

Consciousness and the Voices of the Mind: Response to the Discussants

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First of all I would like to say how honored to be the Bauer Memorial Lecturer this year. This has been somewhat historic for me, and particularly made so by the calibre of the discussants. George Ojemann, from Seattle; Jonathan Miller, from Britain; and Dan Dennett, from Boston. It is a flattery that has to be appreciated in terms of the many differences that I am sure we do have. I would like to thank them very much for coming.

In my talk, I presented four central ideas, and I was describing them to you in their order of importance. They turn out to be the order in which I came to them. The most important part of the entire theory is the first, the idea of consciousness, what it is, what it is not, and how it developed on the basis of metaphor and language. Now, had I been a discussant of this work, I would have pointed to a certain incompleteness here and stress, as I did in the question period, how much more analysis of the features, modes, and functions of consciousness needs to be done. The discussants were kind to me in not zeroing in on that.

One theme that seemed to be present in all three discussions was the issue of the brain. The model of the brain in respect to the right and left hemispheres is, of course, not the bicameral mind; that is a common misperception. It is simply a model that can be dispensed with; every mention of the brain could be taken out of the book and everything else could still stand. It is, however, something I couldn't help speculating about.

Let me say a few things about George Ojemann's very interesting presentation of fascinating data. He began by saying that I had said that we shouldn't look for the neurological model of consciousness — I never in the world said that! He must have misunderstood me when I may have said to him last night that there is no neurological model of consciousness in my book. I simply do not know what it might be, and I think one would be premature. So I thought it was both very courageous of him and enthralling that he tried to present one.

Now there were things along the way that I felt troubled about. He talked about consciousness in way contrary to some of the things I said. As I was stressing during the lecture and question period, I think we should define consciousness very carefully. I think he was referring to the ideas of Sir John Eccles and Sir Karl Popper when he talked about collective consciousness being out there in the public domain. To me this is a metaphor of a metaphier applied to something like this, but I think to call it consciousness is to confuse the issue. His later distinction, however, between consciousness and conscious experience is more interesting, although I think he is confusing consciousness and awareness or reactivity in his first level. His “conscious experience” with its episodic memory is precisely what I call consciousness. Perhaps if I changed the title of my book to ‘the origin of conscious experience in the breakdown of the bicameral mind,’ he could find it more to his interest. I prefer to remain with consciousness as Locke and Descartes and most other people—including behaviorists—would define it, as what is introspectable.

George also mentioned consciousness in animals. I felt I was showing that indeed this isn’t possible since it is based on language. Then he went on to present the thalamocortical activating system as a neurological model for consciousness, and pointed to its ancient evolution, thereby inferring that there is a very ancient source of consciousness, and that it is present in consciousness, and that it is present in animals generally. While the neurological model is not completely contradictory to anything I said, his inferences most definitely are.

Now, behind his inferences is the assumption that the functions that are at certain anatomical sites of the brain today have always been there. Yet I think we do know that this is not necessarily so. For example, consider the speech areas of the brain: language is established in them. Therefore I do not see why other parts of the brain cannot have other functions established in them, so that what we find there today may not be at all the record of what happened previously, even though that particular structure or tract may have had a very ancient kind of evolution. That is why this extremely interesting thalamocortical activating system model is not inconsistent with what I have said. Indeed. I would certainly agree that it has to be involved with the neural substrate for consciousness today in some way. I did not mean, incidentally, to give the impression that consciousness only involves the language areas of the brain — we know that is not true. But I did suggest that is where the development of consciousness got started long ago.

Dan Dennett was of course mentioning that he felt the brain was what I didn’t want to give up. I don’t feel I am going to, but that is not the really essential thing. I liked it that he singled out things in my book that other people haven’t, like the idea of concepts as classes of behavioral equivalence which are not usually conscious. He is the first person to ever mention it, and when one has taken a long, long time plowing through the minefield of one’s confusions to finally reach a clarity that results in only a simple couple of sentences, it is gratifying when a prominent modern philosopher like Dan notices it. I was also appreciative of his brilliant discussion of the use-mention criticism of the theory.

He went on to speak of optional features in the theory, such as the optionality of hallucinations. Yes. I would find it difficult to dispense with hallucinations. They practically define the bicameral mind. Hallucinations seem to be simply a close reading of the data, the

historical data, in the sense of trying to understand religion and the history of religion. If it isn't auditory hallucinations in all these ancient texts, then there has to be some other explanation for it. What is it that is happening in Amos? Is it just concocted by somebody for the sake of controlling the people at that time so that they fit into the Judaic system? Jonathan Miller was perhaps suggesting such a Marxist explanation. I disagree on two grounds: the text internally has a strong authenticity of reporting as to who Amos is, contrary to any Marxist interpretation, and secondly there exist many other instances of such messages from gods all over the world in every early civilization and even today.

