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## The Last Modern Psychologist: Julian Jaynes' Search for Consciousness in the Natural World

**Scott Greer**

University of Prince Edward Island

### **Biography**

Dr. Scott Greer is currently Associate Professor of Psychology at the University of Prince Edward Island in Charlottetown, PEI. He received his B.A. (Magna Cum Laude) degree from the University of Memphis, and his M.A. and Ph.D. degrees from York University in Toronto. Dr. Greer has published peer-reviewed articles in a variety of journals, including *Journal of the History of Behavioral Sciences*, *History of Psychology*, *Theory and Psychology*, and *Journal of Humanistic Psychology*. He also recently published a co-authored book, *A History of Psychology* (2015), through Bridgepoint Education. He has a broad range of research interests, including the social construction of self-measurement, as well as the life and work Sigmund Freud and Friedrich Nietzsche. His most recent work is on re-theorizing memory as based on metonymic relationships between the subject and space and time. Dr. Greer is also the coordinator for the Julian Jaynes Conference on Consciousness, which is held at the University of Prince Edward Island, and has served on the executive of the History and Philosophy of Psychology section of CPA for several years, including a term as section Chair and 3 years as Editor of the section's journal/newsletter, *The History and Philosophy of Psychology Bulletin*. Dr. Greer lives in Argyle Shore, PEI with his wife, daughter, Cocker Spaniel, a sandy beach, and the beautiful sights and sounds of the ocean.

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# The Last Modern Psychologist: Julian Jaynes' Search for Consciousness in the Natural World

Scott Greer

## Abstract

Julian Jaynes, late professor of psychology at Princeton, is best known for his controversial yet provocative book, *The Origin of Consciousness in the Breakdown of the Bicameral Mind*. Based on an unpublished manuscript, and other archival documents, this paper examines his unpublished work, the "History of Comparative Psychology," which represents a failed search for the origin of consciousness as a natural kind. Jaynes abandoned this work to begin the *Origin of Consciousness*, which represented a radical break in theorizing about the emergence and nature of consciousness. In Jaynes' mature theory, the "breakdown" of the non-conscious bicameral mind led to the process of internal narratization, existing through time in what he called a "mindspace." Jaynes' final definition of consciousness was that of "an analog 'I' narratizing in a mindspace," and as "based on metaphor, developed through language, and is an operator, not a thing." A number of profound implications follow from understanding of consciousness as socially constructed. Most dramatically, Jaynes brought the modernist conception of consciousness as a natural kind to a close and provided an alternative explanation; and eschewing centuries of reification, Jaynes he concluded that consciousness does not exist – at least not in the way it is often assumed, as a brain function. Consciousness, as phenomenal experience, can only be said to exist *intersubjectively*, pointed to a moral and ethical dimension that purely naturalistic investigations of consciousness are unable to address.

## Keywords

Origin of Consciousness, Bicameral Mind, Julian Jaynes

O, what a world of unseen visions and heard silences, this insubstantial country of the mind! What ineffable essences, these touchless rememberings and unshowable reveries! And the privacy of it all! A secret theater of speechless monologue and prevenient counsel, an invisible mansion of all moods, musings, and mysteries, an infinite resort of disappointments and discoveries. A whole kingdom where each of us reigns reclusively alone, questioning what we will, commanding what we can. A hidden hermitage where we may study out the troubled book of what we have done and yet may do. An introcosm that is more myself than anything I can find in a mirror. This consciousness that is myself of selves, that is everything, and yet nothing at all... (Jaynes 1976, 1)

Thus spake Jaynes! And thus, some 40 years ago, Julian Jaynes began his ingenious but highly controversial magnum opus, *The Origin of Consciousness in the Breakdown of the Bicameral Mind*. In this work, penned during the heyday of behaviorism, Jaynes offered some provocative new ideas on the nature of consciousness, and, as some of you may know or recall some rather startling conclusions as to its origins.

### **Three Interrelated Theories**

Jaynes' ideas have been out of academic circulation for a while, so before proceeding to the focus for my paper, I would like to review the basic points of his theory, broken down by Jaynes into 3 main areas.

