HYPNOSIS AS A VESTIGE OF THE BICAMERAL MIND

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ABSTRACT

Biological theories of the origin of consciousness are unsupported by evidence and fail to account for altered states of consciousness such as hypnosis. Julian Jaynes's theory of the origin of consciousness and a previous mentality called the bicameral mind better explain both the nature of consciousness and hypnosis. Evidence suggests that hypnosis may be a vestige of the bicameral mind. Hypnosis and bicameralism both involve compliance to an externally perceived voice, both are thought to involve right hemisphere dominance, several personality characteristics are associated both with individuals who are highly susceptible to hypnosis and Jaynes's characterization of bicameralism, and historical accounts suggest hypnosis was even more effective in ancient history than it is today.

Key words: consciousness, hypnosis, bicameral mind, Julian Jaynes

INTRODUCTION

Hypnosis, defined succinctly by Spiegel and Spiegel (2004) as 'a state of highly focused attention coupled with a suspension of peripheral awareness', remains one of the great mysteries of psychology. Despite decades of modern research and more than 150 years of experimentation, the precise nature and underlying neurology of hypnosis remains elusive. What exactly is the trance state? Why does it exist? How is it that consciousness can so easily be altered by such a wide variety of relatively simple induction procedures? Is hypnotic trance related to other dissociative states such as 'possession', poetic frenzy, and glossolalia (speaking in tongues)?

The lack of clear understanding of hypnosis can be attributed to several factors. First, while it has been embraced by clinicians, within academic psychology hypnosis (along with other psychological anomalies such as 'possession') has often been marginalized as a topic of research. Second, the prevailing view of consciousness as biologically innate is likely inaccurate and thus leads to confusion about the nature of hypnosis. Third, hypnosis is typically studied as a modern phenomenon and is not viewed in a historical context. The reasons for the first point—having to do primarily with psychology's struggle to wrestle free from philosophy and be viewed as a hard science—are beyond the scope of this article. My focus will be on points two and three; the elaboration of which I hope will provide a better framework within which to understand the nature of hypnosis.

RETHINKING THE NATURE OF CONSCIOUSNESS

To understand the altered state of consciousness we call hypnosis, we must first understand the nature of consciousness itself. The prevailing view that consciousness evolved biologically through natural selection over hundreds of thousands (or millions) of years and is an innate characteristic in modern humans, while tacitly accepted by many, is unsupported by evidence. The biological view of consciousness stems in part from the misconception (often promoted by neurologists) that consciousness consists of everything that happens in the mind unless a person is asleep or rendered unconscious.

If the innate, biological view of consciousness were accurate, differences in the nature of consciousness between pre-literate and literate societies, as well as linguistic and non-linguistic individuals, would not exist (Ong, 1982/2002; Carruthers & Boucher, 1998). Furthermore, the dramatic alteration of consciousness through hypnosis should not be possible. Widespread tacit acceptance of the biological view of consciousness is undoubtedly one of the primary reasons that individuals with no direct experience with hypnosis often have great difficulty accepting the existence of hypnosis as a distinct mental state: if consciousness is an innate, biological feature common to all people, how can it be so easily and dramatically altered through mere language?

In his book *The Origin of Consciousness in the Breakdown of the Bicameral Mind* (1976/1990), Princeton University psychologist Julian Jaynes (1920–1997) proposes an alternate theory of the origin of consciousness—one that better takes into account the evidence as well as offering explanations for many of the anomalies of psychology such as hypnosis, 'possession', and other dissociative states. Rather than an inherent biological function, Jaynes argues that consciousness is a learned process based on language and is taught to each successive generation. Consciousness—as Jaynes carefully defines it—is thus uniquely human and arose sometime after the development of language. The learned nature of consciousness accounts for both its variability—for example, in individuals with delayed language acquisition—as well as its malleability, which can be seen in altered states of consciousness such as hypnosis, 'possession', poetic frenzy, and glossolalia (speaking in tongues).

