Greek zombies (*final draft*)

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ABSTRACT *This paper explores the possibility that the human mind underwent substantial changes in recent history. Assuming that consciousness is a substantial trait of the mind, the paper focuses on the suggestion made by Julian Jaynes that the Mycenean Greeks had a 'bicameral' mind instead of a conscious one. The suggestion is commonly dismissed as patently absurd, for instance by critics such as Ned Block. A closer examination of the intuitions involved, considered from different theoretical angles (social constructivism, idealism, eliminativism, realism), reveals that the idea of 'Greek zombies' should be taken more seriously than is commonly assumed.*

It was so quiet that I heard
An ancient Greek zombie.

It was so quiet that I heard
My brain think in class. [1]

1. Introduction

Almost thirty years ago a study by the Princeton psychologist Julian Jaynes (1920-1997) was published with the singular title, *The origin of consciousness in the breakdown of the bicameral mind* (Jaynes 1976). Jaynes claimed that consciousness is a fairly recent addition to the human mind that arrived only late in the second millennium BC. According to Jaynes, the Greeks in the *Iliad* as well as numerous other cultures of that and earlier periods were actually unconscious.

The work drew the attention of the general public, but its reception in academia has been proportionately dismissive. In academic circles Jaynes is generally seen as a maverick. In philosophy he is rarely mentioned and almost never taken seriously. The only notable exception is Daniel Dennett who appreciates Jaynes as a fellow social constructivist with regard to consciousness. Most outspoken in his criticism is Ned Block, who rejects Jaynes' claim as patently absurd [2].

Though Jaynes' work is generally dismissed, it raises a very serious question. I shall call this the question of Greek zombies, even though it is neither specifically about zombies nor specifically about Greeks. 'Zombie' intends to refer to a substantially different sort of mind, of which I take a structurally unconscious mind to be an example, while 'Greek' brings out the fact that we

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are dealing with a fairly recent phenomenon in cultural history. The question of Greek zombies can be stated as follows:

(1) Is it conceivable that the human mind underwent a substantial change in recent history?

Let me explain some of the concepts involved in the question. 'Conceivable' should not be taken here in the sense of being merely logically possible. I shall take the idea of Greek zombies to be conceivable if it is both empirically and conceptually possible, in the sense of being consistent with our present knowledge of the actual world and its history.

Secondly, something undergoes 'substantial change' if its nature or essence has been changed. In the strictest sense this seems to be a privilege of Roman Catholics ('transsubstantiation' of wine into blood and of bread into body), but I do not intend to involve myself in theology here. What a thing's essence is may be a matter of deep metaphysical speculation. As a starting-point, however, I am happy to take a thing's essence to be just what our common conceptions say it is. Thus, I presume that consciousness is a constitutional aspect of the modern mind, in the sense that the notion of consciousness is an essential feature of our present common conception of the mind. Hence the switch from a constitutionally unconscious mind to a constitutionally conscious mind qualifies as a substantial change.

Finally, 'recent history' refers to historical rather than prehistoric times. In terms of thousands of years (ka), the period envisaged is the past 1-10 ka rather than the past 10-1000 ka, hence far removed from the outskirts of human phylogeny.

The name 'Greek zombies' I obviously borrow from Jaynes' suggestion that the Mycenean Greeks were unconscious, which is also the focus of this paper. That suggestion is only one particular instance of the broader question envisaged by (1). Hence, even if Jaynes should turn out to be wrong the question of Greek zombies would still be open. My strategy in this paper will be to argue that Greek zombies are a real possibility because Jaynes' idea is not *obviously* wrong. Greek zombies of the sort envisaged by Jaynes, I argue, are consistent with our present knowledge of the actual world and its history. I will not try to establish that the claims made by Jaynes are *historically* correct, which would require a more detailed evaluation of the empirical data gathered by Jaynes than I am able to give here. For present purposes it suffices that the data make sense.

In the following sections I shall first say something about the importance of the question of Greek zombies, especially in the context of recent developments in psychology (section 2). Next, I give a summary of Jaynes' argument (section 3) and that of his most outspoken critic, Ned Block (section 4). As will become clear, Block's main point against Jaynes is that it is patently absurd to believe that consciousness depends on culturally acquired concepts. In the remaining sections I discuss various aspects of this allegation (sections 5-9), which brings me to the conclusion that Greek zombies are a very real possibility (section 10).

2. Fringe minds

"I am thankful that I am not in the field of developmental psychology", Donald Davidson confessed in one of his last papers (1999, p. 11). Writing about the emergence of thought, Davidson noted that in the phylogeny of the human species as well as in the ontogeny of the individual, "there is a stage at which there is no thought followed after a lapse of time by a subsequent

stage at which there is thought." According to Davidson, "What we lack is a satisfactory vocabulary for describing the intermediate steps" (*loc. cit.*). Once there is thought and intentional action we can use our standard mentalistic vocabulary, and where we regard nature as mindless naturalistic vocabularies apply, but there is no vocabulary to describe the "half-formed minds" in between.

It is the conceptual embarrassment felt at the fringes of mind that made Davidson shrink from developmental psychology. This embarrassment is a serious problem not only for the study of the infant mind, but also for evolutionary psychology, cognitive archaeology and paleo-anthropology, as well as for disciplines such as animal psychology and cognitive ethology. The problem has become increasingly urgent in recent years due to a surge of interest in these disciplines. Particularly salient is the exposure of cognitive archaeology with groundbreaking work by authors such as Mithen (1996), Deacon (1997), and Donald (2001).

The growing importance of the problem of fringe minds was recently brought out in a book-length study by José Bermúdez (2003). Bermúdez observes that the psychology of nonlinguistic creatures (infants, early hominids, animals) involves a widespread practice of ascribing to such creatures beliefs and desires, mental representations, as well as thinking and reasoning. These ascriptions are frequently treated in a metaphorical or merely instrumental way (from an 'intentional stance', to use Dennett's term), due to the lack of clarity about the nature of the fringe minds under examination. Bermúdez urges an extension of the mentalistic model to meet the conceptual requirements of these fields, and launches a conceptual framework that should allow nonlinguistic creatures within certain limits to be treated as "genuine thinkers".