1) The first and certainly most controversial aspect of his theory of consciousness is that of *the bicameral mind*. Jaynes argued that until around 1200 B.C. humans did not have consciousness as we understand it: they were unable to introspect, reminisce, make plans, be deceptive, or engage in any reflexive deliberation. When faced with important or meaningful decisions, they heard voices that they took to be gods, which directed their behaviour. Jaynes (1976) proposed that these "admonitory" and "executive voices" emanated from the right side of the brain and were communicated to the left side, the 'human' side, as an external voice. The right side, being more creative and better at solving more complex and long-term problems, appeared to the person as a voice of authority that understood the world in a larger, more abstract, even god-like way. As you might imagine, a society full of hallucinating people is hardly stable. And as the numbers of people living together and needing to be coordinated grew, more stress was placed on these people and their 'gods.' According to Jaynes, although the bicameral civilization worked under conditions of consensus and strict hierarchy, it was a fragile arrangement; one that had worked for the 'hunter-gather,' but was too inflexible in a context with greater and more numerous and varied social connections. With increasing internal and external stressors (e.g., earthquakes, volcanic eruptions, invasions), this bicameral mentality gave way to what was simply a more efficient use of our brain—namely, consciousness. Most notably, the "breakdown" of this bicameral mind was precipitated, in addition to these other factors, by an evolution in language (including the spread of writing), and the use of metaphor (and symbolic thought) more specifically. Through this evolution of language and language use, the breakdown of the bicameral mind also led to a further symbolic process of internal narratization. Jaynes (1976) described this as the linguistic assimilation of the voices of the gods into a single sense of self, existing through time in what he called a "mindspace" (more on that later). So, God isn't dead

after all, just silent! It is important to note that it is this linguistic shift rather than any biological or neurological change that resulted in consciousness as we now experience it. According to Jaynes (1976; 1986a), there is no substantial difference between our brains today and those of bicameral people 3,500 years ago.

2) The bicameral mind theory is rooted in neurological differences (primarily with regard to speech) between the right and left hemispheres. One of his key insights into the origin of consciousness came in 1967, when Jaynes realized that if evolution had confined speech areas to the left side of the brain, what was the corresponding right side for, since most important brain functions are bilateral? These differences are still there, he noted, and can be witnessed today in cases of schizophrenia, through electrical stimulation to the right side of the brain, or in certain aspects of childhood, such as in having imaginary friends (Jaynes 1976; Keen 1977). Sperry's split-brain research came out a short time later, and then, Jaynes recalled, "I knew I had something big" (Time 1977, 52).

3) Extending from these first two points, Jaynes argued that the origin of consciousness rests *not* in evolution through natural selection, or some biological adaptation, but consciousness is a product of *culture and language*, of a cultural evolution in the use of writing and language. Our mentality—whether bicameral or conscious—is thus more a function of social context, language, and forms of communication than a hard-wired neurologically-based system. Understanding consciousness, therefore, has more to do with understanding our society rather than our brain, our language practices rather than neurotransmitters, and our cultural history as opposed to our genetic endowment. Of course, biological factors clearly play an important role; for example, the evolution of communication and language in humans is something genetically and biologically grounded, but consciousness itself is something that emerged from that, from the use of language more specifically. Consciousness is thus a kind of social practice. Put another way, while consciousness may be partly *enabled by* the brain (i.e., the brain is a necessary condition), it will not and simply cannot be *found in* the brain (i.e., it is not a sufficient condition).

Jaynes (Keen 1977; Rhodes 1978) stated that his theory of consciousness (#3) does *not necessarily* commit one to his bicameral hypothesis on its origins (#1), or his neurological theory on the structure of the bicameral mind (#2). Jaynes' bicameral mind theory is rooted in neurological assumptions, while his argument for the development of consciousness is not dependent on a bicameral mind (which was not so much a mind as a dual brain). Ontologically, Jaynes argued, consciousness itself is outside the parameters of genetics and natural selection, and is on an entirely different order than the brain.