OVERVIEW OF JAYNES'S THEORY

Julian Jaynes dedicated his life to understanding the origin and nature of consciousness. Jaynes initially experimented with animals, 'delicately running individual paramecia in a T-maze engraved in wax on black Bakelite', then moving on to 'species with synaptic nervous systems, flatworms, earthworms, fish, and reptiles' (Jaynes, 1976/1990). Although he later realized he was not studying consciousness in these animals at all, these experiments nonetheless helped him to refine his definition of the term. Jaynes asserts that the reason for much of the ongoing confusion over the nature of consciousness is the failure to properly define it. This problem continues today, with speakers at consciousness conferences rarely defining consciousness directly and often discussing consciousness in ways that imply dramatically different definitions.

Jaynes sets about defining consciousness by first clarifying what it is not. First, he demonstrates that consciousness is not all mentality. Things like vision, movement, and even speech are accomplished without consciousness. In the case of speech, one starts with a general idea or intention of the thoughts to be conveyed, and the words then come automatically. Further, Jaynes argues that it is a mistake to equate consciousness with sense perception, as even white

blood cells are able to react to their environment and would therefore have to be considered conscious. Second, Jaynes argues that consciousness is not a copy of experience, pointing out the absence of memories we have for common things we encounter, such as which letters are associated with which numbers on a telephone or the fact that our memories of certain events, such as swimming, often take a different point of view than the actual experience. Third, Jaynes explains that consciousness is not necessary for learning. Conditioned responses happen outside of consciousness, as does learning motor skills such as typing. Finally, Jaynes argues that consciousness is not necessary for thinking or reasoning. While this notion is at first counter-intuitive, Jaynes describes experiments that show that when making a judgement—for example, between which of two weights is heavier—the solution comes automatically. Similarly, when viewing a series, for example of geometric shapes, the determination of which figure comes next happens automatically and without introspection. Furthermore, scientists and others often experience solutions to problems in a flash of insight, often when not even thinking about the problem. Consciousness may be involved when setting up the problem, then during a period of incubation (often during sleep) the solution to the problem is resolved outside of consciousness. Related research by other scholars suggests that the majority of mental functioning takes place outside of conscious awareness, with consciousness often rationalizing behaviour after the fact (Norretranders, 1999).

Jaynes concludes that consciousness is not an all-or-nothing proposition but rather a package of features that are learned through metaphorical language. These features include an analogue 'I' (that can move about in mind-space in the same way the bodily 'I' can move about in actual space), narratization (the analogic simulation of actual behaviour), spatialized time (how we locate events and our lives on a timeline), as well as '*concentration*, the "inner" analogue of external perceptual attention; *suppression*, by which we stop being conscious of annoying thoughts, the analogue of turning away from annoyances in the physical world; *excerption*, the analogue of how we sense only one aspect of a thing at a time; and *consilience*, the analogue of perceptual assimilation; and others' (Jaynes, 1986; author's italics).

It is through metaphor that we establish an inner world that allows us to introspect. Jaynes writes: 'Subjective conscious mind is an analogue of what we call the real world. It is built up with a vocabulary or lexical field whose terms are all metaphors or analogues of behaviour in the physical world. Its reality is of the same order as mathematics. It allows us to short-cut behavioural processes and arrive at more adequate decisions. Like mathematics, it is an operator rather than a thing or a repository. And it is intimately bound with volition and decision' (Jaynes, 1986).

Jaynes goes on to note that the language we use to describe mental events is primarily visual: 'We "see" the solutions to problems, the best of which may be "brilliant" or "clear" or possibly "dull," "fuzzy," or "obscure." These words are all metaphors, and the mind-space to which they apply is generated by metaphors of actual space' (Jaynes, 1986).