The question of Greek zombies is closely related to the problem of fringe minds. In point of fact Greek zombies just *are* fringe minds, but alarmingly close to home. As long as we contemplate fringe minds that are conveniently distant from our own minds and correspondingly close to "mindless nature" (prenatal or very young infants, hominids well before 1000 ka, animals), the problem noted by Davidson may be deferred as not particularly urgent. It becomes much more urgent, however, when we turn to the fringe minds closer to home, for instance when considering prehistoric minds in the order of 100-10 ka ago. An illustration of this point is the controversy stirred by Nicholas Humphrey's paper on cave art (Humphrey 1998). Is the emergence of cave art in Europe about 30 ka ago proof that the humans of the Upper Palaeolithic were among the first to have "essentially modern minds", as the received view has it, or should we follow Humphrey's diagnosis that the evidence actually suggests the very opposite conclusion, namely, that the cave artists were among the last to have "distinctly pre-modern minds"? Greek zombies call attention to an even more baffling possibility—that of minds substantially different from ours, yet belonging to human beings *very* much like us. So much like ourselves, in fact, that we find it almost impossible to believe that our ordinary mentalistic vocabulary of beliefs and desires should *not* apply to them as literally as it applies to us.

My strategy in this paper is the exact opposite of Bermúdez. While Bermúdez lets the familiar model of the mind *reach out* to the fringes, I want to find out how far the fringe mind *reaches in*. An obvious advantage of my approach is that it is not in danger of inadvertently projecting onto fringe minds any biases of the mentalistic model. If there is such a thing as a specifically modern mind, we should beware of imputing its traits to babies and Neanderthals [3].

3. Jaynes on consciousness

What were Jaynes' reasons for making his extraordinary claim about Greek zombies? The bone of his argument consists of the historical evidence from Biblical and Homeric times, notably including inscriptions and other written sources from Egypt, Mesopotamia, and Greece, dating roughly between 3000 and 1000 BC [4]. Jaynes argued that the reports of mental life overtly present or implied in this evidence make much more sense when taken as reports of minds that were *not* conscious in anything like the modern sense of the word, but instead were of a 'bicameral' nature, as Jaynes called it. In rough outline, the difference between the bicameral mind and the conscious mind is that the actions of bicameral persons are motivated by auditory and sometimes visual hallucinations such as hearing voices, seeing gods appear, obeying the voice of the god, and other divine apparitions and commands, whereas conscious persons experience a private, inner, mental space where individual deliberation takes place and where individual action is planned and motivated. In the bicameral mind an alien voice tells you what to do, in the conscious mind you plan and execute your actions yourself.

According to Jaynes, the two main features of the modern conscious mind are "mind-space" and the "analog I". Mind-space is the space in which mental contents are stored for introspection, while the analog I is the 'I' that does the introspecting. Both features are claimed to be absent in the bicameral mind, which quite literally has no room for introspection or deliberation, nor even for contents to be explicitly represented and grasped by an individual self. The bicameral mind is instead composed of voices from nowhere telling you what to do, or is better described as a 'blindness' (Greek *atè*, also meaning 'Fate') that comes upon people to guide their actions. In one of Jaynes' numerous examples (*Iliad,* IX, 702f), we are told that Achilles will fight "when the *thumos* in his chest tells him to and a god rouses him." Similarly, Agamemnon, who robbed Achilles of his prize mistress, tells us, "Not I was the cause of this act, but Zeus and *moira* ..." (*Iliad*, XIX, 86-87). Taking these and many similar passages as literal as possible, Jaynes argued that the ancient Greeks acted not for reasons represented and understood, but on blindly obeyed command.

Notice that when Jaynes denied that the ancient Greeks were conscious, he was not denying them everything that is commonly associated with consciousness. In the first chapter of his book, he tried to expel a number of alleged misunderstandings about the nature of consciousness. According to Jaynes, "consciousness is not what we generally think it is":

> "It is not to be confused with reactivity. It is not involved in hosts of perceptual phenomena. It is not involved in the performance of skills and often hinders their execution. It need not be involved in speaking, writing, listening, or reading. It does not copy down experience, as most people think. Consciousness is not at all involved in signal learning, and need not be involved in the learning of skills or solutions, which can go on without any consciousness whatsoever. It is not necessary for making judgments or in simple thinking. It is not the seat of reason, and indeed some of the most difficult instances of creative reasoning go on without any attending consciousness. And it has no location except an imaginary one!" (Jaynes, 1976, pp. 46-47)

Jaynes' notion of consciousness clearly swerves from "what we generally think it is." Some of the suggestions made by Jaynes in this connection strike me as very insightful, about others I

am skeptical. For the present argument it will not be necessary to take in these details, except for some points to be duly explained.

Jaynes' primary claim is that the minds of fairly recent cultures were substantially different from ours to the extent that they lacked consciousness. Jaynes also launched a number of secondary hypotheses as additional support for his primary claim. First, he discussed possible causes of the literal change of mind in ancient times. Secondly, he proposed a neurological basis for the differences between bicameral and conscious minds. Finally, in the last part of his book Jaynes dealt with vestiges of the bicameral mind in modern culture, discussing phenomena such as religious frenzy, hypnosis, and schizophrenia.

I will not be concerned here with either of these secondary hypotheses, nor even with any of the details of the primary hypothesis. What concerns me here is the conceptual thread of the arguments involved, both in Jaynes' defense of his primary hypothesis and in the response from his critics, to whom I now turn.

4. Block on Jaynes

In a review of Jaynes' book, Ned Block (1981) objected that its reasoning rests on a large-scale confusion of use and mention of 'consciousness'. Even if everything Jaynes says about the historical events were correct, so Block argued, all he would have shown was that the concept of consciousness arrived around late in the second millennium BC, not that consciousness itself arrived then. According to Block, it is perfectly obvious that people were conscious long before they had the concept of consciousness, just like there was gravity long before Newton hit upon the concept of gravity.

