

Consciousness and the Voices of the Mind: Open Discussion

JULIAN JAYNES

(From audience): I would just like to raise a terminological question. Do you make any essential difference between the word “consciousness” and the word “self-consciousness”?

Jaynes: Absolutely. Consciousness should not be equated with self-consciousness. There are at least three senses of the term. Self-consciousness has a trivial sense of embarrassment, or fear of what others may think of you, which I am sure is not what you mean. A second and most important sense is the consciousness of self as in answering the question “Who am I?” The self is the answer. It is an entity or structure of attributes given by our culture and imbedded in our language that is learned into our personal history which we infer from two sources: what other people tell us we are and what we infer from our own behavior. Many recent experiments in social psychology provide evidence for this statement. The self is not in any sense the analog ‘I’ which is contentless. The self is an object of consciousness, not consciousness itself. As such, the self is not a stable construction, but changes dramatically through history and among nations, as well as in child development, and even over the course of a day, depending on one’s excerpts and how one narratizes them.

But here, as in many topics relating to mind, we must carefully locate those fuzzy areas of polyreferential confusion where what seems to be the same word is used to denote two or more quite different referents. Thus self properly is the psychological self I have just described. But the word is also used in trivial reflexive senses as when we say “the word itself” or say that “a fly washes itself.” And an extension of that usage occurs when we say we see ourselves in a mirror. We don’t. We see and recognize our bodies or our faces, not our selves. When pigeons (Epstein, Lanza, & Skinner, 1981) or chimpanzees (Gallup, 1970) are taught to recognize their bodies (note how much easier *it* would be to say “themselves” and how erroneous!) in mirrors, it has

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nothing to do with consciousness or self-awareness in its human sense. When such a chimp, because of its mirror training, rubs off a spot on its head it has seen in the mirror, it may be no different essentially from rubbing off a spot on its arm without a mirror (see Jaynes, 1978).

There is a third sense of self-consciousness that occurs mostly in philosophical discussions and is a rather musty way of indicating self-observation of our own thinking or introspection. Such introspection is one type of narratization in which consciousness — and you remember I called it an operator as in mathematics — is operating twice. We are conscious of our own consciousness. Consider a schoolboy taking an exam fantasizing a romantic daydream about a girl across the aisle. Then when someone makes a noise, perhaps, or he notices a physiological reaction incongruous with the situation, he suddenly realizes he is daydreaming and must stop and return to the exam if he is to pass. Here is consciousness operating twice. From the schoolboy's point of view, it can be diagrammed as:

$$'P \rightarrow (\text{me and girl together})$$

which changes to:

$$'P \rightarrow ['P \rightarrow (\text{me and girl together})]$$

and so ceases, where 'P in single quotes always stands for the analog 'P and the arrows for those analog abilities designated as narratization.

It is an extremely functional process, making us able to prevent ourselves from being commandeered by fantasy — as happens in dreams. Conscious processes and content are introspectable (which is being conscious of our own consciousness), and even sometimes introspection itself (which is being conscious of being conscious of being conscious). As such, introspection can be used as a denotative definition of consciousness, that is, a definition by pointing at it. But we must not make the mistake of thinking that all consciousness is introspective because it is introspectable.

Is there a more objective way of pointing out consciousness?

Jaynes: Right now let us take any ten people out there on the street and ask them when they next hear a clock strike to tell us all what they had been thinking of in the previous minute. The resulting reports are the basic material of consciousness and what we are trying to understand. That is bedrock and an objective denotative definition of consciousness. It is an experiment I do with my class each year.

I think this is a related question. Some people would say that consciousness is all awareness while you are just talking about self-awareness. Could you comment?

Jaynes: Awareness, like the word *experience*, is an extremely slippery word that immediately

confounds attention, perception, and consciousness, and by doing so buries the problem all over again in a morass of undefinitions. It stealthily crept into our descriptions of behavior more and more during the behavioristic era as a rather sly surrogate for the deposed and banished consciousness, and has been causing multireferential havoc ever since. It is interesting that in the midst of that era, Webster's *Collegiate Dictionary* (5th ed., p. 215) tried to distinguish between consciousness and awareness by saying that consciousness "applies primarily to that which is felt within oneself," while awareness "applies to that which is perceived as without." I would be happy to agree with that if others would as well and stick to that distinction. But too often awareness slides around everywhere and takes on associations of internality, which confuses it again with consciousness. I therefore try to avoid the term. There is nothing that the word awareness can refer to that cannot be expressed in more precise terms. And we should do so.

