. Rhine and L.E. Rhine started their work at Duke University in North Carolina. During this period, the Rhines introduced the idea that psychical research could only progress as long as the science was experimental (Broughton, 1991). Despite the early activity in parapsychological research, the investigations regarding the authenticity of ESP had a negligible impact on science before 1930 (Irwin, 1999). In the summer of 1930, J.B. Rhine started his own research (Broughton, 1991). He developed the classical ESP cards and the techniques for their use, a methodology which became fundamentally important for modern experimental parapsychology. These cards were to be applicable to a statistical random-guessing model, and were therefore used to identify "legitimate" clairvoyance. By asking respondents which card was or would be chosen by the researcher, psychic phenomena such as telepathy (i.e. knowing which card the researcher has in mind) and clairvoyance (i.e. knowing which card will be chosen) could be measured. (Irwin, 1999). Another experimental psychologist, K. Zener, produced small alterations in the cards after which the well-known ESP symbols were created (Broughton, 1991; Irwin, 1999).

In 1934 a report of the research on ESP that had been conducted until that time was published as *Extra-Sensory Perception*. The publication of this work was a landmark in the history of psychical research (Broughton, 1991). The main function of the publication was to show how the ESP hypothesis could be approached in a scientific manner (Irwin, 1999). Though the initial response to the book was generally favorable, there was also some criticism (Broughton, 1991; Irwin, 1999). Around that same time PK studies were developed, and the overall parapsychological research became a legitimate subject of discussion in the media (Broughton, 1991). The *Journal of Parapsychology* began publication in 1937, and in the same year the Zenith Radio Corporation began a series of nationwide broadcasts in the US about psychic phenomena, especially ESP. The massive publicity that resulted, led in turn to renewed criticism of parapsychology (Broughton, 1991).

Parapsychology gained a renewed measure of acceptance in some quarters in 1940 through a new book: *ESP-60* (Broughton, 1991; Irwin, 1999). *ESP-60* was a collaborative work of nearly all researchers in the Duke University Parapsychology Laboratory. Most criticism of parapsychology that had been offered until that point was taken into account and an attempt was made to show how the criticism could not explain the results of the best six parapsychological experiments that had been conducted. This book resulted in a far more positive response from scientists than J.B. Rhines' early publication had received. However, criticism remained and the academic battles were not over. The professionalization of parapsychology brought with it major controversies, which led to the rejection of parapsychology as a social science (Broughton, 1991). These controversies will be discussed in the next paragraph, and highlights the problems of accepting parapsychology as a science.

Controversies of Parapsychology

There are number of accepted opinions concerning the distinction between science and pseudo-science (Derksen, 1993). A science relies on logic and uses correlational thinking (i.e. thought patterns used to determine the strength of relationships between variables) whereas a pseudo-science suppresses or distorts unfavorable data, has a poor formal background and uses little mathematics or logic. Another important distinction is that science proposes and tests new hypotheses while pseudo-science relies on anecdotal evidence (Mousseau, 2003). Four main principles are prominent in social sciences as regards the scientific method: (1) isolation (i.e. isolation of causal factors), (2) repeatability, (3) quantifiability (i.e., description of variables in terms of measurable units) and (4) theoretical plausibility (Evans, 1996). These principles of the scientific method seem to be lacking in parapsychology in a number of important respects.

It seems that parapsychology is lacking an essential and appropriate subject matter, which means that the discipline lacks a core knowledge, construct, and mechanism base (Alcock, 2003). Some other important problems of parapsychology related to the four main principles of the scientific method will be discussed next.

One problem has to do with reliability (Alcock, 2003; Evans, 1996). Alcock (2003) states that replicability (the core of reliability) is only useful when all researchers provided with the right equipment are able to reproduce results. However, only the researchers who believe in parapsychological phenomena can replicate the results, which is a problem concerning the reliability of parapsychology as a science (Alcock, 2003).

Furthermore there seems to be a lack of predictability in parapsychology. Parapsychological researchers in general do not produce predictions before running tests. But if psychic experiences are real there should be some form of predictability (Alcock, 2003). This need for predictability is in line with the conception that science proposes and tests new hypotheses while pseudo-science relies on anecdotal evidence (Mousseau, 2003), suggesting

that parapsychology is a pseudo-science. These problems thus seem to contribute to the rejection of parapsychology as a science.