In telling this story, Jaynes wove together, in an almost polymathic fashion, a narrative that draws on aspects of philosophy, psychology, history, neurology, anthropology, archaeology, religion, and linguistics. Jaynes' search for the origin—or origins—of consciousness was also a highly personal quest, resulting in a theory that makes a fascinating blend of science, literature, history, and crypto-biography (cf. Kuijsten 2006).

Having reached the status of something of a cult figure today, Jaynes' theory was and still is extremely controversial, and has been the subject of an intense and wide-ranging debate, both inside and outside of academia. The wide reception of his book, and its many reviews, nearly constitute a sub-literature, and vary tremendously from "one of the books of the century" (William Harrington, in *Columbus Dispatch*) to Mike Holderness, in the *New Scientist*, who remarked, "It has been a while since a philosophical book made me laugh out loud."

In any case, it could not be said that Jaynes' ideas have been irrelevant, nor the point of his questioning moot. Jaynes' book and ideas came at a time when psychology was rather loath to discuss the topic of consciousness, which had been essentially *Verboten* since the days of Watson. However, Jaynes predicted that consciousness would return to Psychological discourse, and he of course was correct. Since the 1980s, developments in computer science, cognitive psychology, and neuroscience – supported by the development of technologies such as PET and MRI scans, have brought consciousness to the fore once again – although it is hardly the same sense of "consciousness" the field had once known in the theories of William James and Edward Titchener.

So, what does Jaynes believe consciousness is?

### **The Search for and Development of a Theory of Consciousness**

Jaynes traced the start of his quest for understanding consciousness to a vivid memory from the early age of six: while raking leaves in his yard, he was suddenly struck by the idea that the 'yellow' he saw in the forsythia bush before him may not be the same 'yellow' that others see; and, moreover, how would one ever know what someone else saw? Jaynes recalled, "As a child, I was fascinated by the inner world I alone could see, and I wondered what was the difference between seeing inwardly and outwardly" (Rhodes 1978, 62).

Jaynes started his search in earnest as an undergraduate majoring in philosophy and literature, attending the University of Virginia his first year, Harvard his second, and McGill his third and fourth. Jaynes graduated from McGill in 1941. He had studied philosophy

with the hope that he might understand this “interior space we call consciousness,” but later considered this a “false start”: “...after going through Kant’s Critique of Pure Reason and various epistemologies, I felt that we had to be out in the world gathering data to get anywhere” (Keen 1977, 60). With this in mind, Jaynes continued with graduate work at Yale’s Institute of Human Relations in 1946, studying human physiology and animal behaviour. Jaynes looked for his ‘data’ by examining the relationship between the brain and behaviour, looking for the physiological and biological bases of the mind. His research was clearly connected to the theory of evolution, and, from that, the idea that consciousness must have evolved—its origins should be traceable back through history and through our links with other animals. Jaynes then began a systematic search for consciousness by studying how animals learned. He started with plants and moved on to single-celled organisms, neither of which appeared to learn. Jaynes recalled, “I began running paramecia and protozoa through little T-mazes, all in the blissfully absurd notion that I was researching consciousness” (Keen 1977, 60). He then studied simple animals, such as flatworms, and then on to fish, reptiles, and cats, which obviously could learn—but Jaynes was feeling restless, and he was beginning to wonder if he was in any way coming closer to finding consciousness.

### **The Turn Toward Culture and Language**

During his work in animal behaviour studies and ethology in the 1960s, Jaynes had begun to compile some journal publications with his mentor Frank Beach. He had also started composing what would have been a book-length manuscript tentatively titled, “The History of Comparative Psychology.” I have been fortunate enough to obtain this 100+ page manuscript as part of a larger Jaynes archive (at UPEI). Here, Jaynes presented an historical review of the study of animals, and what it told us about our close evolutionary relationship with the rest of the animal kingdom. We can see how this work, along with his laboratory investigations and ethological studies, were a precursor to, and was actually abandoned for, his *Origins of Consciousness* in 1976.