Now, back to the question. Am I just talking about self-awareness? The more precise term here is self-consciousness, which I think is what you mean. The question then becomes similar to the last part of the first question where I noted that all consciousness, while being phenomenally located internally, is not self-consciousness. I can be worried about what my young daughter is doing staying out after midnight again. That is certainly consciousness, certainly narratizing in mind-space, and I think of it as going on in me — even though such phenomenal location is arbitrary — but I can't see how that could be called self-consciousness or self-awareness.

Now, as to those who wish to call consciousness all awareness. What could that mean? Probably consciousness as I have described it plus all sense perception. This is very deceptive, and it gets back to the question I mentioned in my talk: Is sense perception consciousness?

First of all, consciousness is not necessary for sense perception. We must be crystal clear about that. You can notice this in your everyday life, all the countless things you do when you are thinking of something else, very obviously being guided by hosts of perceptions. And if you do still hold that consciousness is necessary for perception, you will have to carry it over into animal behavior and down the evolutionary tree — as I meant to emphasize in my lecture — until you will have to impute consciousness to protozoa, since they react to objects and so have sense perceptions, and so to the white blood cells circulating right now in your body. To me that is a *reductio ad absurdum*.

Second, while sense perception is not due to consciousness, we are of course conscious of what we perceive. Consciousness, this narratizing in a mindspace, would be useless otherwise. I perceive the blackboard. So can an animal. But I can be conscious of the blackboard as I perceive it, a kind of extra dimension that a sub-human animal does not have. But that is a poor example. It is difficult to hold one's consciousness steadily on a perception — like a Zen meditation discipline. If I try to keep conscious of the blackboard, I lose it quickly: I start narratizing around it, noting its location, thinking of what is written on it, remembering other blackboards, wondering how it's made nowadays, and so forth. What is more, I think I can be conscious of the blackboard more easily by closing my eyes. Perception often can be slightly inhibiting to consciousness.

I think I agree that consciousness and perception should be separated and that they have been squeezed together by many psychologists. But why do you think this is so?

Jaynes: There are several reasons. The simplest is that consciousness as I said is an analog of external perception and so is easily mistaken for perception. After all, it is mapped onto sense perception almost as its template. We can “perceive” an idea or a subtlety using the same word as perceiving a tree. Sharing the same terminology, it is no wonder the two kinds of perception are confused.

Another reason is that even the casual use of mental words inappropriately can produce convictions in us that are quite mistaken, and this goes on non-consciously. If a boxer is knocked out, we might say, lacking a better word, that he is knocked unconscious. This automatically and irrationally gets us to assume that everything before the punch was conscious — which we know is untrue. It’s as if having a blackout in a city means that everything in the city is white. We should say the boxer is knocked unreactive or senseless.

Language also plays this trick on us when we try to describe animal behavior. If a moth keeps flying into that light up there, and someone asks us, “Is the moth aware of the light?”, we might say “Yes,” lacking a better word. The moth is aware of the light, which translates for some people into consciousness, spiraling us back into the same confusion. The proper description is that the moth flies into the light and nothing more. No projected internality, please. It is reflex machinery.

And a further reason is strictly academic history. So-called experimental psychology was begun in Germany by physicists and physiologists who were strict metaphysical dualists (even if some of them called themselves pan-psychists) and who knew and cared nothing about the evolutionary problem or animal behavior or human behavior for that matter. Their perspective is therefore very distorted. Fechner, a physicist, is an excellent example. By studying just-noticeable differences in stimulus intensity, pitch, or brightness, he thought he was studying the elements of consciousness and so relating the universe of mind and the universe of matter, as in the famous Weber-Fechner Law. And this led into what William James — whose emphasis you remember was so opposite, on the *stream* of consciousness — called the dreary wasteland of psychophysics. Even today some students of perception suppose they are studying consciousness when they are simply studying perception — which we share with all animals.

Some modern philosophers make that mistake as well.

Jaynes: I imagine it is because of the artificial analytic traditions begun in 1920 by two Cambridge friends, G.E. Moore (1922) and Bertrand Russell, about what used to be called sense data: consciousness sits in its space in the head waiting to be fed sense data through the apertures of the sense organs. When Russell (1921, 1927), looking for an example of consciousness, simply says, “I see a table,” that is a highly artificial choice, and really incorrect reporting. It is not “I see a table” but his knowing he sees a table that is what he is really meaning. It is his consciousness of seeing a table that he is talking about, not the bare perception. This can be diagrammed thus:

‘I — I see a table

Russell thought his consciousness was the second term alone, where really it was both. He was being conscious of the perception as part of an argument. Russell should have selected a more ethologically valid example that was really true of his consciousness, that had really happened, such as “I think I will rewrite the *Principia* now that Whitehead’s dead,” or “How can I afford the alimony for another Lady Russell?” He would then have come to other conclusions. Such examples are consciousness in action. “I see a table” is not.

