Chapter 5

Why Do You Believe in Pseudoscience or Disbelieve in Science?

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ABSTRACT

People sometimes hold irrational beliefs even when empirical evidence obviously debunks claims central to beliefs. This chapter reviews empirical studies exploring underlying psychological processes of holding empirically suspect beliefs with a particular focus on belief in pseudoscience. The author explains empirical findings from a dual process view of thinking. Recent studies show individuals with higher analytic tendency exhibit more ideologically polarized reasoning than those with lower analytical tendency. These results suggest a significance of motivated reasoning in order to fully understand the psychological mechanism of everyday beliefs. Future research suggestions emphasize remaining questions, such as a developmental time course of, a cultural diversity of, and evolitional origins and functions of the belief in pseudoscience.

DOI: 10.4018/978-1-7998-1811-3.ch005
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WHAT IS PSEUDOSCIENCE?

People have various beliefs about a wide variety of real-world issues. Some beliefs may be strengthened through a process of empirical validation, whereas others may be weakened. However, people sometimes hold epistemically unwarranted beliefs (Lobato, Mendoza, Sims, & Chin, 2014) where the central claim of the belief was not supported by sound evidence. For example, a recent survey on paranormal belief among an American population (Chapman University Survey of American Fears, 2018) showed that more than half of participants believed that places can be haunted by spirits and almost a quarter of individuals believed in bigfoot and fortune-telling. This survey also indicated that about three out of four participants held at least one paranormal belief and that those beliefs have risen rapidly compared to the same survey conducted two years before. Furthermore, it is fresh in our memory that the Oxford Dictionary has selected “post-truth” as its international word of the year in 2016 after a steep increase in usage following Brexit vote and the US presidential election. In line with a growing permeation of the word, researchers are also interested in other forms of irrational beliefs, such as “fake news” and conspiracy theory. For example, you will find that a Google Scholar search of the term “fake news” returned less than 1,000 hits in 2015, however, this has increased to 7,000 in 2017 and 12,000 in 2018.

A conspiracy theory is defined, in general, as “the conviction that a group of actors meets in secret agreement with the purpose of attaining some malevolent goal” (van Prooijen & van Vugt, 2018, p. 770). Studies have shown that a non-negligible number of people hold the beliefs in conspiracy theory as well as beliefs in the paranormal. For example, more than one third of Americans suspected that the 9/11 attacks were ‘inside job’ (Stempel, Hargrove, & Stempel, 2007). Furthermore, the recent opinion poll by YouGov-Cambridge Globalism Project indicated that 17% of Americans believed that the man-made global warming is a hoax (Milman & Harvey, 2019), and that a certain number of people in European countries, even though the proportion was less than an American population, also denied the man-made climate change. A conspiracy theory sometimes goes with the science denialism, such as the rejection of vaccinations and genetically-modified foods as well as climate science denial (Kata, 2010; Lewandowsky, Gignac, & Oberauer, 2013). The science denialism itself is not necessarily pseudoscientific, but some forms of pseudoscience entails pseudo-theory promotion (Hansson, 2017). For instance, creationists have been religiously motivated by the rejection of biological evolution and have often made out that their claims are an alternative theory of the genesis of life.
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