The metaphor of hardware/software is a good approximation that in the change from bicamerality to consciousness the hardware remained the same, but the software changed. But it is only an approximation. When we change the software of a computer, we are not changing anything in the chip, but changing what goes into it. But in the brain, any experience changes the ultrastructure to some even minute extent. This is particularly true in development where we know that the brain undergoes permanent changes as a result of experience. For example, the infant starts off with an ability to recognize a huge variety of phonemes. Then after the child is embedded in its language and culture, say by about age 4 or 5 years, it loses even the possibility of recognizing about a third of possible phonemes. Now, I do not mean that the neonatal preprogrammed structure of the brain changed in going from the bicameral mind to consciousness. But the later structure of the infant brain does change due to experience. In my book, I entertained the possibility, and only the possibility, that there could have been some kind of genetic change, since perhaps half the people of the world were killed off in this particular period and it seems likely that these might have been the most bicameral. But natural selection is not what I wish to emphasize, but rather learning. If you had a child in the bicameral world and brought it up in our culture, I think he would be like you or me. I think if you took any child today, and could give me an island and 200 actors and let me construct a culture with an expectation of hearing voices the way I have described it, that I could bring up a modern child to be bicameral. Thus, I am emphasizing the importance I give to child development and early education in children in this whole matter of consciousness and perhaps in the matter of how some different parts of the brain can work.

In Jonathan Miller's fluent discussion, I think I detected a tendency to let certain word-usages, personifications, and error-by-associations do the labor of intellectual argument. For example, to call verbal hallucinations imaginary is to me a serious confounding of two very distinct phenomena. Auditory hallucinations are not the same as imagining someone speaking to you. They come at a person; they are usually definite and discrete. And it is simply not true in my experience or in the literature that schizophrenics in general label their auditory hallucinations as such, although some perhaps call hallucinations hallucinations. This is not the common thing. If you go into mental hospitals and talk to hallucinating patients, you will not find that many of them do so unless their disease is lessening. But there are other qualities that are indeed like the bicameral mind in terms of their religious quality, the power that they do seem to have, and it is different from just having an imaginary voice. It is a phenomenon that has to be paid attention to,

brought into psychology and studied further. We went through a whole period of Freudian psychiatry, mostly where this was not paid attention to at all, and you cannot find very many really good studies about hallucinations in schizophrenia.

One deduction that follows from what I have forward as the neural substrate for the bicameral mind is that present-day verbal hallucinations may originate in the right temporal lobe many cases. This can be empirically tested. While no definitive results have yet been obtained, several lines of research implicate brain functional laterality effects in schizophrenics. For example, in some positron emission tomography studies (Buchsbaum et al., 1982) patients showed higher glucose uptake (and therefore increased functioning in the right temporal lobe while hallucinating. I must add, however, that later studies have indicated that the neurological basis of hallucinations may be more complicated than such a simple picture. But several other studies agree with the conclusion that in schizophrenia we have what can be considered as either a right-hemisphere overactivation of function or a left-hemisphere deficit (Flor-Henry, 1976; Gur, et al., 1983).

Another place where Jonathan seemed to be begging the question was where he said the Iliad is, after all, a work of art; as if that meant it was consciously composed. Here as elsewhere Jonathan has missed the point by a rather wide margin. Art today in any medium is partially and sometimes almost entirely of non-conscious origin — even as in my lecture I tried to emphasize about ordinary speaking. Of course we use consciousness today in art to criticize and judge and reshape the products of non-conscious creation. But for bicameral times, a case can be made list art originated completely in the god-side of the bicameral mind. Many texts — cuneiform, hieroglyphic, Greek, Hebrew, Sanskrit — bear this statement out. How to build pyramids, temples, tabernacles, and how to carve idols were literally dictated by gods down to the last detail. And poetry also. The first line of the Iliad demonstrates the origin of the poem: “Sing goddess of the anger of Achilles” — although as I mentioned earlier, conscious elements were added later in the first millennium B.C. It is extremely important to understand that this is oral poetry recomposed on the basis of story formulae and descriptive formulae and repetitions by the *aoidos* and altered and reshaped by audience reinforcement over almost half a millennium in many locations.

Of course, we do not have to use the Iliad at all to illustrate these issues. If we go back earlier to the so-called Linear B, the earliest kind of Greek that we can translate and that predates the Trojan War by several centuries, it is clear that there was a strict hierarchical structure just as in Mesopotamia. At the top is the *wanax*, which in later Greek means a god; the land of his state is the *temenos*, which later means land sacred to the gods; and the chief steward of the wanax is the *basileus*, which later means king. The texts do not, however, give you evidence for hallucinations directly, but rather for a firm hierarchical structure so similar to bicameral theocracies in Mesopotamia at the same time.

Also, Jonathan disagreed with me about “imaginary playmates” or hallucinated playmates as they should be called. Following Freud, he feels they are adversary fictions, which to me is an

adversary fiction itself. I do not think that such a phrase is true to the phenomenon at all, and could only be used by those who had never studied such children. Dorothy Singer has extensively studied the phenomenon of imaginary playmates. On the basis of her findings, she is convinced that indeed such children are hearing voices and carrying on conversations with them (Singer & Singer, 1984). Other investigators also agree that the phenomenon involves true verbal hallucinations (Harvey, 1918).