Let me give another hypothetical example from our ten subjects out there in the street. Suppose one of our subjects was hurrying to an intersection just as the light turned red against her. Her consciousness indeed would have recognized she had to stop at the red light. If she crossed she would be jay-walking, which is wrong. And she remembers she is a good person. Except she shouldn’t have stopped for that fudge sundae — and with walnuts on top too! And now she might be late getting home, because there goes the clock, and now invalided Cousin Sally will be worrying I’ve been in an accident. Punishment for breaking my diet, I’m sure the police have made this particular red light longer than it used to be, probably just to be mean to me — and to poor Cousin Sally. Oh! There it turns green. Nothing less than all that and more.

And so if a psychologist or a philosopher comes along and says consciousness is awareness or sensation, and “seeing the red light” is a good example of consciousness, it is as absurd as saying a B-flat is a good example of a symphony. Seeing a red light cues consciousness: the sensation is a node between one conscious string and another.

I hope some of you will try that experiment tomorrow of monitoring your consciousness when you hear a clock strike. See if you have just been thinking of a perception.

I could add that even Watson and the early behaviorists would agree with my point here. In saying that consciousness does not exist, they certainly did not mean sense perception.

Are you a behaviorist in animal behavior?

Jaynes: I am a strict behaviorist up to 1000 B.C. when consciousness develops in the one species that has a syntactic language, namely, ourselves.

Was there humor in the bicameral period?

Jaynes: There was jeering at individuals who do something different from expectation in the bicameral world, shaming them. It is a method of social control that has its parallel in other social mammals’ ostracism of an aberrant member of the group or as children on a playground may mock a child who is different. It is not humor in our sense. It is usually cruel and it is usually excluding somebody from the group. The theory I am working on is that this is what humor grew out of as human beings became conscious. We today have clowns and comics who almost always are portraying people we don’t respect for various reasons. We are really excluding such portrayals from ourselves as we laugh at them, and we like to do this in a group, suggesting its

ancient innate origins of social ostracism. But I haven't traced it out with any thoroughness. It is an excellent problem for research.

Did everyone hear the gods?

Jaynes: Yes, I think so. Except possibly the deaf. But deaf bicameral people may have had visual hallucinations of gods directing them by gesture, even as modern deaf schizophrenics often do (Rasner, Abdullah, & Altshuler, 1970).

But perhaps you meant to ask if it wasn't just the leaders that heard the gods. The literary data that we have historically is indeed mostly about leaders or important people. But there are other kinds of evidence that show that everyone heard gods. Idols used to facilitate hallucinations were everywhere and of all sizes, not just in palaces and temples. Ordinary people had idols, and idols were buried with them. In some excavations of cities, every family dwelling had a shrine. Thousands of cylinder seals from many sites in Mesopotamia show a person being led by his personal god into the presence of a higher god. Then we have the names of ordinary people have the name of their god imbedded into their name. *Kainesut*, which translates as "The King is my *ka*," is an Egyptian common name that in bicameral theory means "I hear the King telling me what to do." I think everybody fitted into these hierarchical, tightly knit organizations because everybody did indeed rear voices that controlled them.

Did the role of conscience change between the bicameral period and consciousness?

Jaynes: In one sense, the bicameral mind was conscience, hearing what to do from gods, but the idea of conscience today is like a faint and wayward echo of it. I have been surprised recently to find that conscience in this sense is a relatively modern notion, having been begun, I think, by Thomas Aquinas in the 13th century as practical moral reasoning, and then heavily emphasized by Calvin in the 16th century as an innate subjective mode of moral revelation. In the 17th century, the King James translators of the New Testament, no doubt influenced by Calvin, translate *Suneidesis* as "conscience" when it should probably be "consciousness." But it is not until the beginning of Romanticism with Rousseau that "conscience" becomes "divine instinct" and "the voice of the soul." It is interesting that this occurs just as poetry is beginning to turn back to some bicameral-like admirations (see Weissman, 1979, 1982).

I remember as a young boy asking my mother how I could tell the difference between right and wrong. She told me softly to listen to my conscience. I tried but nothing ever happened. I concluded that either I was too wicked to have a conscience or too good to need one. I have been wavering between these two positions ever since.

Was there any difference in moral developments in the bicameral mind?