In later work Block (1994, 1995) repeated his criticism in terms of a distinction between different kinds of consciousness serving different cognitive functions, which he claimed were conflated by social constructivists such as Dennett (1986, 1991) and Jaynes. The two most prominent kinds of consciousness to be distinguished are P-consciousness and A-consciousness. P-consciousness is phenomenal awareness, such that for any P-conscious creature there is something it is like to be that creature. A-consciousness is characterized in terms of access to mental representations: "A state is access-conscious if, in virtue of one's having the state, a representation of its content is (a) inferentially promiscuous, i.e. freely available as a premise in reasoning, and (b) poised for rational control of action and (c) poised for rational control of speech" (Block, 1994, p. 214). Now, with these distinctions in place Block can say the following about the social constructivist's view of consciousness:

> "*I hope it is obvious* that P-consciousness is not a cultural construction. (...) The idea would be that there was a time at which people genetically like us ate, drank, and had sex, but there was nothing it was like for them to do these things. Further, each of us would have been like that if not for specific concepts we acquired from our culture in growing up. *Ridiculous*!" (...)
>
> "What about A-consciousness? Could there have been a time when humans who are biologically the same as us never had the contents of their perceptions and thoughts poised for free use in reasoning or in rational control of action? Is this ability one that culture imparts to us as children? Could it be that until we acquired the concept of 'poised for free use in reasoning or in rational control of action', none of our perceptual contents were A-con-

scious? Again, *there is no reason to take such an idea seriously*. Very much lower animals are A-conscious, presumably without any such concept" (Block, 1995, p. 238, my italics).

What is most remarkable about Block's argument against the possibility of non-conscious human minds is its absence—the paucity of argument and the proportionate appeal to the reader's intuitions (highlighted by the italicized parts of the quotation). The same goes for the following passage from Block against Jaynes and Dennett. These writers, Block says,

"allege that consciousness is a cultural construction — Jaynes even gives its invention a date: between the events reported in the Oddysey [*sic*] and the Iliad. They seem to be talking about phenomenal consciousness, but if one accepts a notion of phenomenal consciousness as distinct from the cognitive and functional notions I have described, the idea that consciousness was invented by the Greeks is *ludicrous*. If there is such a thing as phenomenal consciousness as distinct from the cognitive and functional notions I have described, *surely* it is a basic biological feature of us. The same is true for access-consciousness (...). *Obviously*, our ability to access information from our senses is genetically programmed. (...) The conflation is *especially silly* in Jaynes, where it is *obvious* that 'consciousness' in the sense in which it is supposed to have been invented by the Greeks is something like a theory of consciousness in roughly the phenomenal sense" (Block, 1994, p. 217, my italics).

It is evident that Block takes Greek zombies to be utterly absurd. It is equally evident, I think, that he has no real arguments for this claim, but only two sets of statements about P-consciousness and A-consciousness: they are not contingent on culturally acquired concepts (first quotation), and they are basic biological features (second quotation). These statements are motivated by intuitions: the first is *perfectly obvious* and to deny the second is *perfectly ludicrous*. In addition Block seems to make a tacit assumption (which presumably is also seen as obvious) that basic biological features cannot be contingent on culturally acquired concepts [5].

For all the conceptual footwork involved in the distinction between kinds of consciousness, Block fails to make clear why Greek zombies should be ruled out as absurd. Neither conceptually nor empirically has this absurdity been established. The closest Block comes to offering an argument is when he observes in the first quotation that "very much lower animals are A-conscious, presumably without any such concept". I think this is mere handwaving, however [6].

I grant everyone the right to share Block's intuitions, especially as they also happen to be mine. But I have learned to be wary of them. Uncritical rehearsal of intuitions is the shortest route to parochialism, as history has amply demonstrated. If we find it intuitively difficult to accept Greek zombies, this may just reflect our collective determination to reckon the Greeks among our peers rather than expose a salient feature of ontology.

In the following sections I take a closer look at the intuitions regarding Greek zombies. As appears from Block's discussion of the matter, the bone of contention is the question whether consciousness is a cultural construction (as Jaynes and Dennett believe it is) or a natural kind (as suggested by Block). My plan is as follows. First I consider the claim that consciousness is a cultural construction and examine whether this claim leads to patent absurdity (sections 5-7). Next I consider the possibility that consciousness is a natural kind and examine whether this makes it "perfectly clear" that consciousness must be independent of its concept (sections 8-9).

I shall argue that neither route leads to the perfect clarity claimed by Block. Instead, each of the paths leads the way to taking Greek zombies much more seriously than was hitherto assumed.

5. Consciousness as a social construction

Suppose first that consciousness is a social construction, as claimed by Jaynes and Dennett and contested by Block [6]. All parties seem to agree that consciousness on this supposition must have a history that starts with the concept of consciousness, inasmuch as the empirical evidence for the reality of a social phenomenon is necessarily also evidence for the possession of the concept, although the reverse need not hold. You can have the concept of baseball without having the practice of baseball, but the reverse is impossible [8]. If this applies to consciousness, then consciousness cannot predate the concept of consciousness (cf. Dennett, 1986).

Assuming that consciousness conceived as a social construction cannot predate the concept, it still remains to be seen whether Jaynes' evidence is strong enough to support the claim that the ancient Greeks actually lacked the concept. Although this point is not contested by Block, we should consider the question carefully. Empirical support is of necessity highly indirect here. Evidence for the claim that a person or a community in the past had a certain concept (or a set of concepts, beliefs, etc.) is always contingent on the behavioral repertoire of the person or community in question; evidence for the repertoire is in its turn contingent on the actual behavior displayed in the past; finally, evidence for the actual behavior is contingent on the marks left behind, notably including inscriptions and other written material. The inference from found marks to implicated concepts seems sound enough, even though it involves a relatively fragile chain of inferences to the best explanation. The inference from *absent* marks to *absent* concepts is much more dubious, however. Supposing that the best way to make sense of a mark ***M*** is to presume a behavior ***B*** from a repertoire ***R*** involving a concept ***C***, then the *absence* of ***M*** is still perfectly compatible with the *presence* of either (***B***, ***R***, ***C***), (***R***, ***C***), or even (***C***) alone. Maybe ***M*** was accidentally lost, maybe it will be found later, maybe ***B*** failed to produce ***M***, maybe ***R*** failed to produce ***B***, maybe ***C*** was mistaken by us to be involved in ***R*** while it was actually involved in some other ***R****. The chances that all of these possibilities can be ruled out are very slim.