My own research into hallucinated playmates has unfortunately been restricted to adult memories of childhood by questionnaire and to parents' observations. I would like to interview the playmate directly via the child, which is probably rather difficult to do if one is a stranger, and unfortunately I have not been able to do this. I think I can summarize the kind of things I have found by describing a seminar on imaginary playmates that I gave at a southern women's college. We went around the room to determine who had had such playmates, and it turned out that over half the young women had had imaginary or hallucinated playmates—an incidence slightly higher than normal, perhaps because the college had a religious basis and the seminar participants may have been somewhat self-selected. Such playmates were of enormous variety: old and young, dour and joyous, elaborate and simple: "Pookie" who had to be met off a certain daily train by her human friend and then brought across a field to the child's house to play and have lunch, her place set at the table, and later returned across the field to a returning train, to be helped aboard by a kindly conductor as the child waved goodbye to nothing that anyone else could see; or at the other extreme, a man in a black cloak who sometimes brought his brother — about which I felt I shouldn't inquire further. Then I asked each of them if they had heard the imaginary playmate "like an outside voice," and half of those who had had such playmates said yes, the others said they could not remember or that I was just told I had an imaginary playmate, but I really can't remember." Most of those who remembered hearing the playmate could then, imitate it. After the seminar, one woman who looked worried came up to me and wished to talk alone. She explained that she hadn't raised her hand because this was much too serious for her. When she was a child, her mother and father were very poor and they both had to go to work, and she was left at home in the care of a schizophrenic grandmother. The grandmother was hallucinating voices in different rooms of the house, and she learned to hallucinate playmates, a different playmate for each room, and carried on conversations with them just like her grandmother had with her voices. I think that is interesting because it is the verbal-behavioral surround that you give to a child, full of its expectancies, that possibly related to the ontogeny of the bicameral mind in antiquity.

She then went on and said that when her mother realized what was going on, she quit her job, sent the grandmother to a mental hospital, and came home to train the child out of these "playmates" — which was successful up to a point. But she added that now that she is grown up, she has this problem. When she gets into periods of stress (and she seemed to be undergoing stress at that very time) all her imaginary playmates come back, and they are all grown up like her, and they all stand around and try to tell her what to do. Then she followed this with a question that I, a rather unthinking bachelor, didn't understand. She asked me if this was innate or learned? The question took me by surprise, and I'm not sure how I answered. It was only later

that a friend suggested to me that this young woman was probably considering marriage and did not want to have children if this was innate and if they would have to go through the same thing she had experienced. I hope I answered correctly by explaining to her that it was as most behavior is, both innate and learned, and that innate in this instance means a potentiality and not a necessity.

I do not think this is the time or place to argue whether or not my views should be relegated to the compost-heap of unfashionable anthropologies as Jonathan covertly suggested, but I would like to finish this response to the discussants with a few remarks about Lévy-Bruhl. He is having something of a small renaissance now in anthropology because he has been so despised by the now ageing Boas School, of which Margaret Mead was the best known. I once inadvisedly brought up the name of Lévy-Bruhl to Mead at dinner, and I thought she was going to be ill. We quickly changed to another subject. The reason that Lévy-Bruhl still begets this visceral reaction is because, working with Durkheim's (1915) concepts, he set out to show that primitive peoples were very different mentally from ourselves, were governed by "representations" (something like what I call collective cognitive imperatives), and were "pre-logical." To the Boas School, all peoples everywhere were the same mentally. Student anthropologists were forbidden to study mental differences, and such ideas as in Lévy-Bruhl seemed to lead to racial prejudice of the worst kind. And they may have, back in the first quarter of this century.

This is no longer true. Once we realize that human mentality is partly learned, and particularly that our mentality, consciousness, is mostly learned in the verbal community and expectancy surround and peer-pressure imagery of ontogeny, the matter is entirely in a new perspective. I do not particularly agree with his Durkheimian concepts, and there is a problem in selection of material, Lévy-Bruhl's books are excellent reading for the data they present. These are collections of descriptions of the first meetings of many different primitive peoples with Western observers.

Once we realize that a child from any of these mentally different bands and tribes brought up in our own society would be mentally just like ourselves, we are in a position to begin a true anthropology of mind—if it is not too late.

To state in a few sentences my own point of view, I think that the majority of hunter-gatherer groups today are the result of several different routes of history. Many, the majority perhaps, have been a part of a bicameral theocracy one or more times; hence the ubiquity of references to "the ancestors" and a host of shamanistic practices and rituals. (We should remember that there were many bicameral theocracies over the world at various times, rising up and periodically breaking down, not just those I have mentioned.) Other bands perhaps may have been like other primates, being neither bicameral nor conscious, and may have or have not learned such practices from others. But in the last millennium, and much more intensively in the last three or four centuries, almost all such tribal peoples have been taught a conscious mentality by trade, conquest (particularly in the 19th century and during World War II), and association with other conscious peoples, including other conscious tribes, missionaries teaching a soul-body dualism, and anthropologists themselves mapping our language onto theirs. The last possibly truly isolated

tribe was on the Amazon and has been in contact with Brazilian anthropologists only in the last few years.

Anthropologists once had the assumption that if you find a hunter-gatherer tribe nowadays, it is in a stone age similar to a pre-civilized era. This is not true. Each has had a history just as long as we have, and perhaps a complicated history of going through a bicameral phase somewhere, then breaking down, migrating somewhere else, and perhaps going through another bicameral phase, perhaps for a time mingling with conscious people. As well, so much comes in by diffusion — that difficult concept in anthropology that still does not have a good theoretical base, but appears important in many of the features of civilization found in hunter-gatherer groups.