Jaynes: I think you are saying it too weakly. There is no such thing as morality in the bicameral

world. Ethics and morality are things that we have to learn in our societies to replace the dictates of the gods. The first replacement for the gods in holding a society together, however, was sheer legality without real morality. A work by the early sophist Antiphon even says that laws and customs are to be obeyed only when disobedience is liable to be detected. It would be contrary to nature (*physis* as distinguished from *nomos* or convention) not to injure someone if you would benefit thereby and would not be caught (see Field, 1930). The idea of a morality apart from legality only begins to appear in Greece in the 5th century B.C., as in Sophocles' *Antigone*, and then of course in the Socratic *Dialogues* with sudden and tremendous sophistication. But because there is no universal natural basis for morality in large conscious civilizations, because we cannot derive any *ought* from a scientific study of what is, we commonly return to our bicameral heritage for our authorization, basing our ethics on the writings of the last people to hear bicameral voices, such as the Bible in Judeo-Christian societies or the Koran in Islam.

Do you consider any possibilities of nutritional effects resulting in changes of consciousness that came about around the agricultural period?

Jaynes: Is there a nutritional determination of some of these changes in mentality? I know that there are several theories about specific geographic areas, but I suspect they are promoted by a tendency we all have to wish simple materialistic determinations rather than complex cultural ones. Materialistic determinations only seem simpler, but they really are not. And the evidence for them is usually weak and local. They could not explain the geographically extensive changes I have been referring to.

However, you did phrase your question as if to entertain the possibility that in the change from a hunting and gathering economy to agriculture back around 9000 B.C., there may have been nutritional changes — more carbohydrates perhaps — or ergot on cereals — that could produce more hallucinatory activity. I am skeptical, but it should be investigated. If schizophrenic patients have more carbohydrates in their diet, do they tend to hallucinate more? And conversely, would such patients be helped by being on an all-meat diet? I don't know.

How about the pyramids of Egypt? Surely the pharaohs who built them as their tombs were thinking ahead to their afterlife, and that would be consciousness.

Jaynes: This is what is called the presentist fallacy. You are phrasing the situation as if ancient Egyptians were like ourselves. They were not. The pharaohs of 2500 B.C. did not build the pyramids for themselves. You must remember that the volition of a bicameral person was his auditory hallucination or god, and so the volition of each pharaoh was Osiris, the chief god, who was his *ka* or bicameral voice. Osiris commands the building of the pyramids to his glory in the same way that a millennium later Yahweh with great architectural detail commands Moses to build an ark and a tabernacle to his glory (Exodus 25–27), or as the Greek earth goddess, Demeter, commands that a temple be built at Eleusis to her glory (Homeric Hymn to Demeter,

lines 271 ff.), or in many other examples. In Egypt, however, when the pharaoh dies — as we would call the process — he is absorbed into his *ka* and then both are absorbed into Osiris as is depicted many times on funeral walls — even perhaps as Jesus after his resurrection is absorbed into the unified Trinity (Jaynes, 1979).

What about pain? Pain is certainly conscious and ancient people and animals surely feel pain!

Jaynes: Most pain theorists today agree that there are two fundamental types of pain in ourselves, variously called acute and chronic, nociceptive and operant, or sensory and functional. In our work this same distinction is between sensory pain with its associated pain behaviors and conscious pain (Jaynes, 1985), and they follow each other in history. Animals and bicameral people just have the former; we always have a combination of both. We have sensory pain and also are conscious of it, fear it, recruit it, extend it out, amplify it with our conscious concern, interact with it, re-enact it. Using this distinction, one can enter into a greater understanding of many human pain phenomena such as the effectiveness of placebos, some phantom limb pain, and chronic pain for which no neural basis can be found. Pain in ourselves is always a complex interaction between the physical stimulus that causes pain behavior and the conscious reactive component to it which we might call the conscious suffering.

Are there any matriarchal societies in early civilization?

Jaynes: There is no clear evidence of matriarchies in early civilizations of the Near East at least. In our research the more common thing is a world ruled mostly by female gods and masculine hearers of those gods. I suspect this is because children were brought up almost exclusively by women. That is what the *Iliad* is. Evidence for this bicameral gender arrangement goes back to the Hacilar and Catal Huyuk cultures in Anatolia of about 6000 B.C., with their pudgy and strange idols of what are often called mother goddesses. But there is no evidence that these were matriarchies on the human level. There were, of course, several ruling Queens of Egypt, such as Hatshepsut, but I don't think that makes a matriarchy any more than it does today in the British Commonwealth because a woman is head of state.

Before a child can use language, does this mean that the child is not conscious?