When did this inner world first appear? In looking at the oldest reliable texts, he found that consciousness disappears in the oldest layers of the *Iliad*. In other words, there is no evidence of introspection. 'People are not sitting down and making decisions. … No one is introspecting. No one is even reminiscing. It is a very different kind of world' (Jaynes, 1986). There is no concept of will, and the body is referred to by various parts, but never as a whole (Snell, 1953; Jaynes 1976/1990). Furthermore, words that in a later age come to refer to things related to the mind all have more concrete meanings in the *Iliad*. For example, 'the word *noos* which …

comes to mean conscious mind ... comes from the word *noeein*, to see. Its proper translation in the *Iliad* would be something like perception or recognition of the field of vision. Zeus "holds Odysseus in his noos." He keeps watch over him' (Jaynes 1976/1990; author's italics).

This, together with a great deal of anthropological evidence, led Jaynes to a comparatively recent date for the development of subjective consciousness—roughly 1200 BC in areas such as Greece, Egypt, and Mesopotamia. The work of other scholars provides additional support for this dating. According to the historian Chester Starr (1968), for example, the Greeks did not develop the modern concept of history until as recently as 700 BC. The development of consciousness has been documented in China during roughly the same time period by the sinologist Michael Carr (2006). In the Americas and in isolated places such as Easter Island, evidence suggests that consciousness developed even more recently.

THE BICAMERAL MIND

This recent date for the development of consciousness is at first startling. If consciousness developed this late, how was anything accomplished in the ancient world? Prior to the development of consciousness (keeping in mind Jaynes's precise definition), Jaynes argues that humans could communicate, learn, organize, and problem-solve, but did so without introspection. Behaviour was largely habitual, but during the stress of decision-making, the brain used language to convey experience from the right hemisphere to the left hemisphere in the form of verbal commands. So rather than introspecting upon a course of action, people in ancient civilizations were directed by verbal commands that they interpreted as that of their leader, king, dead ancestors, or the gods. Today we call these voices auditory hallucinations.

According to Jaynes, at this time the brain hemispheres operated in a less integrated manner than they do today. Ancient man had a 'god-side' (right hemisphere) and a 'man-side' (left hemisphere) and neither side was conscious. Jaynes called this earlier mentality the 'bicameral mind', based on the metaphor of a bicameral legislature. Jaynes believes the bicameral mind evolved along with language as a method of focusing attention as well as a form of social control for the agricultural-based societies that emerged around 9000 BC. It was not until language developed to a certain level of complexity, writing emerged and became widespread, and populations grew to sizes no longer manageable, that the bicameral mentality broke down and consciousness was learned as a more effective way of dealing with novel situations.

Initially shocking, Jaynes supports his re-interpretation of human history and psychology with a wide range of evidence. Jaynes notes studies in which hallucinations were evoked through stimulation of the right temporal lobe. An analysis of ancient texts such as the *Iliad* and the Old Testament provide many examples of individuals who, in times of stress or decision-making, are provided direction by a hallucinatory voice (interpreted as that of a god). In Egypt, we see the hallucinatory guiding voice described as a person's *ka*. Later, in Rome, it was referred to as one's *genius*. Idols, viewed not as representations of gods but as the gods themselves, were widespread and served as hallucinatory aids. Furthermore, dreams in the ancient and modern world show a stark contrast. Dreams during the bicameral period often consisted of visitation dreams, where the dreamer perceives himself as asleep in bed and then visited by a god or spirit who issues a command; it is not until after the advent of consciousness that the dream experience changes to perceiving oneself acting out events in other locations (Harris,

2009; Jaynes, 2012). Evidence suggests that children's dreams go through a similar transition as they acquire language (Foulkes, 2002).

Jaynes presents evidence that after the transition from bicamerality to consciousness, hallucinations were suppressed in most people, resulting in the widespread loss of hallucinatory guidance. Oracles, prophets, and divination emerged as an attempt to discern the will of the now-silent gods, and ancient texts such as the *Ludlul Bel Nemequi* chronicle the departure of the gods. Later, religious reformers such as Jesus promoted the concept of one God to replace the many gods previously heard and worshipped, and the world's modern religions emerged to fulfil the longing for the lost direct connection with the gods. For a full discussion of the theory and its supporting evidence, readers are referred to Jaynes's original works (Jaynes, 1976/1990; Kuijsten, 2012).

