

# Involuntary beliefs: biopsychosocial model

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**Abstract:** Beliefs are shaped by personal experiences and the environment, which are inherently individualized and variable. In this essay, I argue that beliefs are not formed voluntarily because of the pervasive influence of unconscious biases. I use a biopsychosocial model to examine this issue. First, I discuss the optimistic bias driven by neural mechanisms and its function in selectively filtering information to maintain psychological well-being. Furthermore, I explore how delusions, especially those caused by traumas, can involuntarily influence belief formation. Finally, I emphasize the importance of family and environment influencing one's beliefs. By integrating these findings in biological, psychological, and social aspects, I conclude that beliefs are not voluntary but are controlled by many factors. This finding is significant for addressing implicit biases and enhancing self-awareness through reflection and critical thinking.

**Key words:** belief; optimistic bias; delusions; religion; implicit bias; cognitive process

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## 1 Introduction

Beliefs, shaped by personal experiences and environment, are highly individualized and help us navigate the world, influencing our actions [1][2][3]. While voluntary beliefs would imply direct control over their formation [4], I argue that belief is not voluntary due to unconscious biases. This essay examines belief formation through the biopsychosocial model. Our brains naturally filter information to maintain positive self-concepts and psychological well-being, creating an optimistic bias. Delusions, as erroneous beliefs, often result from traumatic experiences, demonstrating how life events involuntarily shape our beliefs. Furthermore, our beliefs are constantly influenced by those around us and our surroundings, such as religious environments. By exploring these biological, psychological, and social factors, I aim to show that belief formation is predetermined by unconscious biases and external influences, making it largely involuntary rather than a product of conscious choice.

## 2 The bias of belief formation at biological and cognitive levels

Belief formation is heavily influenced by subconscious biases at both biological and cognitive levels, starting from the neural system. Research using functional magnetic resonance imaging (fMRI) has revealed the neural bases of global self-beliefs and self-performance estimates. Rouault and Fleming found that specific brain areas, particularly the ventromedial prefrontal cortex (vmPFC) and precuneus, are highly involved in forming self-beliefs [5]. Further studies by Kuzmanovic, Rigoux, and Tittgemeyer demonstrated that the brain "filters" out negative information, with the vmPFC affecting the dorsomedial prefrontal cortex (dmPFC) in a valence-dependent manner [6]. This suggests that our brains are hard-wired for optimism bias, automatically filtering information to maximize favorable inputs and disregard negative ones when updating or forming beliefs [6][7].

This optimism bias extends to memory processes as well. Kouchaki and Gino found that people who engage in unethical behavior tend to remember these events less vividly, experiencing "unethical amnesia" to preserve a positive self-image [8]. Another study showed that people tend to neglect bad news and focus on good news when updating self-related optimistic beliefs [9]. These biases serve important psychological functions, helping to manage the negative effects of devaluation and social-evaluative stress, and positively impacting long-term mental health outcomes [10]. They also aid in recovery from stress, as negative self-related beliefs are strongly correlated with psychological distress such as depression and anxiety.

However, beliefs are not solely shaped by internal processes. As social animals, our beliefs about our abilities are constantly updated through interactions with others, with environmental and social factors playing a crucial role. Müller-Pinzler and colleagues demonstrated that people adjust their self-evaluated performance based on feedback from others. Interestingly, some individuals, especially those with low self-esteem and high social anxiety, tend to retain unfavorable information about their performance. This suggests that while our brains attempt to filter out negative information to preserve a positive self-concept, it's impossible to completely block criticism from society.

In conclusion, the formation of beliefs about our abilities is not a voluntary process. It is influenced by neurological and cognitive biases, as well as by the feedback we receive from our environment. Our brains have evolved to sustain positive self-beliefs through selective information processing, in line with natural selection theory. However, this process is not absolute, and constant negative feedback can still update our beliefs accordingly. This complex interplay between internal biases and external influences underscores the involuntary nature of belief formation.

### **3 Delusions - erroneous beliefs involuntarily formed by traumatic events**

Beliefs are the end-product of cognitive processes, and delusions are erroneous beliefs [3]. For example, as a result of distorted cognition, people who suffer from schizophrenia might have persecutory delusions and tend to hold a core belief that the world is a dangerous place and that others have the intention to harm them. Moreover, persecutory delusions could be understood as a defense mechanism unconsciously activated to protect oneself from developing adverse self-relevant beliefs, so blaming others for negative events could potentially help to prevent negative thoughts from reaching awareness. Since persecutory delusions are likely to be caused by past trauma, and whether to undergo traumatic experience is unlikely to be within one's control, therefore the formation of such frightening and erroneous beliefs is another example that belief is not voluntary but rather shaped by our individual experience.

### **4 The succession of religion as evidence of family influence on belief**

Religion exemplifies how beliefs are involuntarily shaped by family, society, and culture. Goodman and Dyer found a positive correlation between parents' religiosity and their teenagers' religious growth in 59.3% of cases, highlighting the crucial role of family religious practices in transmitting religiosity. Petts further demonstrated that family participation in religious activities and continuity in religious membership significantly influence youth religiosity. Hayes and Pittelkow identified parental influence as the primary predictor of contemporary religious beliefs among Australians.

Pearce and Thornton's 31-year Intergenerational Panel Study revealed a strong correlation between mothers' religious service attendance and their children's, while also showing that childhood religious exposure affects perceptions of appropriate family activities. These findings suggest that religious beliefs and associated values are largely inherited from family environments.

The fact that our religious beliefs are so heavily influenced by the families and societies we are born into- -factors beyond our control provide compelling evidence that belief formation is not a voluntary process. Instead, it is shaped by our surrounding environment, particularly during our formative years, demonstrating the involuntary nature of belief

acquisition.

## 5 Conclusion

Belief formation is involuntary, influenced by biological, psychological, and social factors. Our brains filter information to protect self-worth, but negative feedback can undermine self-beliefs. Traumatic experiences shape beliefs, especially delusions. Parental religious beliefs significantly impact children's beliefs and perceived norms. These processes involve implicit biases that we're often unaware of. Self-affirming biases protect self-integrity, but responsibility for biased actions depends on awareness of bias effects and potential discriminatory outcomes. Increased bias awareness can improve mental processes and promote self-reflection. While beliefs may not be entirely voluntary, critical thinking and self-awareness can help mitigate the impact of implicit biases.

## Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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