Jaynes: Yes. The idea of consciousness that I have just presented should be tested out in child development. My students and I are trying to do that at Princeton. One needs language for consciousness. We think consciousness is learned by children between two-and-a-half and five or six years in what we can call the verbal surround, or the verbal community as B. F. Skinner calls it. It is an aspect of learning to speak. Mental words are out there as part of the culture and part of the family. A child fits himself into these words and uses them even before he knows the meaning of them. A mother is constantly instilling the seeds of consciousness in a two- and three-

year-old, telling the child to stop and think, asking him “What shall we do today?” or “Do you remember when we did such and such or were somewhere?” And all this while metaphor and analogy are hard at work. There are many different ways that different children come to this, but indeed I would say that children without some kind of language are not conscious.

If you ask a person what he was thinking about yesterday, would this be something that did not ever happen in the bicameral world?

Jaynes: It would not happen in the bicameral world. Supposing I asked you what you were thinking of five minutes ago. I think you would find it difficult to reply. You have to tag these things in the time domain to remember them. There was not any such thing in the bicameral world, no spatialized time in which we locate lives and actions. This idea of reminiscent memory, what Tulving (1983) calls episodic memory, is built on consciousness. You don’t find a bicameral Achilles saying things like “When I was a child” or “Back in Greece what did I do at this time?” or anything of that sort. The bicameral world goes on in a relatively continual present.

I should add that of course bicameral people knew, *non-consciously knew*, where they were, had come from, and were going, and what they were doing over a short time frame. So does a dog or a pigeon over a short time. Otherwise no behavior could be completed. This particular time frame is what William James and others have called the specious present (James, 1890, pp. 609ff). That is a much more primitive type of immediate and non-conscious retention which all vertebrates and many invertebrates have as well, and appears to be very carefully evolved to vary for particular behaviors.

Now add to that for bicameral man the use of language as a retention device. Having verbal formulae or rote epithets, such as “the war-loving Danaans” or “the horse-taming Trojans” or “much enduring godlike Odysseus” (all examples from the *Iliad*) for peoples, persons, places, or gods, gave him a much greater capacity for these immediate knowledges by cueing off these verbal associations.

The bicameral epics themselves, composed by formulae and by rote from generation to generation, can be viewed as retention devices and a huge step toward episodic or reminiscent memory. But it is only with consciousness, of course, with its spatialized time in which events can be located, that we achieve remembering in its full sense.

In the model here, does one side of the brain have the attributes of consciousness, since it is making the decisions in terms of the voices of the gods sending it over to the left side?

Jaynes: Narratization, but not with an analog ‘I,’ seems to have taken place in the right hemisphere, since I have assumed the early epic narratives are right hemispheric (Jaynes, 1976b). Therefore some of the attributes of consciousness begin, if this model is correct, in the right hemisphere. That is a very perceptive question and one which needs to be explored, particularly in relation to the previous question.

Do you think there might not be some sculptors, painters, and particularly composers who would dispute the idea that language is required for consciousness?

Jaynes: The assumption of your question, I think, is that consciousness is necessary for art and music. I don't think so. There was a great deal of art and music in the non-conscious bicameral world, all originated by those neural organizations and resulting cognitions called gods. Texts specifically refer to gods dictating how idols are to be carved or buildings built. Look at the meticulous detail that Yahweh goes into in building the ark or the tabernacle in Exodus that I just mentioned. If you talk to composers and painters today, and I have on these matters, many of them don't have the feeling that consciousness is doing the composing or painting any more than consciousness is giving me the words I am presently speaking. As I mentioned in my talk, I am narratizing an intention in consciousness, what I have called a struction, and then the words just come. So in artistic expression of any kind. I have just received a letter from a contemporary composer who asked me if he is schizophrenic because he simply hears his music and transcribes it.

That isn't quite what I meant. I meant that consciousness doesn't seem to be all language.

Jaynes: I understand you now. Yes, the content of consciousness is far from being all language. You or I can right now imagine a triangle in mind-space, color it red, and even slowly turn it around in our consciousness. There is nothing linguistic in that. But it takes language to get us there, to set it up in our imagination. I did not mean that everything in consciousness is made up of language. Language creates a mind-space on the basis of metaphor and analogy in which you are 'seeing' the triangle, as well as the analog 'I' which is doing the 'seeing.' The particular things you are conscious of, music, sculpture, triangles, are often not linguistic at all.

Why in some cases does the right hemisphere say good things and sometimes bad things?