A final note. Jonathan Miller, I think, stated that writing was an attribute solely of the leaders. I don't think this is true to the evidence at all. Read the letters to underlings and the stelae set up to give commands to the public in Mesopotamia. Recently, in a remote newly opened mine in Mount Sinai, there has been discovered the writings of the names of goddesses scratched on the mine walls that have been clearly dated by scholars to about 1500 B.C. I doubt if Mesopotamian leaders worked in the mines, although there is much left to understand on this topic.

Well, these are the points that I felt I should cover. I am going to close here and leave further discussion to other people. Again, I would like to thank our discussants for being so generous with their time and effort in coming here this afternoon.

Panel Discussion

JAYNES, DENNETT, MILLER, AND OJEMANN

Dennett: Since I have two microphones, one for each part of my mind, even if not parts of my brain, maybe I'll make a point or two first. The hardware/software distinction has to be handled very carefully because of course (if anybody doesn't realize this already) we do know enough about the architecture of the brain to know that there isn't a CPU (central processing unit) and a bunch of registers in it, and so we don't store a program in the brain's registers. All I mean by software in this context is really, I think, what Julian wants. Of course, even in a computer, to put some software in you must make a physical change in the computer. The change can be thought of as more or less isolated — packed off into some memory somewhere, maybe even off on a disc or on tape, but that is irrelevant. A software change — a change in "concepts" — *is* a physical change; it is a transient, temporary, change in the microstructure of the system. You can "undo" the change with more software — you don't need to use a screwdriver or a file. And, similarly of course, if we are going to be good materialists, we must suppose that when a child, say, grows up in one part of the world and learns French, this is embodied in very subtle changes in the physical structure of that child's brain, which nobody of course would be able to determine by a microscopic examination of that brain, even though those changes are in there. Now just as if you raise a child in France, the child learns French, and if you raise a child in the United States, the

child learns English, so if you raise a child in the post-bicameral world, the child “learns consciousness,” and if you raise the child in the bicameral world, the child “learns bicamerality.” Those are different software configurations of the hardware, and, of course, at some micro level those are all hardware changes because you can’t put the software in without making tiny changes in structure. So, I think we can use a sort of biologized version of the term software here, if we like, to mean the sort of thing that Julian wants.

Jaynes: Thank you, I really like that.

Dennett: Another comment I am a little reluctant to enter into because if I really got going on it, I would take half an hour. I think I know how to do most of what you want to do without the hallucinations. But it is nowhere near as exciting, although it still seems to me to be very interesting. I will just say a few things to sketch it out, and then tonight perhaps we will thrash it out for hours.

Jaynes: I would like to.

Dennett: Here is my very boring alternative. Why couldn’t the voices you make so much of just be a phenomenon that we all know anyway, the familiar sort of obsessive memory, like having a damn jingle running through your head? That is not a hallucination. Advertisers are very good at writing jingles that once they get in your head, stay there. You keep hearing them, but you don’t have to suppose it is a hallucination. It is just a memory which gets triggered under various circumstances and it might be memory of admonitions that were particularly impressive when you first heard them, for instance. Now that is just the first step. I take it that when you recall a jingle, you don’t call it a hallucination.

Jaynes: I wouldn’t say so, no.

Dennett: Well, I would take that slender phenomenon and build on it in various ways. There is a whole side to Julian’s book which none of us has discussed which is perhaps my favorite part of all, and that is the relationship between consciousness and control, and the idea that the crisis for which consciousness is the ultimate stabilization is a crisis of control where individuals who had been controlled by leaders, more or less the way bees are controlled by the queen bee (or among mammals, the way mole rats are controlled by the queen mole rat), could no longer be so controlled. At some point in history, Julian says, social organizations got too large, groups of people got too large, and their projects became too complex for that sort of monolithic control to be practical, and so ordinary people had to become self-controllers for the first time, and this was a real crisis for them. I think that idea can be extrapolated in very interesting ways. It is a project I have been working on myself, but I will not say more about it right now, or I will go on for an hour.

Ojemann: Perhaps then I will say something about the neurologic model, since that stirred up a bit of discussion. It seems to me that there were ready two major points in Dr. Jaynes' book that this bears on. One is his suggestion that consciousness, in the main at least, involves an analog of the world in words, which I believe was his terminology slightly paraphrased. I think for that there is fairly good neurologic evidence. You can show a lot of behavioral changes that we would interpret as alterations in consciousness that occur in parallel with alterations in at least the phenomenon that is so hard to study, that one calls inner speech.

I think that when you turn, however, to what I see as the second point — that is, was that phenomenon something that was learned three and a half millennia ago? — I think the evidence is very poor from a neurologic standpoint. I think if you identify the likely substrates of consciousness and inner speech as the thalamocortical reticular circuits playing on language cortex that produce events essential to the inner speech and that alter or modulate your attention to verbally codable information, those seem to be structures which have been there for a long time — more than three or four millennia. While one cannot say for sure that there wasn't some change in their function at that point, it appears that these are systems that are present much earlier in the animal kingdom, at least in their anatomic features. At best you can say that in man they have been adapted to special needs related to language. That is where I think the quarrel comes. You look at the anatomic substrate and say, all right, the thalamocortical part of it is present for such things as motor learning in cats, is adapted in man with a little more lateralization, but at least the basic mechanism of this is present much earlier in the course of evolution. You look at language cortex. Well it is not there in monkeys, but you can begin to see changes in chimps and orangutans. You can certainly see it as a much more rapidly evolving system, but not evolving in the course of three millennia, but over a much longer time course. So, it is not that this is a system that is not changing, but it is changing over a time course that is so much longer than the one proposed by Dr. Jaynes that it seems unlikely that there was some learned event so recently ago that changed it. So while I tend to agree with the first point, that is, that language is the essential thing for most of conscious experience, I have trouble with the second.