To support the claim that it was specifically ***C*** that was absent, we need to look for other arguments, which can indeed be found in Jaynes. The substance of his argument may be interpreted as taking the form of an inference from found ***M*** to absent ***C***, or more precisely, an inference from ***M*** to a certain ***C**** different from ***C***, with an additional argument to the effect that ***C**** precludes ***C***. ***C**** is the concept of what Jaynes called the 'bicameral mind': the mind that is not an 'inner space' in which contents are presented to the 'I', but a mind featuring alien voices guiding people's actions. Jaynes' argument may now be put as follows: the best way to make sense of ancient reports of mental life is to assume that earlier cultures had a totally different conception of the mind that does not involve any of the features we now associate with consciousness.

Is this line of argument strong enough to support the conclusion that earlier cultures as envisaged by Jaynes had no concept of consciousness? Of course, much depends on how the details of the argument are filled in. A sufficient number of convincing examples of 'bicameral' descriptions of mind must be found, possible counterexamples must be located and adequately answered, and so on. Assuming that this works out in a satisfactory way, I think the answer to

our question must be affirmative. Although there is still a *logical* possibility that earlier cultures may have had the concept of consciousness while failing to make use of it in their descriptions of mental life, the odds are heavily against it.

6. Concepts reconsidered

The working hypothesis in the previous section was that consciousness is a cultural construction. On this assumption we found that it makes sense to claim that consciousness did not precede the concept of consciousness, and that the concept arrived late in the second millennium BC. This claim is consistent with the way we reason about the interpretation of evidence for cultural phenomena in the past, and both are consistent with the (tentatively accepted) empirical evidence gathered by Jaynes.

Yet, there is a twist here. One may wonder whether the rendering in the previous section does justice to Jaynes' argument. There is something awkward about the notion of concept in the argument. Although it makes sense to say that earlier minds lacked the concept of consciousness, it is much less clear whether it makes sense to say that they had an alternative bicameral conception of the mind. In point of fact it is unclear whether it makes sense to say that they had any conception of mind at all, or even, on a sufficiently strict construal of concepts, that they had any concepts at all. On most accounts, a conception of mind, in the sense of a more or less articulate theory of mind, requires an elaborate system of distinct and interrelated concepts figuring in a more or less articulate system of logically related propositional contents. This strikes me as precisely the sort of content, however, that in Jaynes' view requires a mind-space to be explicitly represented in for use by the analog I, or in Block's terms an A-consciousness of contents poised for free use in reasoning and for rational control of action and speech. Hence, if the reports of mental life given by earlier cultures are based on an alternative conception of mind, or an alternative theory of mind, that would imply that the authors of these reports must have been conscious—whether they had the concept of consciousness or not. If this is correct a dilemma ensues:

(2) Either cultures were conscious without having the concept of consciousness, or they were not conscious and could not possibly have had any theories at all.

Moreover, at least on some highly influential accounts involving inferential role semantics, similar considerations apply to concepts generally (cf. Fodor & Lepore, 1992; Fodor, 1998). It may be argued that 'inferential promiscuity' in a sufficiently large network of concepts is a necessary feature of any concept. The idea is that the set of a concept's identity conditions, spelled out in terms of entailment and other logical relations, must be sufficiently rich before it makes sense to speak of a concept at all. Hence, concepts on this analysis require a sufficiently large, logically articulate system of clear and distinct concepts, or more precisely a system of inferential relations between belief contents of which the concepts are constituents. In philosophy of cognitive science, this requirement is often put in terms of a combinatorial semantics: mental contents must be compositionally structured according to an articulate system of combinatory rules and basic constituents, in terms of which their logico-semantic properties are fixed.

The sort of account of concepts just outlined is closely related to Block's notion of an 'A-conscious mental state', which critically involves logically articulate mental contents poised for

use in reasoning. Following Block's analysis, I think it is safe to say that there can be no A-consciousness without concepts (strictly construed). More importantly, I think the reverse implication also holds: no concepts without A-consciousness. I fail to see how the strict construal of concepts could make sense without something like a 'virtual working space' in which these concepts can be put to work, so to speak—a virtual space with the functional properties attributed by Block to A-consciousness, and strongly reminiscent of mind-space à la Jaynes. Now, if this line of reasoning with regard to concepts is taken, dilemma (2) can be rephrased as follows:

(3) Either cultures were conscious without having the concept of consciousness, or they were not conscious and could not possibly have had any concepts at all.

Let me retrace the steps taken here. If consciousness is a cultural construction, then on the received view it must be based on a concept. To prove the absence of consciousness in earlier cultures, we therefore had to establish that the concept was absent. To make a case for the absence of the concept, we argued for the presence of a different concept that precludes the concept of consciousness. Yet, that different concept seems to imply that earlier cultures were conscious after all, which contradicts what we set out to establish. Moreover, on a sufficiently strict reading of concepts we must conclude that earlier cultures must have been conscious, lest they could not have had any concepts at all.

Summarizing the argument in general terms, if anything qualifying as a cultural construction is necessarily based on a corresponding concept, and if such concepts necessarily involve consciousness, then consciousness cannot be a cultural construction. Similarly, if anything qualifying as a culture is necessarily based on concepts, and if such concepts necessarily involve consciousness, then no culture can be unconscious.

On the face of it, we have reached a *reductio ad absurdum* of the claim that consciousness is a cultural construction. Although the argument as such was not given by Block, I think he would probably endorse it for its outcome. And who would want to deny that earlier cultures had theories or conceptions of the world, or indeed that they had concepts? The very same empirical material on which Jaynes based his claims (written records, inscriptions etc.) seems evidence to the contrary. Surely all use of language involves concepts? Surely the descriptions of historical events as reported in the *Iliad* and other sources are based on a conception of world, of man, of gods, and of how they interact? To suppose otherwise goes against the grain of common sense.

7. A-minds and B-minds?

Before embracing the *reductio*, however, we should consider the alternatives more carefully. As far as I can see, there are three main alternatives for the conclusion that consciousness is not a cultural construction.

(4) First alternative: reject the claim that social constructions are necessarily based on a concept.
(5) Second alternative: reject the claim that concepts necessarily involve consciousness.
(6) Third alternative: accept that earlier cultures had neither consciousness nor concepts.

On the face of it, (6) entails (4), while being consistent with the rejection of (5). Moreover, (5) is consistent with the rejection of both (4) and (6). Finally, (4) is consistent with the rejection of both (5) and (6).

Are the options acceptable? It does not seem *obviously* absurd to embrace (4), provided one is prepared to give an alternative account of social constructions. If concepts are no longer available as founding factors, then other constructive elements need to be found to take their place. Option (6) is intuitively the most implausible alternative of the three, as pointed out above.