Jaynes: In schizophrenia, which I suggest is a partial relapse to the bicameral mind but mixed with a great deal of stress, some patients hear good voices, but the majority today hear condemnatory harsh voices. One hospitalized 40-year-old patient whom I interviewed and who will probably remain hospitalized the rest of his life, hears all day the Queen of Heaven in a rose garden, constantly telling him what a good boy he is; he is extremely gentle and constantly smiling. While another, a former parochial high school principal, heard a deep voice associated as God telling him how unworthy and sinful he is and to fall down and break his teeth and sometimes not break his teeth (he came to the hospital with broken teeth). We suspect of course the difference perhaps is due to a doting mother in the first case and a punishing, inconsistent father in the second. But we do not know, and the problem should be possible to research.

How do you define thought and feeling?

Jaynes: Both of these terms are polyreferential, as are most words for mental acts. I would like to use “thought” just for consciousness, for what we are doing in consciousness at any time. But usually this involves a non-conscious substrate that is solving structions on an almost continuous basis. Most people would call that thinking. I use thought loosely and not as a technical term.

“Feeling,” however, I do try to use technically — by which I mean with a precise referent. And perhaps I shouldn’t because it has several other referents, the prominent of which have to do with touching and believing, which I feel are entirely separate. In a theory of emotions that I have proposed elsewhere (Jaynes, 1982), I suggest that we, like other mammals, start with a complex of evolved basic affects that, with the advent of consciousness, become the basis of our feelings. That is, a feeling is the consciousness of an affect, thus stretching it out in time and making it difficult to get rid of. So around 700 B.C. in Greece shame becomes guilt; fear, anxiety; anger, hatred; and so on. And, as I mentioned before, pain becomes suffering. The evidence for these changes is in the dramatic transformations of behavior and customs in the first millennium B.C. This is what I have called the two-tiered theory of emotions.

You said — this was in connection with imaginary playmates — that the bicameral mind was innate. Why then aren’t we all bicameral?

Jaynes: Innate does not mean inevitable. It means an inborn potentiality that can be made actual in a particular environment. It is the distinction between genotype and phenotype. The social, verbal, behavioral environment of a child today and the peer pressure to be and think like other children does not encourage or reward a child in a bicameral direction. Back before 1000 B.C., that social, verbal, behavioral environment plus peer pressure would encourage the child’s imaginary playmate towards the status of a personal god and a full-fledged bicameral mind.

To say this another way: A child from bicameral times brought up in our culture would be normally conscious, while a modern child if brought up in the Ur of 3000 B.C. under the sovereignty of Marduk in his *giginu* in the great ziggurat would be bicameral.

I still can’t believe all this, saying that ancient people are not conscious like we are. How can you prove it?

Jaynes: There are really two questions there. First is the difficulty of believing ancient people were not conscious. I certainly understand the problem, which is why in my book I call it “preposterous” (Jaynes, 1976b, p. 84), for so it seems at first. The reason it seems preposterous is because of all the everyday functioning we have packed into our concept of consciousness, thinking of it as all perception, all mentality. That is why I spent so long at the beginning in trying to straighten out the term to its true and original meaning.

To say this another way, we tend to infer that anything that acts like us is conscious because the inference of consciousness in others is so habitual, going on not only in all our social life but

in consciousness itself as we narratize about our relationships. It is very difficult to suspend that habit of projecting consciousness in thinking about ancient civilizations or even in animals close to us or even in newborn infants.

The second question was how can it be proved. To stretch a comparison, I can imagine someone back in 1859 complaining to Darwin that it is preposterous to say that species were created by chance and natural selection without any purpose whatever. Look at all the evidence for the purposiveness of God's creation — everywhere! It can't be chance and selection. How can you prove it?

The answer in both cases, evolutionary theory and bicameral theory, is to try to state the hypothesis as clearly and factually as you can, and then evaluate how the data, all the data you can find, may fit in. For evolutionary theory, we look at the fossil record and current situations of speciation where we can observe them; for bicameral theory, we look at ancient texts and artifacts and current mental phenomena as they may be illuminated by the theory. In both cases the theory must explain the data more completely and parsimoniously than any alternative.

Do you think you have done that?

Jaynes: I know of no alternative of equal explanatory power that maps on to all the evidence. But it is only a beginning. I know there will have to be adjustments and revisions. There is so much left to do. So much more sheer theoretical analysis of consciousness itself, particularly of narratization that covers so much so thinly, so much more accurate translations of ancient texts, so much in studying the development of consciousness in children, a taboo subject for so long, or the variety of mentalities in hunter-gatherer groups, all of whom have partly learned consciousness by now in their contacts with civilizations. But I think it is an opening in the right direction into which psychology should go.

How did you come to this theory?