Since the publication of Jaynes's book (1976/1990), a great deal of subsequent evidence has offered further support for his theory. For example, much more has been written on the relationship of consciousness and language (Carruthers, 1998). Auditory hallucinations occur far more frequently in the normal population than is widely known and have been documented in a wide variety of populations, including children, students, the elderly, high altitude climbers, and individuals under stress, in combat, or in isolation (Watkins, 2008). Auditory hallucinations as a form of behavioural control have been documented in pre-literate societies worldwide (Levy-Bruhl, 1923/1975). Imaginary companions in children are more frequent than previously known, and are believed to involve actual hallucinations (Pearson et al., 2001). The hallucinations of patients labelled schizophrenic often take the form of behavioural commands (Erkwoh et al., 2002). Beginning in 1999, neuroimaging studies confirmed Jaynes's hypothesis of a right–left temporal lobe interaction in auditory hallucinations (Lennox et al., 1999) and this finding has since been confirmed by numerous other studies (Jardi et al., 2007; Diederen & Sommer, 2009). Split-brain research and hemispherectomy cases demonstrate that the brain hemispheres can operate both independently and in isolation, similar to their more independent function in the bicameral era (for a discussion see Kuijsten, 2012).

Remnants of the transition from bicamerality to consciousness remain all around us. Vestiges of the bicameral mind can be seen in a wide range of phenomena such as the occasional hallucinations heard by normal, non-psychotic people, the command hallucinations of schizophrenia patients, the loss of personal authorization in hypnosis, related trance states such as 'possession' and poetic frenzy, the imaginary companions of children, and the nostalgic quest of modern religions for the lost voices of the gods.

HYPNOSIS AS A VESTIGE OF THE BICAMERAL MIND

The bicameral mind theory provides the historical context necessary to properly understand the nature of hypnosis. In the bicameral period, during times of decision-making the brain used language to transmit experience from one hemisphere to the other in the form of auditory hallucinations perceived as an external voice. Research on the neurology of auditory hallucinations suggests that in the bicameral mentality the language areas of the right hemisphere were active and that these areas are typically suppressed in normal conscious individuals today (Diederen & Sommer, 2009). As will be discussed below, research indicates that hypnosis also involves right hemisphere dominance. Thus both the bicameral mentality and hypnosis are thought to involve a shift in hemisphere dominance accompanied by compliance to an

externally perceived voice. In hypnosis, the hypnotist temporarily takes over the role of the bicameral voice, in some cases guiding the person to change behaviours ordinarily outside of conscious control.

Several lines of evidence suggest that hypnosis can be viewed as a vestige of the bicameral mind. Jaynes discusses correlational evidence including early studies that show hypnotic susceptibility is associated with right hemisphere dominance, and more recent studies of brain activity during hypnosis generally confirm this view. Jaynes notes personality characteristics associated with highly hypnotizable individuals that are also associated with the right hemisphere-dominant bicameral mentality (individuals who are either more creative, highly religious, had imaginary companions as a child, or had a strict childhood upbringing). Finally, evidence suggests that during the transition from bicamerality to consciousness, hypnosis and associated trance states were more widespread than they are today.