Jaynes' way out of the predicament was to opt for (5): he endorsed a different notion of concept such that consciousness is not necessary for having concepts (Jaynes, 1976, pp. 30f). This apparently also entails that one can have a 'theory' or conception of the world that is not articulated in deliberate, conscious reflection. In Block's terms, such concepts are clearly anything but "poised for free use" by the individual. Correspondingly, a bicameral person's behavior, including his speech behavior and other use of language, may witness his possession of particular concepts and conceptions, yet these are not items for the use of which he could meaningfully be held personally or rationally responsible. A bicameral person quite literally would not *know* what he is doing or saying, nor why he is doing or saying it, in the sense that his mind is constitutionally unable to explain, elaborate, question, doubt, or otherwise conduct articulate reasonings about its contents [9].

The alternative notion of concept suggested by Jaynes puts the discussion in a new perspective, even if this notion was not worked out by Jaynes in sufficient detail. First, by embracing (5) Jaynes averted the looming *reductio*. Moreover, the notion of nonconscious concepts gives a new edge to options (4) and (6), which further strengthens the case against the *reductio*. Let me explain this by introducing a distinction between two different kinds of concepts which I shall call B-concepts ('B' for 'bicameral') and A-concepts ('A' for 'access', as in 'A-consciousness'). Although Jaynes did not explicitly draw any such distinction, I believe that it tallies with many of his points of contrast between the modern, conscious mind and the ancient, bicameral mind.

A-concepts are concepts in the relatively narrow sense indicated earlier. Their identity conditions are substantially determined by their place in an articulate and sufficiently large network of concepts, or more precisely, by their role in the system of inferential relations between mental contents (propositions) of which they are constituents. A-concepts presuppose A-consciousness, for the mental contents of which they are constituents are "poised for free use in reasoning". In point of fact, it is this possible use in reasoning that determines the identity conditions for A-concepts.

By contrast, the identity conditions for B-concepts are not in any way mentally articulated. Minds with B-concepts have no 'access' to anything like 'inferential relations' between B-concepts, for there is no such access and there are no such relations. Of course it is quite possible for us ('A-minds') to interpret the B-concepts of ancient minds ('B-minds') in terms of our own A-concepts, which is bound to happen whenever we interpret ancient texts. For instance, when we read an ancient report in which the expression for 'cow' occurs, we interpret this expression in terms of our familiar A-concept 'cow', laden with inferential relations to other concepts such as 'animal', 'non-human', and 'milk'. Actually, however, the expression should be taken to stand for a B-concept with no articulate inferential potentiality whatsoever. Following Jaynes, the identity conditions for the B-concept 'cow' should presumably be spelled out purely in

terms of its "class of behaviorally equivalent things" (see note 9), which I take to consist of cows and all other entities (pictures of cows, stone figures, whatever) that elicit the same stock neural responses.

With this distinction between two kinds of concepts, (4) may be read as specifically denying that A-concepts are necessary for social constructions, while allowing for the possibility that B-concepts may take their place. Similarly, (6) may be read as denying that ancient cultures had consciousness and A-concepts, while allowing for the possibility that they had non-conscious B-concepts.

The distinction between A-concepts and B-concepts deserves to be explored more fully, I think, but that is beyond the scope of the present paper. My point here is only to show that the claim that consciousness is a social construction is by no means obviously absurd, *pace* Block.

Let me sum up the results of the foregoing discussion. First, the distinction between A-concepts and B-concepts (or some functionally equivalent distinction) saves the claim that consciousness is a social construction from inconsistency. Secondly, the distinction seems to be able to make Greek zombies cohere with the overall conceptual structure of behavioral sciences, as well as with the empirical data on the minds of earlier cultures. Moreover, the idea of B-concepts ruled by identity conditions of a different order as compared to our familiar A-concepts, is arguably a welcome instrument when dealing with more remote fringe minds such as prelinguistic infants, early hominids, and animals [10].

Finally, notice that my discussion leaves open the possibility that Greek zombies of the sort envisaged by Jaynes were actually P-conscious A-zombies with B-minds, that is to say: minds fed on B-concepts without A-consciousness, who may nonetheless have been P-conscious in Block's sense of the word. I am not particularly worried by this possiblity, however, for two reasons. First, recall that my aim here is to establish the possibility of substantially different minds in recent history. In my book, P-conscious A-zombies with B-minds *are* substantially different sorts of minds. Secondly, I am quite skeptical about attributing P-consciousness to beings that are *constitutionally* incapable of rational access to their alleged contents of consciousness. This strikes me as a merely gratuitous projection of our own self-image, for how could it ever be established that their alleged P-consciousness is more than a simple physiological reaction [11]?

8. Consciousness as a natural kind

What if consciousness is not a social construction but a natural kind, in the sense that it is a salient aspect of nature, presumably "a basic biological feature" as Block put it? Does this make it "perfectly obvious" that consciousness predated the concept of consciousness? If it does not, then this must be because it makes sense to think that some natural kinds may somehow be constituted by their corresponding concepts.

As a matter of fact, there is a well-known line of thought that allows for precisely this possibility, namely, idealism. The idealist holds our view of the world to be constituted by something like a conceptual scheme. Examples of this type of position include Kant's transcendental idealism, Kuhn's theory of paradigms, and Putnam's metaphysics of internal realism [12]. On the idealist view, we should distinguish the world as it is in itself (the noumenal world) from the world as it appears to us in experience (the phenomenal world). It is the phenomenal world, constituted in part by our concepts, that contains such phenomena as consciousness and gravity.

Abstracting from that conceptual contribution, it makes no sense to speak of these phenomena. Hence, should there have been a time when the concept of consciousness (or gravity) was absent, or at least was not a constitutive part of the phenomenal world of our ancestors, it would not make sense to say that *at that time* and *for those beings* there was consciousness (or gravity). To insist nonetheless that there was consciousness (or gravity) at that time makes sense only with reference to our own present-day conceptual scheme that makes it impossible for us to see the world in any other way. We are then effectively projecting our own view of ourselves and of the world onto our ancestors: *we* experience ourselves as beings with consciousness, hence we assume that *they* experience themselves in the same way.