Jaynes: How do I narratize my arrival at these views? As one who had gone down many blind alleys in search of the origin of consciousness in lower species with simpler nervous systems, until I realized more and more that I — and most others who had preceded me on such a quest — were confused in a way we did not understand. So I decided to change directions and attempt to trace back in human history the mind-body problem as a way of alleviating that confusion. I traced it back until it disappeared in some of the works ascribed to Aristotle, then in some of the pre-Socratics, and then vanished in the *Iliad*. What did that mean? I then felt for a long time like someone in a dark room, stumbling about, bumping into strange unrecognized objects while feeling for a light switch or chain, not even knowing if there was a light. And then it happened and the light went on. Consciousness is learned on the basis of language, and right at that time — at least in the strong form of the theory. And so many things were suddenly clear. It was not biologically evolved. Other ideas about the metaphoric nature of consciousness, which I had been

harboring for a long time, joined up with that and the theory began.

What are dreams in this theory?

Jaynes: Dreams are consciousness operating primarily on neural reactivations primarily during REM (rapid eye movement) sleep. (And let us remember that the presence of REM does not necessarily indicate dreaming.) The same features of consciousness that function in waking life function in dreams as well: narratization, the analog 'I', mind-space, excerption, and particularly that feature of consciousness not so noticeable when awake because it's so automatic, consilience (what I call in my book conciliation—consilience is Whewell's, 1858, better term for my intended meaning of mental processes that make things compatible with each other). Consilience is the conscious analog of perceptual assimilations where ambiguity is made to conform to some previously learned schema. Consilience is in mind-space what narratization is in mind-time, making things compatible with each other.

The neural reactivations which are narratized and consiliated into dreams are instigated by excitation from the pontine region of the brain stem — as is now well known (Hobson & McCarley, 1977). They are usually related to recent events or recent conscious thoughts or feelings, some by chance neural causation, others by association, some utterly inconsequential as a shiny color or an abstract spatial relationship, perhaps others through our conscious concerns of what has happened or might happen, sometimes in a jumble, sometimes not depending on one's physiological state. These occur together with internal (posture, blood flow, visceral, etc.) and external stimuli (temperature, light, sounds, etc.) impinging on the sleeper — what in the older dream literature was called 'incorporation.' Consciousness tries to narratize and consiliate it all together into a story.

An example: Suppose among these reactivations you have independently an apple, a seashore, a straw hat: you will consiliate and narratize them together (even as you probably did as you were conscious of them as I said them) so that you dream you are walking along a beach in a straw hat eating an apple. Now add in the external stimulus of cold because your blankets have fallen off, and you may then notice in your dream that you are naked. Rationalization (in its old-fashioned sense of simply making things reasonable) is a kind of narratization and occurs in dreams as well. So you rationalize your sudden nakedness by realizing in your dream that you are going swimming. Or if you have some sudden stomach indigestion, as you swim in your dream, the ocean may suddenly roughen with turbulence. But then add in a spontaneous reactivation of something really disparate such as a calculus of metaphor you were trying to invent on a blackboard last night, and if this can't be consiliated or narratized into what has gone before, the scene of the dream abruptly changes perhaps to a classroom and you are having a new dream. So dreams are fashioned by consciousness and change when consilience becomes impossible. Sometimes we may have very bizarre consiliations, as with a feeling and a quite inappropriate scene or activity making a dream that makes no sense and often can't be reported.

Then you don't believe in dream interpretation?

Jaynes: Occasionally some ongoing concern or anxiety can be teased out from the tangle of dream ingredients, sometimes with striking imagery, but it is usually something you have been conscious of the day before. Such imagery thus symbolizes a problem and can help keep one's concentration upon it. Apart from that, dreams have no necessary interpretation, but they can be and are being used projectively as Rorschach cards in therapy. And it can be an interesting game for anyone to try to sort out the particular elements which were consiliated and narratized into their various origins in recent conscious experience.

What about animal dreams?

Jaynes: They are not dreams in our sense. What you see in the fluttering paws and mouth of a sleeping dog are pure reactivations instigated as before by the giant pontine cells but without consciousness, without any consilience or narratization with an analog 'I' — or perhaps I should say analog Fido. Even the well-known experiment of lesioning parts of a cat's pontine brain stem, so that the usual REM sleep muscle inhibition does not occur (Hendricks, Bowker, & Morrison, 1977), does not result in these animals' "acting out their dreams" as is commonly said, but in acting out their stereotyped reactivations — if that is how to express it.

Can introspection occur in dreams?

Jaynes: Sometimes, yes. Such occasions are what are called "lucid dreams."