Another problem in parapsychology is the absence of explanatory mechanisms (Evans, 1996). This also highlights the missing mechanism base in the subject matter of parapsychology (Alcock, 2003). ESP and PK research provide no explanation, but describe an anomalous event for which a scientific explanation, or mechanism, is unknown. Although many parapsychologists find statistical evidence for anomalies, the reality of the anomalies will not be established unless someone shows the psychical mechanisms that are active during these anomalies (Evans, 1996). For example, telepathy only occurs in the absence of any normal mechanism that could account for it. Parapsychology seems to be the only objective inquiry in which phenomena are negatively defined. In other words, a phenomenon is defined as “parapsychological” if “normal” explanations are ruled out (Alcock, 2003).

The demarcation problem and parapsychology

Demarcation refers to the setting of boundaries between scientific *findings* and the mere *opinions* of others. It is particularly important that knowledge emerging from existing disciplines be qualified as scientific, in contrast to opinions, beliefs, assertion, etc. which do not merit such a classification (Abma, 2011). The demarcation problem refers to instances in which there is no solid criterion to separate a pseudo-science from a legitimate science. In such instances, demarcation is difficult to achieve (Derksen, 1993).

This demarcation problem arises in the context of the rejection of parapsychology. An important hypothesis in the rejection of parapsychology as a social science seems to be the fraud hypothesis. This is the most prominent counter-explanation for parapsychology (Pinch, 1979). Though the fraud hypothesis seems to be preferred over the acceptance of psychic phenomena, the hypothesis should be interpreted with caution. The usual method in this hypothesis is to interpret parapsychological research as fraud involves searching for a normal explanation for the results, thereby excluding the psychic explanation that is held to be legitimate by advocates of parapsychology (Evans, 1996; Pinch, 1979). This means that the paranormal explanation for phenomena is falsified (Pinch, 1979). However, some researchers devise methods to explain results in terms of the normal with explanations that are extremely unlikely to occur (Pinch, 1979). The difference, and also the problem, of the fraud hypothesis in parapsychology and fraud in other sciences seems to be that the hypothesis is leveled at a whole discipline (Pinch, 1979).

Another problem is that the fraud hypothesis seems highly accepted, and that there is little critical research on its legitimacy. Therefore, it is possible that the rejection of parapsychology is a result of cultural marginality (Pinch, 1979). Though little critical research has been conducted (Pinch, 1979), some critics of parapsychology, such as Hyman, stated that the fraud hypothesis is neither scientific nor helpful (Broughton, 1991). Hyman thus seems to agree that the fraud hypothesis is not sufficient for explaining the limitations of parapsychology. Though contributing to the exclusion of the fraud hypothesis (Broughton, 1991), Hyman remains one of the prominent critics of parapsychology (Irwin, 1999).

Popper's criterion of falsification is another concept contributing to the idea that the rejection of parapsychology is not solely scientific. This criterion states that a theory can only be scientific when it can be refuted (Popper 1983 as cited in Buskes, 2003). Returning to the fraud hypothesis, it seems that there always remains a way to find a normal explanation for results (Pinch, 1979). Therefore, in Popper's terms, the fraud hypothesis seems unfalsifiable. There thus seems to be a controversy concerning the rejection of parapsychology as a social science, reflecting the demarcation problem. While scientists such as Alcock make the case that parapsychology is a pseudo-science, other scientists such as Pinch are more critical of the rejection of parapsychology as a social science.

What does the future hold for parapsychology?

The history of parapsychology and its most important controversies have been discussed. Now a prospect for the future of this field will be constructed. Parapsychology is currently rejected as a social science. Despite this rejection, parapsychology is still active in small circles. An important scientist currently active in parapsychology is R. Sheldrake (Walach et al., 2009).