So, frustrated by his own failure after many years to uncover even a glint of consciousness, Jaynes determined by the end of the 1960s that the search for consciousness as a natural kind (object) and a product of evolution was a “dead end” (Jaynes 1986). He slowly began to realize, “...the problem of consciousness had stumped so many people because it wasn’t in evolution, it was in human culture” (Hilts 1981, 87).

Jaynes (1986) elsewhere elaborated:

This error, I think, comes from John Locke and empiricism: the mind is a space where we have free ideas somehow floating around and that is consciousness. And when we perceive things in contiguity or contrast or some of the other so-called laws of association, their corresponding ideas stick together. Therefore, if you can show learning in an animal, you are showing the association of ideas, which means consciousness. This is muddy thinking. (129)

However, Jaynes realized some progress had been made. Through his experimental research with animals, Jaynes had systematically and deductively come to understand what consciousness was not: it was not all of mentality or perception, it does not copy experience, nor is it necessary for learning (in a complete reversal of his initial assumption) – in fact, consciousness can interfere with learning (sometimes called “self-consciousness”)—and it is not even necessary for thinking or reasoning, which the Wurzburg School demonstrated over 100 years ago.

So, Jaynes began a new line research, with a new bold set of assumptions. He looked for evidence of consciousness throughout world history and culture; searching ancient literature and art, and any kind of archeological evidence that might indicate the presence or absence of consciousness. The most direct kind of evidence seemed to be from language, and so he looked for concepts or actions that would denote consciousness. We can see, for instance, that Plato and Aristotle were conscious, although they do not have a well-defined concept of consciousness per se. He continued on through the Homeric Greeks, tracing consciousness back, back until it disappeared between *The Illiad* and *The Odyssey*. This would then place the origin of consciousness for the Greeks between 1200 and 1000 B.C. For Jaynes, these two works seemed to bracket the emergence of conscious-type thinking (or at least concepts tantamount to consciousness). In *The Illiad*, the Greeks and the Trojans are depicted, more or less, as “puppets” of the gods, who are much more salient in determining the course of human action than in *The Odyssey*. In this work, crafty Odysseus is capable of, for instance, acts of deception, something that requires consciousness (Jaynes 1976).

Jaynes found similar evidence of consciousness emerging in the writings of the near and Middle East, such as in the Bible and the Upanishads, and there was a remarkable degree of consistency around the dates, all centring around 1200 to 1000 B.C. (Jaynes 1976; 1986). Again, Jaynes argued that until this time humans were basically “zombies;” they able to talk, reason, solve problems – all of the same things we do without drawing on consciousness per se. While this may sound patently absurd, Jaynes argued that we

have lived and evolved for millennia without consciousness, and so it would not have been necessary for many basic human behaviours. His earlier research on animal behaviour and the history of comparative psychology had demonstrated this. It only seems essential now, since consciousness is the awareness of our actions. Perhaps the behaviorists were right, but for the wrong reasons. Jaynes pointed out how often consciousness is simply the awareness of what we have done or said, reflected back to us – it is actually not the all-encompassing causal factor we often assume it to be.

However, what I believe is the most decisive, and perhaps radical, point in Jaynes' theory is that he also argued that consciousness is not simply the brain—in fact, it “does not have a location,” and elsewhere he stated that “the location of consciousness is arbitrary” (Jaynes 1976; 1986; Harvard tape). I believe many people when asked to point to their ‘mind’ or to their consciousness would point to their head. Or one might argue, as current models of cognitive neuroscience and cognitive psychology suggest, the brain is really the mind, or at least a properly functioning brain is, among other things, a conscious mind. According to these perspectives, consciousness can be located in the workings of the brain, and a scientific understanding of consciousness involves understanding its underlying neural connections, processes, and structures.