But if dreams are consciousness and consciousness only began about 1000 B.C., then no one should have dreamt before that time.

Jaynes: No one did dream before that time in the way you and I do. Let's look at the data. In the *Iliad* are four dreams, although they are not called that: there is no word for them in the *Iliad*. The most important one is at the beginning of Book II, important because it renews the Trojan War. Agamemnon is asleep in his tent. Presumably, he is in REM sleep. In comes Oneiros, a god messenger from Zeus, whose name comes to mean "dream" in later Greek. Oneiros appears as the much admired Nestor, "stands at his head," tells Agamemnon he is asleep in his bed, and then proceeds to deliver his message, and departs, after which Agamemnon never awakes, arises, and tells the others. Agamemnon never thinks he's anywhere else except on his bed or doing anything except sleeping. He can't because he is not conscious, which is what he would have to be to dream himself somewhere else (translocative) and doing something else (vicarial) as we do in our dreams. It is what we call a bicameral dream, similar to what goes on in the waking mentality of ancient times. Such dreams are very rare today but they occasionally occur with profound effects. Descartes had one and it changed his life.

All four dreams in the *Iliad* are of this type. If we go over to the Hebrew world, the famous Jacob's Ladder Dream is a bicameral dream (Genesis 28:10–22). Jacob's dream takes place

exactly where he is sleeping and he does nothing except hear Yahweh at the top of probably a ziggurat rather than a ladder, with angels streaming up and down its steps, as Yahweh renews the covenant with him. So sure is he that the dream happened where he was sleeping that he anoints the place as Beth-El, place or house of God. Three other dreams are mentioned prior to this in the early chapters of Genesis and they are all bicameral. The Joseph stories that follow, according to modern scholars (Redford, 1970) come from around 700 years later and they are not bicameral.

In the cuneiform literature, we have dreams going back to 2500 B.C. and in hieroglyphics back to the dream of Djoser in 2650 B.C. All are bicameral with one possible exception where the translation is in question.

Going the other direction in time, dreams after the *Iliad* rapidly become first vicarial, the person's analog 'I' in his dream doing something other than sleeping, and then translocative, that is, they take place somewhere other than where the person is sleeping. All of us today have vicarial translocative dreams, which are consciousness operating primarily during REM sleep.

I regard this development, this definite historical change in the nature of dreams, as one of the great confirmations of the strong form of the central hypothesis of the origin of consciousness in the breakdown of the bicameral mind.

Does this theory relate to therapy in any way?

Jaynes: I think there are some obvious inferences to be made. As for schizophrenia, the theory of the bicameral mind in simplified form is at present being taught to hallucinating patients in several clinics both here and abroad. It relieves a great deal of the associated distress of "being crazy" by getting the patient to realize that many of his or her symptoms are a relapse to an older mentality that was perfectly normal at one time but no longer works.

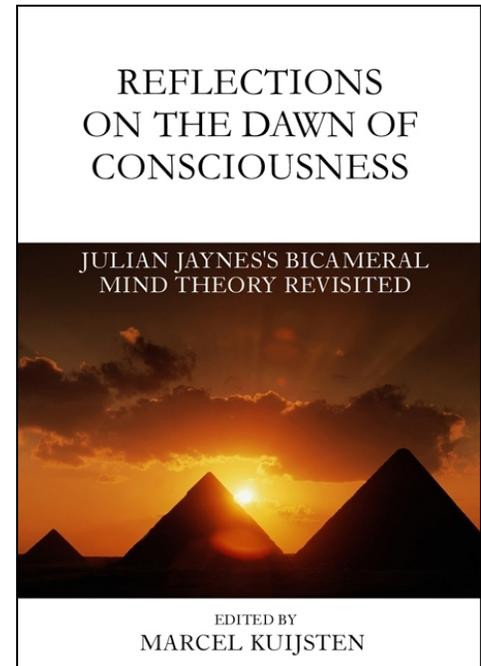
In the treatment of neuroses, the theory provides a strong theoretical framework for such consciousness-changing procedures as the cognitive therapies of Beck (1976) or Meichenbaum (1977), refraining or restructuring, the use of guided imagery, paradoxical therapy and various visualizing practices. Most of what are diagnosed as neurotic behaviors are, of course, disorders of consciousness, or more specifically of narratization and excerption. Therefore, narratization and excerption must be retrained for the patient to obtain relief. Such renarratization is actually what is going on in most therapy, even in analysis of either the Freudian or Jungian variety. And it doesn't matter whether or not the renarratization is existentially veridical so long as it is believed and redirects behavior into more adaptive modes.

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