Sheldrake (2013) discusses the problem of consciousness. According to Sheldrake (2013) this problem exists because sciences are currently constructed in terms of materialism, which argues that everything in this world is material or physical. However consciousness exists while not being material or physical, illustrating the main problem of materialism (Sheldrake, 2013). This statement should be considered with caution. An important contradiction to Sheldrake's (2013) conception of the scientific approach is culture, which is more abstract (i.e., in reference to phenomena such as values and beliefs) than material in nature. The fact that there has been scientific research concerning the philosophy of culture seems to refute Sheldrake's (2013) view that the sciences are exclusively materialistic (Boomkens, 2003).

A solution to the problem of materialism in the social sciences was offered by Strawson (2006). He argues that physicalism (i.e. the view that the real world consists only of the physical world) should not include mental as well as physical phenomena. The idea that even every molecule has some form of consciousness (i.e. panpsychism) should therefore be included in materialism (Strawson, 2006). Sheldrake (2013) thus concludes that materialism as traditionally understood is out of date, and that the sciences are currently entering a new phase. The retreat of materialism will, in Sheldrake's view, lead to new opportunities for dialogue, debates and research in the social sciences (Sheldrake, 2013).

In line with this conception is the opinion of Radin (2005). He states that by 2050, parapsychology will no longer exist as a separate science, and instead will be integrated into other social science disciplines. The greatest challenge that parapsychology will present to the world is the realization that subjective and objective may not be so different at all (Radin, 2005). This conception seems rather extreme, even following the current developments regarding the fundamental bases of the social sciences.

There seems to be reason to believe in a less strict dualism between the psychic and the physical (Sheldrake, 2013; Strawson, 2006), but the scientific impairments of parapsychology that Alcock (2003) and Evans (1996) describe remain. Furthermore, the process of demarcation is a long process of setting boundaries (Abma, 2011). Since parapsychology is rejected as a social science, it could take a long time before boundaries are established for the discipline. Hyman (2010) agrees, saying that "parapsychology will succeed in its quest to demonstrate its communications anomaly only when it can generate specific hypotheses that predict patterns of outcomes that are consistent, lawful, and independently replicable by parapsychologist and others" (Hyman, 2010, p. 490). These critical notes, along with the boundary work in the demarcation of social sciences, show the difficulties concerning parapsychology which will delay, and possibly forever prevent, the return of parapsychology as a social science.

Conclusion

The history of parapsychology, as well as its limitations, demarcation problem, and future prospects, have been discussed in this review article. The fortunes of parapsychology have varied over time, from periods with lots of enthusiastic adherents who had great expectations to periods of great controversy (Broughton, 1991; Irwin, 1999). An overview has been provided of both the limitations of parapsychology and its demarcation problem. The limitations in parapsychology reflect the many reasons that contribute to its rejection as a

social science (Alcock, 2003; Evans, 1996; Griffin, 1996). However, other scientists point to problems in rejecting parapsychology (Derksen, 1993; Pinch, 1979). Concerning the future of parapsychology, problems such as reliability and measurability still create problems (Alcock, 2003; Evans 1996). To succeed in the future, parapsychology needs to better evaluate what it has already learned, and to learn more, while also taking negative results into account (Hyman, 2010). In addition, the experimental research of parapsychology must reach the standards of the social sciences widely accepted as legitimate (Morris, 2005).

The aim of this review article was to describe the development of parapsychology, with an emphasis on the demarcation problem. Besides describing the development, a prospect for the future has been made. However, future research should investigate the more specific parts of parapsychology and their future prospects, for this may differ from the overall picture. By illustrating the demarcation problem in parapsychology this review aimed to show some of the basic aspects of the demarcation problem in all the social sciences. Though the problem may differ in reference to establishing the boundaries of what is widely considered a “pseudo-science,” this might help future researchers to conceptualize the concrete problem of demarcation. The review lacks concrete research in psychic phenomena due to the limited empirical research in parapsychological articles. Furthermore, many articles used to evaluate parapsychology are written by scientists that work within that field. Concerning the validity and reliability of this review article, the views of other scientists could contribute to the overall picture of the development of parapsychology. Thus, future research could investigate the parapsychological “discipline” from an outsider’s point of view. However, the overall image of parapsychology and the limitations are extensively described. Therefore, even though this review has multiple limitations, it does seem to fairly reflect the development of parapsychology and those of its features that separate it from the social sciences generally considered legitimate.

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