Although idealism makes the reality of natural kinds dependent on their corresponding concepts (or similarly constitutional features of experience), it does not necessarily follow that there could have been a phenomenal world without consciousness, as seems to be implied in Jaynes' work. It may be argued that consciousness is a necessary trait of all possible conceptual schemes, hence also a transcendental feature of any conceivable phenomenal world. No worldview without conceptual scheme, no conceptual scheme without consciousness. This is the line taken by Kant in his exposition of the transcendental unity of the apperception, expressed in the formula that for each mental content ***C*** it must be possible to add, 'I think ***C***' (Kant, 1781/1787, B131ff). In other words, thinking according to Kant transcendentally requires an individual consciousness to claim the thought as its own. This is quite obviously the exact opposite of what Jaynes claims about ancient minds [13]. Notice that Kant's view of consciousness as a transcendental feature of any mind capable of wielding mental representations is very close to the picture of A-consciousness using A-concepts as described in the previous section.

Even if Kant is right in his analysis of consciousness, this does not necessarily invalidate Jaynes' claims about the mental life of earlier cultures. It is far from inconceivable that earlier minds were not minds in the Kantian sense. As is well-known, Kant tied his account of the transcendental ego very closely to the historical conditions of Western science. Kant himself was fully aware of the fact that his view of the mind was specifically calibrated to meet the requirements of a number of scientific disciplines (specifically Aristotelian logic, Euclidean geometry, Arabian arithmetic, and Newtonian physics). Now, the Mycenean Greeks and other putatively bicameral people were quite obviously strangers to that intellectual enterprise. That their minds may have been profoundly different from the minds shaped by Kant's needs is a very real possibility indeed.

That bicameral people were strangers to Kant's concerns is also strongly suggested by the descriptions related by Jaynes. In sharp contrast to modern descriptions of the mind (as exemplified by Descartes, Hume, and Kant), early accounts of inner life lacked all sense of 'content management', having neither room nor apparent need for anything like experiential unity, mental contents to claim as one's own, principles for the organization of experience, or a basis for construing experiential reality objectively. In view of this contrast, what Kant described as belonging to the rational mind may in fact better be seen as describing the mind of what the Enlightenment wanted man to be. Kant's view of consciousness as a transcendental prerequisite to experience may in fact have been determined by his own specifically modern frame of mind.

9. Realism and consciousness

Idealism is not the only line to explore here. What can a realist make of the idea that natural kinds may be concept-dependent, and that consciousness may be such a natural kind? Realism is quite obviously the position endorsed by Block in his criticism of Jaynes. The drift of Block's argument seems to be that once we have conceptually identified such things as consciousness and gravity, it is perfectly clear that they must have been there all along waiting to be discovered, even though earlier thinkers failed to take notice of them. Now, if this is actually Block's point, then as stated it is certainly too strong, even for a realist. Considering that human knowledge is fallible, any realist must face the possibility that our current theories represent the world in the wrong way. This may be the case with gravity: Newton's idea of a force acting at a distance now seems to be a merely metaphorical representation of the underlying space-time curvatures. Similarly, although we use the concept of consciousness to describe our psychological reality, and in spite of the fact that our best psychological theories are based on the assumption that consciousness is a real and *bona fide* phenomenon, we may be mistaken in this respect, as was pointed out by Paul Churchland (1979, 1989) in his defense of eliminative materialism. As a die-hard scientific realist, Churchland argued that folk psychology has given us a radically false picture of the mind. The mind as an inner space where mental sentences are processed may serve as a useful fiction in daily life, but its entire ontology is likely to be mistaken. Churchland advised us instead to turn to neuroscience for a more adequate understanding of the causes of human behavior.

Applying this grim view to consciousness, we find that it may be a *fake* natural kind instead of a real one. That would make consciousness a social construct again: our routine descriptions of mental life in terms of consciousness would turn out to be a socially acquired (and misleading) way of describing ourselves as human beings.

To accommodate this possibility, Block's point about consciousness may be rephrased along the following lines:

(7) Unless we are completely mistaken about its nature, consciousness as a natural kind predated its concept.

The force of (7) derives from the fact that it is hard to believe that we might be *completely mistaken* about the nature of consciousness. Of all things, nothing seems to be more intimately known than one's own consciousness, this "introcosm that is more myself than anything I can find in a mirror," as Jaynes put it (1976, p. 1). A well-known claim in epistemology is that the contents of one's own consciousness are 'incorrigibly given'. Now, let us assume for the sake of argument that this incorrigibility may be extended to include not only the *contents* but also the *nature* of consciousness itself, such that this nature is manifest to us in a way that we cannot possibly be mistaken about it. Even on this assumption, however, our incorrigibly intuitive knowledge of consciousness is necessarily restricted to present consciousness without revealing anything about the earlier history of the mind. Hence, the question of the history of consciousness cannot be answered by simply pointing to one's present intuitive certainty about its nature.

The importance of the historical dimension can be made explicit by putting the basic idea behind (7) in slightly cruder terms:

(8) If consciousness is real *now*, then it has *always* been real, while if it is not, then it never was.

As it is extremely hard to deny the reality of one's own present consciousness, P-consciousness as well as A-consciousness, one is much more prepared to affirm the antecedent of the first conditional in (8) than that of the second. Yet, both conditionals in (8) are almost certainly false, or dubious at best. I think it is reasonable to presume that consciousness has *not* always been real—surely there was a time in the past when there simply were no conscious creatures, even if there are now. Moreover, even if consciousness is not real *now*, this leaves open the question whether there happened to be conscious creatures at some time in the past (or will be in the future). To be sure, I am not saying that Block would endorse (8), nor that he would disagree with my explanation of why (8) is false. My point is only that Block failed to be sufficiently careful about the intuitions involved in considering the possibility of Greek zombies. The familiar intuitions about the *present* reality and nature of consciousness are really beside the point here.