The first area of evidence suggesting hypnosis is a vestige of the bicameral mind is studies correlating hypnotic susceptibility with hemisphere dominance. Electroencephalography (EEG) and magnetic resonance imaging (MRI) studies of hypnosis were not available when Jaynes published his book, however Jaynes (1976/1990) notes that hemisphere dominance can be determined by asking a person a question and noting which way their eyes move as they think of the answer. In right-handed individuals, eye movement to the person's right indicates left hemisphere dominance, while eye movements to one's left indicate right hemisphere dominance. Jaynes cites a study describing greater hypnotic susceptibility in those with right hemisphere dominance (Gur & Gur, 1974). Bakan (1969) also reports 'a predominance of left eye-movements is associated with greater hypnotizability'. Later studies using more advanced techniques such as EEG and MRI have largely confirmed the view that hypnosis is associated with increased activity in the right hemisphere. Based on the evidence, Pedersen (1984) argues that 'the state of hypnosis is right hemisphere-oriented. We can postulate that the mechanism of going into an hypnotic state involves either a shift into right hemisphere function, or an inhibition of the left hemisphere, or both.'

Mészáros and Szabó (1999) report that 'using FFT [fast Fourier transform] spectrum of 16 channel EEG recording, it was demonstrated that in highly susceptible subjects the right parieto-temporal region shows more electric power than the left while the low susceptibles have left side predominance or equilibrated power in all derivations ... On the basis of these results we can confirm the importance of the right parieto-temporal associative area in the alteration of consciousness characterizing [the] hypnotic state.' These are precisely the brain areas implicated in the bicameral mind, with both auditory hallucinations (Kuijsten, 2006) and the feeling of a sensed presence (Persinger & Makarec, 2004) being associated with right temporal lobe activity.

An EEG study by Fingelkurts et al. (2007) reports that 'hypnosis was characterized by consistent right-side-dominance asymmetry' while an EEG study by Gruzelier et al. (1984) suggests left hemisphere inhibition under hypnosis. In a more recent discussion, Gruzelier (1996) reports research indicating that while 'hypnosis produced an accentuation of right hemispheric influences, high susceptibles in the prehypnosis state showed asymmetry favoring the left hemisphere, and hypnosis brought about a *reversal* of asymmetry'. A number of other studies also suggest greater right hemisphere activity during hypnosis (Graham & Pernicano, 1979; Naish, 2010), while others have highlighted the role of the left hemisphere (Jasiukaitis et al., 1997) or left–right hemispheric interaction (Halsband et al., 2009; Spiegel et al., 2010). Al-

though the precise brain networks involved in the hypnotic state are currently unknown, likely complex, and vary depending on the task, the weight of the evidence indicates greater right hemispheric activity in hypnosis, as is also hypothesized in the bicameral mentality.

Jaynes also discusses personality characteristics associated with both hypnotic susceptibility and the bicameral mentality. The first is the correlation of hypnotic susceptibility with more creative, visual individuals. Drawing on Stanford University psychologist and psychiatrist Josephine Hilgard's (1970) research on hypnosis and personality characteristics, Jaynes notes that more creative (and, presumably, more right hemisphere dominant) individuals scored higher on hypnotic susceptibility tests. The relationship between hypnotic susceptibility and creative individuals was also noted by Bowers and van der Meulen (1970), who found that highly hypnotizable subjects scored significantly better than low hypnotizable subjects on eight out of nine creativity subtests. In a review of the research on creativity and hypnosis, Bowers and Bowers (1979) conclude that 'creativity, hypnotizability, and effortless experiencing of imagery, fantasy, and creativity test responses are interrelated'. The relationship between hypnotic susceptibility and creative individuals provides further evidence that hypnosis involves a greater degree of right hemisphere activity, as is also believed to be the case with the bicameral mind.

Also suggestive is the correlation of hypnotic susceptibility with individuals who display higher levels of religiosity. Hilgard (1970) found that individuals who reported 'a deep sense of religious involvement' scored high on hypnosis susceptibility measures. Similar findings have been noted by Gibbons and de Jarnette (1972) and Hood (1973). As religiosity can also be viewed as a vestige of bicameralism (Jaynes, 1976/1990), the correlation between increased hypnotic susceptibility and heightened religiosity provides further evidence for hypnosis as a vestige of the bicameral mind. It should be noted that Jaynes's bicameral mind theory offers the only explanation for the fact that religiosity, auditory hallucinations, the feeling of a sensed presence (Persinger & Makarec, 2004), and dissociative states such as 'possession' (Mesulam, 1981) are all associated with the right temporal lobe. In the absence of Jaynes's theory, cases of sudden religious conversion in temporal lobe epilepsy (Dewhurst & Beard, 1970) are very difficult to explain.