If I can close with the Joan of Arc comment. The data on Joan of Arc ran like this. Remember, Joan of Arc's heart did not burn. One of the few conditions that would make a heart not burn is calcific tuberculous pericarditis. Of course, tuberculosis was very common at that time. A common sequel of someone with tuberculous pericarditis is to have tuberculomas in the brain. A common sequel of a cerebral tuberculoma is temporal lobe epilepsy, and there we have the hallucinations that changed history.

Miller: If I may just make the point here about what William James (1929) calls medical materialism. In a sense, I am taking issue here with both you and Julian for trying to see all this in terms of brains rather than societies. I think that most of the things that you are describing about the transformations and changes that have taken place in human self-consciousness could be perfectly satisfactorily described in terms of the development of cultural artifacts, through the

medium of which we succeeded in building up elaborate representations, not only of the natural world in which we live, but also of ourselves in the social world. Writing, far from being a sort of fire extinguisher which puts out the hallucinated voice, provides a more manageable way of moving counters around in the menial game of describing your own personality. Without writing them down, your thoughts are nothing more than a fugue of forgettable sentences. Here we are, all scribbling away, not able to marshal our own arguments unless we remember what the others have said; we can't even remember what *we* thought unless we jot it down.

One of the points that Jack Goody (1977) makes in his book *The Domestication of the Savage Man* is that the most insignificant thing that emerges with writing is that you write down lists and tables. Once you start doing this, you can have very elaborate degrees of reflectiveness. I would attribute most of the changes that took place to writing, as you do indeed, but for very different reasons. The reason why writing did it — and I think that McLuhan's (1964) version of what writing did is nonsensical — is that it enabled us to visualize our thoughts and therefore to play much more sophisticated board games with psychological reality.

Jaynes: I like what you are just saying. But when you use the metaphor of writing “putting out” the voices, I would suggest that it is only one of the things. I am not trying to waffle here. Every large event in history has multiple causes and so likely did the breakdown of the bicameral mind, as I am sure you understand. This event here this afternoon has multiple causes.

Miller: In connection with that, I'd like to modify what I said about the cunning conspiracy of priestly kings who manipulate, as it were, the public relations office of the gods. That is not what I meant at all. I am not suggesting that the priests deliberately invented the gods in order to control society. I am not saying that there was a design conference in some ziggurat where they said, “Well, let's run this up the flagpole and see how it comes out!” What happens is that theological imagery gradually evolves; and people find themselves under its hegemony. The same thing happens in complex literate societies. We know, for example, that the structure of the Anglican Church in England in the 16th century resulted in an authoritarian structure which exerted political control over society at large.

All we know is that when there are social crises, due to catastrophic crop failures, for example, there is often a change in political authority, and with the upset *political* authority there is often a collapse of the theological system, which is, after all, a constitutive part of the social structure. It's nothing to do with hallucinated voices!

Jaynes: There are some data which I think are relevant here. When you look at the writings in the period from 1400 B.C. to 600 B.C., those that are not simply factual but are more meaningful to us do talk about wanting to get back to the gods. Where have the gods gone? They don't call them voices. This is very distinct in the Hebrew hymns, for example, and it is very hard to know what Psalm 42 would mean otherwise:

As the hart pants after the water brooks, so pants my mind after you, o gods when am I going to see gods face-to-face again?

This is the proper translation of this Psalm, and it is not an isolated example.

Miller: I think to use your own apparatus of metaphors and metaphrands and so forth, what is going on here is an elaborate way of representing in the idioms and currencies of the time, a sense of loss, nostalgia, or something of a previous stability which in fact is best often personified. It is easier to do it, we still do it today without being bicameral. It's a way of representing things. It is still in political cartoons personified. I think that this is the "in" poetry and is often the best way of carrying the message across, but not because such poems with their personifications are the residue of actual direct experiences of personal address inside the head.

Jaynes: I do understand your point of view. You are saying it is all metaphorical and poetry, related in fact to the loss of some kind of reality which could be this authoritative structure. I, of course, am preferring to take the historical data absolutely literally. They meant what they said.

Dennett: There is a time and a place for metaphor!

Open Discussion

(From audience): I would like to address this to all the participants. Harry Jerison (1973) in his book *Evolution of the Brain and Intelligence* a number of years ago suggested that consciousness was the highest level of abstraction of the sensory input and that's the level we work at. I was wondering if this fits into your model. Dr. Jaynes, and what the various participants think about this?

Jaynes: The statement was that consciousness is the highest level of abstraction. I don't think that means very much. It's like saying that a concert performance of a Beethoven sonata is the highest level of physical exercise: it may be, but such a statement doesn't tell us much about music or its forms. Let me add that I have a great respect for other aspects of Jerison's book.