In addition to the intuitions about consciousness, there are also intuitions about what makes something a natural kind, or more particularly "a basic biological feature". Consider once more the analogy between consciousness and gravity referred to earlier. Gravity as a natural kind (assuming we are not mistaken about its nature) has *always* been real, except maybe for a short time in the very early history of the universe, and it has been real *independent* of the conceptual apparatus of human inquiry. Biological natural kinds, by contrast, have *not* always been real, for they are subject to evolutionary processes, but like gravity, we naturally assume that their reality is *independent* of human concepts. For a large majority of biological phenomena this makes perfect sense. Obvious examples are sharks, lungs, meiosis, vertebrates, and photosynthesis (assuming that species as well as classes and processes may qualify as natural kinds). However, there are also many biological phenomena that should equally pass as natural kinds, yet for which the independence from human affairs is much less clear. Diseases such as aids, the plague, influenzas, and SARS are prime examples. Although the organisms (the bacteria and viruses) causally responsible for the disorders may in one sense be independent of human concepts, yet their recent evolutionary career has been contingent upon a vast complex of cultural factors, from sanitary conditions to international air traffic, and from dietary conditions to medical technology. What is more, the very nature (genetic identity) of the pathogenic organisms heavily depends on these cultural factors, which collaborate with the organisms' rapid growth and high mutation rates to mould the pathogens' genomes. In sum, both the disease and the organisms causing it presumably are "basic biological features" in Block's sense of the word, yet they are borne and shaped by culture, hence by concepts.

Can it be ruled out that consciousness is like a disease? Suffice it to note here that there is no *obvious* way to block this possibility in a non-*ad hoc* fashion, at least not as far as I can see. What is more, I think there is reason to believe that mental capacities in general are ontogenetically like diseases, consciousness included. The rapid growth and the high mutation rates of pathogen populations structurally resemble the extreme complexity and plasticity of neural structure, which shows itself both in the rapid growth of nervous tissue, in the sheer number of nerve cells and synaptic connections, in the ability of nerve cells to grow new synaptic connections, and in their ability to rapidly readjust existing connections. The ability of pathogen populations to rapidly adjust to culture-bound conditions and to settle in a new "ontogenetic niche" (Tomasello, 1999), may compare to the ability of neural structure to adjust to culture-bound conditions. To continue the analogy, just like the pathogens' genetic identity is contingent on

cultural conditions, so the mind's neural identity is, hence presumably *a fortiori* its very structure and capacities.

As a final objection, it may be pointed out that to allow cultural variation to influence substantial aspects of the mind, in the way envisaged by Greek zombies and exemplified by Jaynes, is at odds with a basic principle of metaphysics, namely, that we should make do with as few substantial natures as possible. The endorsement of this "Platonic impulse" in psychology (Shweder, 1990) takes the form of a principle of psychological unity for all creatures belonging to a certain class, for instance all human beings. All creatures of the class are presumed to have substantially the same mind, that is, the same type of mental organization and capacities. Any large-scale differences in performance, for instance in historical or cultural perspective, should be construed as differences in accidental attributes, not in mental substance. Applying this principle to the alleged Greek zombies, so the objection goes, one can only conclude that they *must* have had substantially the same mind as we do, and that we have mistaken accidental changes for substantial changes.

The Platonic impulse is certainly a sound principle of methodology that can boost support from the principle of parsimony among others, but in the present context it is useless. This is so for two reasons. In the first place, how the principle is to be applied depends entirely on how the reference class is identified. Is the relevant class that of mammals, or primates, or hominids, or *homo sapiens*, or human beings, or human adults, or normal human adults, or maybe even something like normal, adult, literate, modern, Western human beings? Where is the boundary between peers and non-peers to be drawn [14]? The choice of reference class is obviously precisely what is at issue in discussing Greek zombies, hence it cannot serve as an independent argument.

Secondly, to insist on a substantial unity of mind where significant differences in performance are found may lead to a merely verbal dispute, for we simply do not know what the mind 'substantially' is. Taking consciousness as a substantial trait of the mind, are we obliged to say that a constitutionally unconscious creature has *no* mind, or that it has a substantially *different* mind? There is no clear-cut answer to this question. We may have a fairly clear conception of how *our* minds are supposed to work, yet we have no clear way of sifting accident from substance when projecting that conception into the past. Maybe the bicameral mind and the conscious mind (assuming that there are such things) should properly be seen as substantially the same type of mind, which would mean that consciousness is not an essential trait of mind. Maybe 'A-minds' and 'B-minds' (assuming that there are such things) are really instantiations of the same underlying mental substance, as yet unknown to us, which would mean that the processing of A-concepts is not an essential feature of mind. I am not sure whether it would take a discovery or a convention to decide these issues, but the effect of either would be the same, namely, to trade in a vast substantial difference for a *no less vast* accidental one plus a novel conception of mental substance. Until such a novel conception is in place, I am happy to take both consciousness and something like 'A-concepts' as substantial features, in the sense that they are entailed by our present established conception of the mind. Any mind that lacks them is a substantially different mind.

10. Conclusion

Greek zombies are supposed to have minds substantially different from ours while being very much like ourselves—so much like ourselves, in fact, that we find it difficult to believe that their minds could be substantially different. Are Greek zombies really possible? Our intuitions weigh heavily against that possibility. Upon closer examination, however, the intuitive absurdity of Greek zombies appears to be quite fragile. The discussion of Jaynes' example of bicameral Greeks, considered from different theoretical angles (social constructivism, idealism, eliminativism, realism), revealed that Greek zombies should be taken much more seriously than is commonly assumed, and this for three reasons. First, because the intuitions commonly appealed to in dismissing them do not stand up to scrutiny. Secondly, because the faults detected in the intuitions point the way toward a promising reconsideration of such notions as 'consciousness' and 'concept'. Finally, because a reconsideration of this sort is an important step toward a more unbiased view of fringe minds generally. In sum, Greek zombies are a possibility to be reckoned with. It may be hard to believe, but so are many facts.

Notes

[1] From: 'If You Had Super Ears', by John, pupil of Y3/4 at St. Bartholomew's Catholic Primary School (Rainhill, Merseyside UK). Posted on the Internet as part of the school's poetry project; see http://www.st-bartholomews.st-helens.sch.uk.

[2] See Dennett (1986, 1991); Block (1981, 1994, 1995). For an overview of Jaynes' work and its reception, see the website of the Julian Jaynes Society at http://www.julianjaynes.org. An exception to the unfavorable reception in philosophy, besides Dennett, is David Johnson, whose work explicitly aligns with Jaynes'; see e.g. Johnson (2003). Jaynes' established repute is now such that the merest association with his views causes suspicion. For instance, when Sarnecki and Sponheimer mention Jaynes in their review of Mithen (1996), the reader senses palpable implication. "It would be unfair, we think, to compare Mithen's work with Julian Jaynes' *Origins of consciousness* [*sic*]", so the authors submit in a footnote, and they continue, "but it is worth noting that ...", which does little to improve Mithen's case (Sarnecki and Sponheimer, 2002, p. 184 n. 2).

