

Psychological Involuntariness

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Introduction

Belief is defined as something one accepts as true or real; a firmly held opinion or conviction (Merriam-Webster, n.d.). The definition of belief implicates perception—one's beliefs are wholly determined by one's perception of existence. Numerous "psychologists have concluded that belief is a more or less involuntary response to perceived evidence" (Chignell, 2010, para. 64). As an effect, belief is an involuntary response to perception. The question then becomes: Is perception voluntary or involuntary, meaning produced by our own free will and conscious capacities of observation and interpretation or by forces beyond conscious control? To properly delve into this argument, we must look at all the factors that impact the psychology of human perception from a multidisciplinary lens, including neurobiology and sociology. From psychological, neurobiological, and sociological research findings, it is unanimously concluded that the mechanisms of perception and belief are, in fact, involuntary.

Neurobiological Influences on Psychology

Neurobiology and cognitive psychology offer empirical research methodologies to ground the structures of perception and belief firmly within biological materiality—namely, the structure and function of the brain. This scientific research is derived from cases of altered perception in individuals with brain abnormalities and injuries. By analyzing literature, we can conclude that perception and belief are not within one's free will.

By definition, delusional disorders distort perception and cause individuals to "hold unshakable beliefs" (WebMD Editorial Contributors, n.d., para. 2) not based in reality. Modern neuroscience reveals that people with delusional disorders have brain abnormalities in the medial frontal/anterior cingulate cortex and insula (Vicens et al., 2018). The cingulate cortex and medial frontal cortex are used in processing social information and monitoring action (Apps et al., 2013;

Gehring, 2001), making them essential faculties of perceptual awareness. Therefore, it can be reasoned that biological abnormality in brain structure is causally linked to perceptual abnormality. Even when individuals hold intentions for the correct perception of reality, their brain abnormality perpetuates inaccessibility, setting limits on the range of perception. The involuntary perception demonstrates that perception is dependent on the inevitable anatomy of the brain. In more specific delusional disorders like delusional infestation (Suh, n.d.), in which the prefrontal control over somatosensory representations is disrupted, the brain loses control over linking the perception of emotional expressions and sensory experiences (Kragel et al., 2016). In this case, it is frank that the brain abnormality limits, to a certain extent, the ability to perceive. The individual does not have any control over associating the perception of emotional expression with sensory experiences.

Moreover, the evidence of disrupted perception in patients with traumatic brain injuries (TBI), proves that brain structure and function control perception. The ventral system, including the amygdala, insula, and ventral regions of the anterior cingulate gyrus and prefrontal cortex, and a dorsal system, including the dorsal regions of the prefrontal cortex, anterior cingulate gyrus, and the hippocampus are associated with emotional perception (Bornhofen et al., 2008). These neural structures specifically associated with emotional perception are located mainly in the frontal and temporal lobes which makes them vulnerable to damage in TBI (Bornhofen et al., 2008). This susceptible location of brain structures leads to perception impairments in many TBI cases (Bornhofen et al., 2008). TBI, as the result of anatomical changes in the brain, lowers performance of perception and particularly emotional perception.

This decreased perception post-brain injuries serve as evidence of how damaged brain anatomy manipulates perception, demonstrating involuntary belief. A popular example of this

can be ex-NFL player Philip Adams who was accused of killing six people including his family members (Associated Press, 2021). Eventually, he was diagnosed with Stage 2 chronic traumatic encephalopathy (CTE) and was later found with unusually severe CTE in both frontal lobes (Associated Press, 2021). Alzheimer's Association (n.d.) defines CTE as a fatal brain disease linked to repetitive traumatic brain injuries (TBI) including concussions and head impacts. The tragedy played by Adam's condition reveals that his perception and beliefs were beyond his control, dependent on his brain's state. The sudden, unpredictable nature of his actions illustrates how involuntary belief and perception can be.

Having now proven that TBI and altered brain biology display the involuntariness of belief through distorted perception, we pose the following question: How greatly do neurocognitive processes impact belief in individuals with 'normal' or unaffected neurobiology? Neurologically speaking, all beliefs are incomplete predictions as they are formed in the Default Mode Network (DMN). People's beliefs incorporate subjective feelings—which are imaginary and a product of the Imagination Center, DMN—even in factual observation where the formation of emotional bias is inexorable (d'Acremont et al., 2013). The DMN is known for its association with unconscious processing (Vincent et al., 2007). In the sense that the DMN is active during sleep (Raichle, 2009) and even during light anesthesia, many people are unaware of the immense amount of unconscious processing fueled by the DMN (Tyron, 2014). Mistaking the activities of the DMN for rest legitimizes "how far outside of consciousness it operates" (Tyron, 2014, para. 3). It is impossible for any level of introspection to penetrate DMN (Tyron, 2014). This finding disputes the idea of voluntary beliefs and suggests that beliefs are no more than impersonal predictive mechanisms constructed out of various regions of the brain. In addition, it posits that bias mechanisms necessitate belief as not only involuntary but a largely unconscious process.

Furthermore, researchers have demonstrated that higher-level processing cognitive functions such as decisions are also made unconsciously, as scientists were able to predict participants' decisions in the brain activity of the prefrontal and parietal cortex as many as seven to ten seconds before the formation of their conscious decisions (Soon et al., 2008). These neurological studies throw the whole concept of free will with regard to conscious decision-making into question. If our decisions are simply the final output of a wholly unconscious mechanism, then every perceptual faculty informing and leading up to the said decision—i.e., beliefs—would also logically be placed firmly in the unconscious, and therefore, outside of voluntary control.