My view of consciousness cannot be easily translated entirely into terms of abstraction. The analog 'P', narratization, and mind-space are certainly powerful abstractions of the highest order, and therefore Jerison is partly correct. But as Dan Dennett pointed out, about a bee having a concept of a flower, there has to be some kind of abstraction in the nervous system of the bee for it to be able to recognize flowers. And the bee is not conscious. So, to try to define consciousness in terms of pure abstractions may be confusing the issue, rather than clarifying it.

Dennett: I would want to add two things to that. First of all, I think we should always be suspicious of any evolutionary argument which starts using the word "higher" and seeing a gradual upward progression. Here we have "higher" doing two jobs for us: one is where we are going up the phylogenetic scale, and the other is where we are going up, up, up in the familiar, if

somewhat threadbare, idea of higher abstraction. I don't like either progression in this case. On any account of abstraction that I would be happy with. I think a lot of our unconscious mentation involves abstractions that are greater, or more abstract, than those contents that are consciously accessible to us. So if I took Jerison's definition seriously, I would be in the awkward position of having to say that I have absolutely no access to my most conscious thoughts!

Miller: Why use the word abstraction? I prefer to use Craik's (1943) notion of the brain as an internal model-maker, as something capable of maintaining a high degree of constancy in the face of the variation in the sensory input. What we mean by a successful internal model of the world is one that remains stable in the face of an otherwise bewildering flux of sensation.

Ojemann: I think one can show a dissociation of abstract skills and consciousness. In the reports of the people who have had major hemispheric strokes in the language area, in the course of their recovery what they tell you is that as their internal speech comes back their consciousness comes back, but their consciousness is now constricted: it is now concrete, they have lost a lot of the abstract ability that they had before. I think in that sense you can dissociate them, and if you consider abstract ability a higher function, then in that sense consciousness is not the highest function of the human brain, because it can be there in a setting where the other is gone. Perhaps the conclusion from all of this is that for once the panel agrees!

I would like to ask a question about the use of some biblical stories to support the idea of god or the right hemisphere speaking to people. The question is addressed to Julian Jaynes and Jonathan Miller. I am not familiar with stories from other cultures, but in the Old Testament, especially in the story of Amos, since that was the figure you chose, God did not choose to speak to someone very high up in the hierarchy. In fact, what's typical of biblical stories is that God rarely speaks to kings. He doesn't like to speak to kings. God speaks to people who undermine the social order, rather than people who should preserve it.

Second, its clear from a lot of the descriptions from the bible, that God hardly ever speaks to everybody — except in unusual cases such as the Revelation on Mount Sinai. There are people who are chosen as prophets; they're select. He doesn't speak to the ordinary man. In fact, when individuals challenge the prophets' authority and unique qualifications, as in the tale of Korah in Numbers, they are destroyed by God: but God doesn't speak to them to tell them that he is going to destroy them. The premise has always been that prophecy is a very select calling in the bible. Also, the biblical Hebrews' notion that the "idol-worshippers" actually believed that their statues in fact spoke to them seems to have been based on a misconception of what it was these statues did (what purpose they served) in the surrounding cultures. Kaufmann (1960) in commenting on the ancient religion of Israel claims. in fact. that ancient Jews were so far removed from idolatry that they no longer understood what it was that the idol-makers believed in. Kaufmann says of the Jews that their view of idolatry was laughably simplistic. The ancient Jews thought erroneously that idolators, in fact, believed that their icons would speak to them, something which I think you. Dr. Jaynes, believe as well. Kaufmann, however, asserts that in idolatrous societies, the icons behaved more in the way that Jonathan Miller claimed a picture of the Pope or an icon of Jesus behaves to a believing Catholic. These icons were simply icons that represented a deity, not real gods themselves that

anyone in those idolatrous societies actually spoke to. I suspect in those societies maybe people believed gods did speak to kings, but I don't know very much about those societies. I only know a little about biblical literature.

Jaynes: If I could first reply to that. Indeed, such statues are definitely called gods in the Hebrew bible.

(cont.): That's right, but erroneously!

Jaynes: I am not making judgments. I am just looking at the whole series. Nor am I just looking at the Jews. The evidence for idols, a truer term than icons, during the time period of the Hebrew Testament is considerable. Else why would so many of the prophets inveigh against them? Idols are particularly evident in the early books, from the *elohim* or gods that Laban accuses Jacob of stealing (Genesis 31:30) to centuries later when the Philistines after defeating Saul run and tell their *atsabim*, their idols, before they tell their people (I Samuel 31:9; I Chronicles 10:9). To call such god-idols merely icons like pictures of the Pope is a serious misreading of the texts and contradicted in many passages (see, for example, I Chronicles 16:26). It is a further instance of the presentist fallacy referred to earlier in connection with the Egyptian pyramids.

(cont.): I'm sorry, maybe I misunderstood. Didn't you say that, in fact, the bicameral period is the period in which people hear gods and that Amos was indeed representative of the bicameral mind?

Jaynes: I did not use the word representative. Amos is a shepherd brought in from the fields of Tekoa who is unusual for his time because he hears a voice that has this authenticity.

(cont.): Amos is not unusual among the prophets.

Jaynes: He is unusual among the Hebrews of the time, which is why the scribes are following him around.