[3] Notice that Bermúdez' proposal and mine are not necessarily in conflict. By extending the standard model of mind to cover fringe minds, Bermúdez also changes the overall framework in terms of which mind is conceived. In particular, in order to be able to describe the thought processes of non-linguistic creatures, Bermúdez needs to avail himself of a notion of 'mental content' or 'concept' for such creatures, the identity conditions for which appear to be substantially less stringent than those for concepts as ordinarily understood. My converse approach will involve a similar reconsideration of the notion of mental content, as explained in section 7.

[4] Jaynes also discussed archaeological evidence for similar developments in America (Olmec and Maya cultures in Mexico, Incas and other Andean civilizations) and China.

[5] In my view, Block seriously misrepresents Jaynes when he says that "it is obvious that 'consciousness' in the sense in which it is supposed to have been invented by the Greeks is something like a theory of consciousness in roughly the phenomenal sense" (Block 1994, p. 217). Although the matter is difficult to judge because of Jaynes' idiosyncratic view of ('generic') consciousness, I think it is much more apt to say that Jaynes was interested in the emergence of something like A-consciousness in roughly Block's sense of the word. Accordingly, my concern in this paper will be mainly with A-consciousness and not with "a theory of consciousness in roughly the phenomenal sense", nor indeed with P-consciousness as such.

[6] First, because it appears to be a matter of definition for Block. In his discussion of A-consciousness, Block explicitly says that he wants "to allow that nonlinguistic animals, for example chimps, have A-conscious states", and he adopts a definition to fit the purpose (Block, 1995, p. 231). Secondly, without independent motivation Block's claim about "much lower animals" simply begs the question against Greek zombies. In addition, notice that the selective reactivity or 'simple thinking' of

nonlinguistic animals that Block seems to envisage here is of the sort that Jaynes explicitly excludes from consciousness (Jaynes 1976, ch. 1).

Notice that the notion of consciousness as described by Jaynes (mind-space and the analog I) is in many respects a fair approximation of the notion of A-consciousness as described by Block. Mind-space is the space in which mental contents are explicitly presented for introspection, deliberation and planning of action by the analog I, or in Block's terms, where we find contents poised for use as a premise in reasoning and for rational control of action and speech.

[7] The claim that consciousness is a social construction has also been made by other social constructivists such as George Herbert Mead (1934), Lev Vygotsky (1962) and Rom Harré (1986). For clarity and convenience I concentrate my discussion on Jaynes, however.

[8] Would it be possible to play baseball *accidentally* without having the concept of baseball? It is certainly conceivable that a group of people would go through (at least some of) the motions of a baseball game, but I think they would not be playing baseball. Not, that is, until the moment when one of the group says, "Let's do *that* again", where *that* is followed by an articulate description of what makes something a game of baseball (presumably including at least part of the rules of the game). At that moment, we may say, the concept of baseball has been introduced and baseball is born.

[9] Jaynes' approach to concepts is purely extensional. "Concepts are simply classes of behaviorally equivalent things," Jaynes said (1976, p. 31), which places them firmly outside the head. (More precisely, they are outside the head, but they are type-individuated in relational terms with reference to the user's behavioral repertoire.) According to Jaynes, our discriminative aptitude with regard to such classes is partly acquired in experiential development and partly based on innate neural structures. The neurally based aptitudes correspond to "root concepts" that are "prior to experience" and "allow behavior to occur at all" (*loc. cit.*). Jaynes' line on concepts is consistent with his treatment of 'reactivity', that is, the mind's aptitude to respond to the environment adequately and discriminatively. According to Jaynes, no consciousness is needed for this ability, nor indeed for the learning processes by which the aptitudes are acquired or modified. Moreover, a similarly 'automated' account is given of "simple thinking" and making judgments. As Jaynes put it, in many cases "one does one's thinking before one knows what one is to think about. The important part of the matter is the instruction [in an experimental set-up], which allows the whole business to go off automatically" (*op. cit.*, p. 39).

[10] As pointed out earlier, Bermúdez (2003) works with a notion of 'mental content' or 'concept' for prelinguistic creatures, the identity conditions for which appear to be substantially less stringent than those for concepts as ordinarily understood. This suggests at least a functional equivalent of the distinction between A-concepts and B-concepts, which merits further study.

Notice that the line of reasoning proposed here also undermines the straightforward application of a 'language of thought' hypothesis to B-minds. Unless the standard notion of 'language' is reconsidered to match B-conceptual possibilities, it is not clear what a mental language in B-minds could be supposed to do. Interestingly, an analogous reconsideration of the notion of language has also been argued by David Olson (1994), based on work in developmental and cultural psychology. Olson's point is that our common conception of language (including our notions of intention, meaning, concept, and the like) is *literate* to the bone, which makes its application to other forms of communication such as pristine orality highly suspect. In accordance with this analysis, Olson urges a sharp contrast between the modern literate mind on the one hand, and on the other hand the minds of preliterate children and of preliterate cultures.

[11] Block's functional distinction between A-consciousness and P-consciousness is targeted on explaining relatively isolated, abnormal phenomena such as blindsight (A-consciousness without P-consciousness), and brain damaged animals (P-consciousness without A-consciousness). Now, P-conscious Greek A-zombies would *structurally* and *normally* be like these brain damaged animals, or, to change the image, they would *structurally* and *normally* suffer from massive, pan-modal 'inverted blindsight'—we would be happy to think of them as having P-consciousness, yet they could not be said ever to have rational access to their conscious contents. This certainly strikes me as a type of mind substantially different from ours. Moreover, it makes me wonder whether the alleged possession of P-consciousness could ever be empirically demonstrated.

[12] See Kant (1781/1787), Kuhn (1962), Putnam (1981).

[13] As mentioned earlier, Jaynes explicitly denied that consciousness is necessary for thinking (1976, pp. 36ff). Moreover, in the afterword added in the 1990 edition of his book, Jaynes suggested that what he has called the analog I is closely related to the Kantian transcendental ego.

[14] For a devastating account of the cultural biases involved in attempts to draw the boundary, see Gould (1981).

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