Another psychological factor that reveals the involuntary nature of perception and belief is unconscious bias. The structures and mechanisms of the neurobiological processing of information result in the formation of unconscious biases. With “the human brain processing 11 million bits of information every second” (Kong, 2020, para. 1), the amygdala and prefrontal cortex monitor neural information from our five senses, focusing on social norms and personal preferences outside of our consciousness (Agarwal, 2020). This neurological process proves that perception and belief are involuntary for two reasons. First, due to the high level of information received by the brain, only 40 to 50 bits of the 11 million bits per second of information are processed consciously (Agarwal, 2020). This means that most information processing occurs in unconscious mechanisms. Second, biases that inform belief and perception are also unconsciously produced. Therefore, belief and perception are influenced by an unconsciously, thus involuntarily, constructed bias. If belief and perception are shaped and determined by involuntary structures, then the logical conclusion from this argument is that belief and perception must be involuntary as well.

Sociocultural Influences on Psychology

In addition to physical and neurobiological factors, psychology must consider the abstract concept of sociocultural influence. The nature vs. nurture debate explores influences of human psychology, inquiring to what extent human perception and behavior are impacted by genetics and biology or acquired through environmental and sociocultural forces. However, examining how sociocultural structures like groupthink affect belief and perception reveals that the nature-nurture debate is not a binary split. Rather, the forces of 'nurture' alter and interplay with 'nature' to create human psychology that ultimately is involuntary in its perceptions of the world, and consequently, in its beliefs.

An instance of sociocultural influences affecting neurobiological processes of perception and belief is the brain imaging studies of Chinese and Western students (Han, 2022). In this study, the neurobiology of self-perception was dissected within the cultural analysis of distinct collectivist and individualist social structures. While Westerners tend to hold individualistic traits, Eastern cultures lean towards collectivist traits (Noguchi, 2007). Further, the study found contrasting activation of the ventral medial prefrontal cortex in response to reflecting on oneself and one's mother. Chinese students showed overlapping medial prefrontal cortex activity when in reflection of both themselves and their mother while Western students showed greater activity when reflecting upon themselves than their mothers. These fMRI findings indicated overlapping neural representations in beliefs about the self and third parties with intimate relationships in Chinese, but not in Western students. This proves that neural processes engaged in perception and belief may also vary greatly in people from different cultures, making the cultural differences in beliefs no longer simply a mental phenomenon but a biologically underpinned reality. Shared cultural values within the same ethnicity shape neurocognitive processes

underlying belief through their influence on social behavior and brain interactions (Han, 2022). This study conveys that race and cultural background dictate specific parts of the brain activated in perception. Race and exposure to a certain cultural environment is predetermined, suggesting that neurobiology affected by those factors directs perception and beliefs in a specific way.

An additional sociocultural factor to consider in the involuntary nature of belief systems is the concept of groupthink. Groupthink is defined as “a psychological and sociological phenomenon in which members of a group will conform to the majority opinion to maintain group harmony” (Blakeley, n.d., para. 1). The most important factors that cause groupthink are charismatic or intimidating leadership, pressure to conform, and strong group identity (Blakeley, n.d.). A real-life example of groupthink is the case of the geocentric theory remaining unchallenged for over 1,500 years. It was a widely accepted belief until the 16th century as it was in support of the highest authority at the time, the Catholic Church (The Editors of Encyclopaedia Britannica, 1998). The Catholic Church strategically eliminated threats to this theory when both Galileo and Copernicus, advocates of the heliocentric theory, were prosecuted—as a result, increased fear of ostracism and violence led to the theory staying unchallenged for many more years. This historical example of groupthink is a profound demonstration of the involuntariness of belief, where a collective delusion is enforced en masse by sociocultural power and the institutional regimes of the time. The individual will to believe is rendered obsolete by sociocultural influence; institutional power weaponizes the human instinct to prioritize safety and aligns with authority to enforce, inculcate, and codify beliefs into the collective psyche. In fact, research reveals that cognitive dissonance (Villines, n.d.), a phenomenon that is experienced by individuals who have succumbed to groupthink (Milambo, 2021), engages posterior medial frontal cortex (Colosio et al., 2017). Leon Festinger, who first

proposed cognitive dissonance, explained that due to cognitive consistency, the inner drive in human beings to avoid disharmony and dissonance, people impacted by groupthink will do anything to eliminate the discomfort (Sengupta, 2020). As the human brain is oriented to seek comfort, the brain will remotely train for any perceptual information to be processed through the pMFC where the confirmation bias gets performed (Colosio et al., 2017; Virginia Tech, 2019). Confirmation bias is the acceptance of beliefs that are only consistent with preexisting beliefs (Casad et al., 2016). The sociocultural phenomena of groupthink causing cognitive dissonance unknowingly constructs received information to be processed through the pMFC for the enactment of confirmation bias. Preordained sociocultural influences govern perceptual processes to be motorized in a distinct way, ergo, fabricating the involuntariness of beliefs.

Conclusion

Neurobiology confirms that the mechanisms that influence and determine perception are largely unconscious and beyond voluntary control. Given that belief proves to be an involuntary response to perception, we conclude that belief must be an involuntary process. Furthermore, sociology and psychology substantiate the claim that the sociocultural forces influencing perception also shape neurobiological mechanisms of belief and perception, showing that the combined nature-nurture influence ultimately determines that belief is involuntary.

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