Hypnotic susceptibility is also correlated with individuals who had imaginary companions as children. Hilgard (1970) found that while children in general who reported having an imaginary companion did not score higher on hypnotic susceptibility tests, children 'who were able to give descriptive information about their claimed imaginary companion' did. Some children experience a 'conscience-related' imaginary companion: one who 'criticizes (or sometimes dares) … is concerned with right or wrong, of propriety and impropriety' (Hilgard, 1970). Interestingly, the children who reported a conscience-related imaginary companion scored highest in hypnotic susceptibility. The correlation of hypnotic susceptibility with imaginary companions was also reported by Myers (1983), who found that the 'imaginative-fantasy abilities of individuals is related positively to their responsiveness to suggestions in hypnotic situations'. As noted previously, imaginary companions are another vestige of the bicameral mind. Far more prevalent than previously believed—a large study of 1,800 children reported that 46% of children experience imaginary companions (Pearson et al., 2001)—imaginary companions are thought to involve actual hallucinations. They are socialized out of most children by their parents; however, some children retain their imaginary companions into adulthood. In ancient civilizations, this was the guiding hallucinatory voice that was interpreted as the gods or

dead ancestors. The most significant similarities exist between the bicameral guiding voice and 'conscience-related' imaginary companions.

Another area of evidence for hypnosis as a vestige of bicamerality is the correlation of hypnotic susceptibility with those who experienced a strict childhood upbringing. Hilgard (1970) reported that 'year after year we have found a relationship—always in the same direction, occasionally highly significant statistically—associating severity of punishment in childhood with high hypnotizability'. Similarly, Cooper (1976) found that 'the parents of the more [hypnotically] susceptible children saw themselves as more demanding and strict with their children than did the parents of low susceptible children'. The enhanced relationship with authority brought about by strict parenting parallels the compliance to the voices seen in historical accounts of the bicameral mind (and, as mentioned previously, in patients diagnosed as schizophrenic, who often obey their hallucinatory commands).

Finally, evidence that hypnosis and trance states were more widespread in the past is suggestive that hypnosis is a vestige of the bicameral mind. As noted by MacHovec (1975), 'books on hypnosis and the history of psychology contain very little detailed information on the use of hypnosis before Mesmer'. Yet historical evidence suggests that as the transition from bicamerality to consciousness was taking place, trance states were far more frequent and widespread than they are today. Jaynes (1976/1990) notes the widespread occurrence of oracles and prophets that entered into dissociative states when giving their prophecy. MacHovec (1975) states that there is 'abundant evidence which shows that hypnosis or a similar induced altered state of consciousness was used in ancient Greece, Egypt, India, China, Africa, and pre-Columbian America'. Furthermore, McCartney (1968) notes: 'The Hindu Vedas, about 1500 BC, mention the use of hypnosis … The Ebers Papyrus gives an account of the medical methods practiced in Egypt about this time, and mentions "laying on of hands on the heads of patients", as part of the treatment. The tribes of Israel, the Chaldeans, the Zoroastrians, and the ancient Hebraic Bible, mention the use of hypnosis, although, of course, not using the term *hypnosis*.'