For Jaynes, this is a very common and most unfortunate mistake in that it reifies consciousness into a thing, and misses the essential aspect of its origin: *consciousness developed through the process of generating and fitting metaphors to objects and events* (Jaynes 1986; New Hampshire tape). Consciousness is thus a kind of mental activity, socially and biologically enabled. The ‘space’ of consciousness is not a physical space; it is what Jaynes called a “mindspace,” which he defined as a functional space that exists in the same way as mathematics. We would not argue (I hope) that  $2+2=4$  can best be understood as something residing in our brain; naturally, the ability to use this information involves the brain, but mathematics itself does not somehow reside in the brain. Similarly, consciousness clearly involves the brain, and like mathematical formula, grammatical structures (i.e., our syntax and semantics) are the tools of conscious thought. However, this can in no way be taken to mean that consciousness itself is rooted in the brain (just as most certainly mathematics is not either).

A further example given by Jaynes (1986) is that of riding a bicycle: we all use our brains in riding a bike, but we do not ride bicycles in our head, nor would anyone consider the location of ‘bicycle riding’ to be in our heads. Consciousness is a thus functional concept that is expressed and ‘found’ in our use of language and metaphor. Although Jaynes was not opposed to the metaphor of cyberspace to characterize consciousness as a functioning representational system, he was wary of taking computer or technological



analogies too far, calling them “unnecessary,” “inaccurate,” and is a path that “can lead us astray” (Jaynes, anon. interview transcript.).

With this in mind (so to speak), Jaynes offered two general but slightly different definitions of consciousness. The first comes from *The Origins of Consciousness*, and defines it as “an analogue ‘I’ narratizing in a mindspace” (Jaynes 1986; New Hampshire tape). We have also heard Jaynes’ contention that consciousness developed through the process of generating and applying metaphors to objects and events, and that this occurs in what he called a “mindspace.” This can be expressed in three interlocking points:

- 1) The operations of consciousness are based on metaphors, often visual in nature: e.g., “she’s very bright.”
- 2) The relationship to these metaphors is based on a sense of “I”; this I exists and moves about in mindspace, where it can engage in any number of activities, actually possible or not.
- 3) This activity occurs in time and is put into a temporal sequence which Jaynes (1976) called “narratization.” The modes of conscious narratization can be verbal, perceptual, bodily, or musical.

Jaynes’ other, later definition of consciousness repeats the main features of the first, but is describing the *origins* of consciousness rather than its structural features: consciousness is “based on metaphor, developed through language, and is an operator, not a thing” (Jaynes, Harvard tape). As noted earlier, both definitions highlight Jaynes’ belief that consciousness and its origins are tied to language and cultural practices, and consciousness is not, in itself, a biological system.

Jaynes (APA talk 1969; 1976) believed that the origin and spread of consciousness was much too recent and much too fast to be accounted for by the (usually) quite slow process of evolution by natural selection. Jaynes (1976) used the example of children’s ‘imaginary friends,’ where we see a vestige of bicamerality before consciousness has fully emerged. As the child becomes socialized to not only the meanings of language, but its metaphorical and representational features, the child learns what it means to be conscious. In essence, we build up a metaphorical “analogy” of the real world through the acquisition of language and the enculturalization of meaning. Once we learn this lexicon of metaphors, the analogue I is able to move about in this mindspace, which is a representation of the external world, and make decisions and choices.

### **Conclusions and Consequences**

In closing, I would like to pose some conclusions about Jaynes' ideas, and some consequences for the investigation of the type of consciousness he described.

First and foremost, Jaynes represents an endpoint of the modernist (i.e., Cartesian) conception of consciousness (and mind in general) as a metaphysical thing contained in the body, and as the homunculus that causes conduct. He is also one of the last grand theorists of mind that attempts to embrace the big picture questions about mind, conduct, and human nature and how it all fits together – itself a hallmark of modernist thought. Research on consciousness for the past 30 years or so, since the advent of imaging technologies, has been much more specific and empirically driven; one might even say pragmatic. Furthermore, Jaynes' connection of consciousness to language and socio-cultural praxis constitutes a clear foreshadowing of many social constructionist (i.e., postmodern) arguments on this point (e.g., Gergen 1985). By transforming questions about consciousness from something to be investigated in the laboratory to the unfolding of consciousness in the realm of cultural evolution and social praxis, he portrayed consciousness as a kind of social construction (as opposed to a natural kind). This, of course, also raises the related question about whether the lab, and our current reductionist neuroscientific discourse, is the most suitable context for revealing all that consciousness entails. Jaynes came from an experimental tradition where consciousness was in the head, a brain even, and only after a long and exhaustive systematic search for consciousness under these assumptions was the naturalistic discourse on consciousness questioned. Jaynes not only questioned these very basic assumptions about the status of consciousness, but he also eschewed the reification of the mind (or soul) to explain consciousness, thus rejecting the ontological dualist tradition and the subject/object dichotomy that have plagued modern, naturalistic accounts of mind and conduct.