(cont.): Every prophet is unusual among the people of his time. He is not unusual among prophets in nearing voices and he is prototypical of the prophets that supposedly came either before or later.

Jaynes: You are talking as if there is a huge number of prophets.

(cont.): Not at all. You are talking as if there were a huge number of people who heard voices and there is no such evidence.

Jaynes: I think you misunderstood me. Because I didn't mean to say that this is the bicameral period. Prophets, just as the Oracles in Greece, are these special people who have this remaining ability which was highly prized by the societies as they were groping towards consciousness after the end of the bicameral period.

(cont.): I just see this as being very slippery. Let me try to understand what it is that you are saying again. Then I will stop. The evidence that you have for a bicameral period, where people hear voices, you claimed, is based among other sources on evidence of these biblical writings. Among these writings that you mentioned was Amos. Now if Amos is unusual, then what is it that you are basing your evidence on and why bring Amos into it altogether?

Jaynes: You can leave him out! Amos is in 800 B.C. This is late. The evidence for the bicameral mind is in all Greek, Hebrew, cuneiform, hieroglyphic and other ancient texts of the second and third millennia B.C., as well as the archeological remains from that period and earlier all the way back to the 9th millennium B.C.

Dennett: I am not sure, but as I understand Julian, the prophets, all of them, were not themselves living in a bicameral age: they were bicameral throwbacks of the earlier bicameral age, living in an age which was essentially like our age. The conscious age, and so that is what makes them special: they are the dinosaur-links, as it were, to our bicameral past.

(cont.): I just think that you can't play this kind of game — the attitude that is presented here. In our age if someone told us that they heard the voice of God, we would not follow them, there would not be scribes going around preserving their words for centuries. You can't say Amos was a throwback to the bicameral age and then say that everybody else in the society is like as. If everybody else was like us, Amos' writings would not be kept — any more than the rantings of any other lunatic who tells us they hear the word of God.

Ojemann: I would like to make two comments on that. First, the following of prophets who hear the voice of God and having these words recorded by scribes quite clearly does happen in our age: one need only take the example of Joseph Smith and the rise of the Mormon Church as one of many. The second comment I would like to make, and I think this might be the right place for it, is to raise an issue with Dr. Jaynes. He indicated that this right-hemisphere effect on hallucinations was the origin of religion. At least that is what my notes say, although they may not be correct. There is only one study that I know of that has looked at the effect of brain lesions on religious performance. That is the study of Bear and Fedio (1977) on people with temporal lobe epilepsy. That study suggested that lefttemporal lobe epilepsy is associated with increased religiosity. I just wondered if Dr. Jaynes wanted to comment on that or relate that in any way to his idea.

Jaynes: Could I simply ask you a question on that point, because I wish to defer to you in the matter. Left-lobe epilepsy would mean some foci of epilepsy in the left hemisphere?

Ojemann: That is correct.

Jaynes: Could this then mean that the right hemisphere was taken out of a certain amount of inhibition and therefore could have been, what will we say, overactive, resulting in activity manifesting as increased religiosity?

Ojemann: Bear and Fedio don't interpret it that way. They interpret it as hyperactivity in the left temporal lobe responsible for this picture of hyperwriting, hyperreligiosity, and hyperintrospection. On the other hand, your interpretation might be a correct one, but it is not the way they have interpreted it.

Miller: To amplify on that. Again, I would like to dispose of this medical materialism. If you are going to talk about prophets, seers, shamans, and so forth, I think we can do so without having to get into conjectural neurology — we don't *need* to think about bicamerality or about tuberculomas or temporal lobe epilepsy. As far as I can see, it's much more helpful to take *social* factors into consideration. In other words, even if one accepts the fact that certain people "hear" or claim to hear voices, what one wants to know is why it is that at certain times and in certain societies, such people are credited with oracular authority — and that in other societies they are just as likely to be locked up! I find I. M. Lewis' (1971) analysis much more fruitful. He identified the *social* types who displayed oracular powers and showed that in certain contexts, unfortunate and often alienated individuals could graduate from the status of hysterical victims to the role of prophets and shamans. In other words, in societies which looked upon seizures with awe and dread, an afflicted individual could sometimes manipulate his or her defect to advantage; so that affliction becomes the royal road to social importance. What we are dealing with here is the social and cultural significance of charisma — beautifully described by Max Weber (1964) in his *The Sociology of Religion*.

May I ask a question?

Miller: I hear a voice!

I want to preface my question with the comment that this has been such an intellectual feast that I feel ingrate asking for more, but Jonathan Miller's last comment really gives me an opportunity to ask if the panel could say something about the role of the spontaneous transcendental experience in the context of the evolution of human consciousness. The reason I raise this is one, because I am greatly interested, and two, perhaps our guests may not know that Hamilton was the place in which Dr. Richard Maurice Buck (1901), a psychiatrist, first started work on his book Cosmic Consciousness, which does attempt to explain, in somewhat Darwinian terms, that human consciousness is evolving and then are forerunners who have these somewhat mystical experiences. I wonder whether the panel might want to comment.