There are many possible references to hypnosis in the Bible (Glasner, 1955). In one example, hypnotic anaesthesia is alluded to in the story of Genesis (2:21–22): 'So the Lord God caused a deep sleep to fall upon man, and while he slept, took one of his ribs …' Biblical accounts of so-called miracles are at least suggestive that individuals during the first century demonstrated a higher responsiveness to hypnosis than is typically seen today. Many of the acts of Jesus (whether taken as historical fact or as fables representative of customs of the time) can be viewed as possible instances of individual as well as group hypnosis (Wilson, 2000). As noted by Glasner (1955), 'When we come to the New Testament, we find a great number of miraculous cures which might be explained in whole or in part in terms of suggestion, which is the basis of hypnosis.' Perhaps the first to advance this view was the 19th century German theologian David Friedrich Strauss. Writing extensively on the life and miracles of Jesus, he considers hypnosis the most likely explanation for the healings attributed to Jesus (Strauss, 1892). Van Der Loos (1965) notes that in 1894, 'the French doctor P. A. Desjardin published under the pseudonym Paul De Régla a study of Jesus of Nazareth in which he ascribes all miracles to suggestion and hypnosis'. McCartney (1968) suggests that 'Christ during his ministry obviously used hypnotic suggestion most effectively'. Based on passages from the New Testament, Edmonston (1986) concludes that Jesus 'used eye fixation, soothing suggestions, a laying on of hands, and posthypnotic suggestions as hypnotic procedures for the cure of various disorders'. The argument for Jesus as hypnotist becomes easier to accept when one realizes that

so-called miracle workers were not uncommon during the time of Jesus (Koester, 1982/2000; Koskenniemi, 2005). As described by Koester (1982/2000): 'Miracles were performed not only by Christian missionaries ... but also by Jewish preachers, Neopythagorean philosophers, and by many other teachers, physicians, and magicians. The entire scale of miraculous deeds of power was commonly used, from magical tricks to predictions of the future, from horoscopes to the healing of diseases and maladies, even the raising of dead people.'

Two other so-called miracle workers located in Galilee around the time of Jesus were Honi the Circle-Drawer and Hanina ben Dosa. Both were said to have healed the sick and performed exorcisms (Powell, 1998). Outside of Palestine, the miracle workers Apollonius of Tyana appeared in eastern Asia Minor and Simon Magus in Samaria (Stegemann & Stegemann, 1999), both in the first century AD. If hypnosis is a vestige of the bicameral mind, it stands to reason that the recently conscious mind circa 1200 BC–500 AD was more responsive to hypnosis than the modern, literate mind. That the healings reported historically are often more significant than what can typically be expected with hypnosis today seems to bear this out. It also underscores the importance of belief, individual as well as cultural expectation, and confidence in the hypnotist in hypnotic outcomes.

CONCLUSION

Biological theories of the origin of consciousness are unsupported by evidence and fail to account for altered states of consciousness such as hypnosis. Julian Jaynes's theory of the origin of consciousness and a previous mentality called the bicameral mind better explains both consciousness and the nature of hypnosis. The bicameral mentality and hypnosis both involve right hemisphere dominance accompanied by compliance to an externally perceived voice. In the bicameral period, during times of decision-making the brain used language to transmit experience from one hemisphere to the other in the form of auditory hallucinations perceived as an external voice. In hypnosis, evidence suggests that the hypnotist encourages a shift to right hemisphere dominance (thus diminishing the sense of self) and temporarily assumes the role of the bicameral guiding voice. Hypnosis in turn illuminates the view that consciousness is learned by demonstrating how easily consciousness can be altered through language, how our habits and motivations lie largely outside of consciousness, and how powerful changes are often most easily accomplished not through conscious will but rather by bypassing consciousness.

The relatively recent origin of consciousness proposed by Jaynes raises interesting questions as to how consciousness may be continuing to change today. Many areas relevant to this question remain to be explored. If consciousness is a recent development historically, in what ways might consciousness develop in the future? Will the growing ubiquity of technology have a positive or a detrimental effect on consciousness? What methods can be used to better train consciousness in children as well as adults? Using hypnosis or other methods such as neurofeedback, to what degree can one gain greater control over unconscious and habitual influences on thought and behaviour? Understanding that consciousness is learned and not innate should encourage individuals to use tools such as hypnosis, visualization, and meditation practices to expand the scope of consciousness and exercise greater control over unconscious responses and habitual behaviour.

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