The title “last modern psychologist” is thus obviously more symbolic than literal, since consciousness research within a neuroscientific discourse is clearly modernist. Rather, it is Jaynes' failed search for consciousness as part of the natural world, his realization of boundaries and limitations, and the type of alternative explanations he offered in response, that leads me to think of Jaynes as “the last modern psychologist;” or perhaps, he is “the first” last modern psychologist.

Secondly, that said, the modernist-inspired experimental construction and pursuit of consciousness through laboratory methods have clearly flourished since Jaynes. However, I wonder if the tremendous interest in a neuroscientific understanding consciousness is really about asking the “big questions”? Most reductionist explanations do not seem capable of solving the so-called “hard problem” of consciousness, and similar questions

of qualia and embodiment. I wonder if the vast majority of this recent research, and the tremendous amount of funding it has brought, has more to do with how to create a technology that can interface with a particular understanding or problem of consciousness. There are hundreds, maybe thousands, of experimental studies of consciousness and reams of data, but whither theory?? As noted above, gone are the grand theorizers, most researchers are framing their questions in terms of practical considerations concerning publication and effective application (e.g., methodological feasibility, ethical requirements and restraints, budgetary limitations, etc.). I further wonder if, in pursuing this thoroughly modern mind, we are not in danger “of creating a technology, not a science” (to paraphrase Titchener’s comment to Watson about his Behaviorism). Again, as the last modern psychologist, Jaynes represented that tradition of theorizing questions of human nature and value. Now, like the concept of the “individual” and the “self,” consciousness has become a commodity among researchers and industry. Neuroscience research means lucrative research grants, where the methods of investigation drive the questions, and the applications to the consumer steer the funding. It is no wonder that in capitalist liberal democratic cultures, such a technologically advanced (yet theoretically impoverished and passively mechanistic) construction of mind predominates.

Third, consciousness (qua phenomenal experience) in Jaynes’ view can only be said to exist *intersubjectively* (i.e., within a community, or perhaps a field, of language use and meaning). Take ‘gender’ as a parallel example: its existence is predicated on the simple fact that we began talking about it. It arose in the 19<sup>th</sup> century out of an evolution in our discourse about sex, sexuality, and other ideas and questions about the development of our private interior. It is of course possible to talk about the biological enabling factors of gender, but, like consciousness and other intersubjective notions, their meanings only come fully into view when seen actualized in a particular context. Ideas such as gender or consciousness soon have little, or a vastly truncated, meaning in a reductionist discourse. When the reification of psychological concepts and metaphors is taken as operationalization, then psychological theory, to quote Jaynes’ on this point, becomes “bad poetry masquerading as science.”

Last, and perhaps most significantly in the long run, if consciousness is understood to be generated (in part) by language and metaphor, operating as a socially constructed phenomena, then there are obviously moral and ethical dimensions to explore. However, these dimensions are invisible (or rather neutered) in the asocial, purely experimental formulation of consciousness. Jaynes was well aware of this. In the recordings of some of his later lectures, Jaynes discussed how one of the “consequences of consciousness” was an

increased sense of interdependence among conscious individuals, now that the gods had died. Without the voices in their heads, that a priori, authoritarian voice giving people a sense of good and evil, right and wrong, morality became much more complex—now truly a matter of human construction and deliberation. In this light, consciousness might be argued to be something that is just as fundamentally ethical as it is neural or social in nature.

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