Jaynes: That is a difficult question to answer succinctly, but let me try. I have been speaking of consciousness as a human product, an ability that is learned in history in order to cope behaviorally in a civilized world. If I am correct, Dr. Bucke was assuming the existence of a

cosmic consciousness, a higher form of consciousness out in the universe that some special individuals can approach and be part of. So-called transcendental meditation has a similar belief. Such notions to me are unnecessary metaphysical suppositions that are not in agreement with general scientific principles of parsimony and evidence.

We've been talking about the disappearance of the voices of the gods away back in time, and yet it seems to me that Carl Jung took very seriously the archetypes and other products of our unconscious. Could you help me understand the relationship between this and the Jungian concepts?

Jaynes: I would reply that Jung had many insight indeed, but the idea of the collective unconscious and of the archetypes has always seemed to me to be based on the inheritance of acquired characteristics, a notion not accepted by biologists or psychologists today.

Dennett: I just have one more remark to that. One might try to salvage the Jungian idea in the face of the simple unacceptability of its Lamarckian underpinnings, by a hypothesis about very persistent regularities in the social environment which would create the sort of effect that Jonathan has just been talking about. That way you could make an honest, not mystical hypothesis out of a notion like the collective unconscious. You would have laundered quite a lot out of it, but then you might find it serviceable.

Presumably at any moment an individual would either be bicameral or not. I would just like to pin it down the individual animal the moment: it is agreed. isn't it, that a person either is or isn't conscious?

Jaynes: It really does depend here on the historical period you are talking about. Consciousness and a kind of bicamerality can exist together. For instance William Blake indeed had hallucinations of his poetry and many of his paintings are direct hallucinations well, and at the same time he was indeed conscious in the way he related to and talked to the people (Jaynes, 1981). And there are many other examples like Emanuel Swedenborg and several others I have interviewed recently. So you can't say in general that people who hear voices in the modern era are not conscious.

(cont): Let me explain why I am asking this. As you know, people now believe that most systems in the developing individual brain go through a critical period in their development, and during that period for example in the system dealing with vision, they have to receive an appropriate input from the environment; if not, then the behavior the system is destined to deal with develops abnormally. Now, supposing there were a number of systems, perhaps working in parallel, that together were the substrate of consciousness, and that they had a critical period; would you now be able to say (and perhaps you could look into your own material and answer this) whether you could suppose that the environment could be pinpointed into a number of items which, if they were absent, would not result in this total system developing appropriately, and that this would result in the absence of consciousness, as you defined it? If the inputs from the environment were present during the critical period of development, then you would have consciousness.

Jaynes: I think that is a very interesting statement, particularly the idea of parallel development of different neurological systems. I am sure the truth is not as simple as I have presented it this afternoon. Uneven parallel developments could indeed build in considerable complications. That there therefore could be a people brought up in a certain environment that during critical periods for certain lines of development did not get the necessary input, thus resulting in some kind of deficient consciousness, is a provocative and important hypothesis. It is the kind of idea that empirical studies of different cultures would illuminate. But I suggest that the idea of consciousness will have to be developed a little more finely in order to study such questions. The science of the development of consciousness in children over the last three millennia, whether or not based on some partial innate substrate, is an important project for the future.

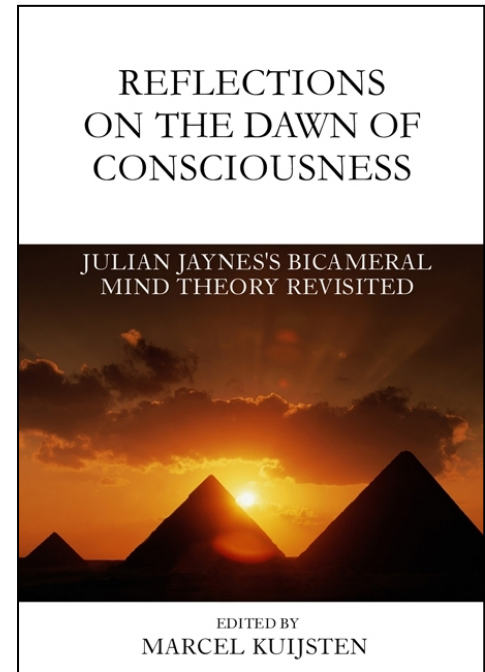
Ojemann: The issue of critical periods and their impact on brain development obviously is a very essential one to this, but I put a couple of cautions in here. It seems to me that what we know of critical periods is that where they have been clearly shown is in sensory systems. Whether that can be generalized beyond sensory systems I don't think we know. Secondly, they have been shown only under very, very adverse environments and whether the environment when the world was in all that trouble got bad enough, three and a half millennia ago, I don't know. I will crawl out on a limb and say that I would guess that if one is willing to accept at least some of the neurological model that I proposed as a basis of conscious experience, that there probably isn't much of a role for critical periods. The brain mechanism for conscious experience in that model is available as hardware for a variety of learning situations.

I will also respond to something that Jonathan Miller said a little earlier. The consideration of disease in my discussion is because of the problem one has if you are interested in trying to identify what the role is of "hardware," that is of brain structure, in a variety of behavioral states. You are very limited by the opportunities that you have to investigate this matter. Disease states in man represent one of the very few opportunities to really make a set of observations that will allow you to sort out what are the behavioral implications of damaging a particular piece of "hardware." That's the reason one turns to that so often. It's not what you really like to do, but it is one of the few sources for data on human brain function available to you.

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