

Johannes Bronkhorst

Ritual, Holophrastic Utterances, and the Symbolic Mind

1. Introduction

The evolutionary proximity of human beings to other primates is sufficiently established for studies of “the naked ape” or “the third chimpanzee” to be possible and justified.¹ Nevertheless, many of those working in the human sciences insist that there are fundamental differences between humans and the other primates. Something happened in our evolutionary past which led to the rise of a number of features that we do not share with our evolutionary cousins. The most notable of these are language, ritual, religion and culture. What happened that had these momentous consequences? The following pages will propose an answer. Given the nature of the question, it is appropriate to begin with primates different from us.

2. Symbolic representation

In research carried out during the seventies at Georgia State University, two chimpanzees – called Sherman and Austin – participated in an experiment meant to investigate whether chimpanzees could be taught to use language, and to what extent they would do so.² Since the vocal tract of chimpanzees does not allow them to pronounce the sounds of human language, a different method was employed: the apes were taught to use a special computer keyboard made up of so-called lexigrams. The more specific aim of the experiment was to find out whether they would be able to use lexigrams in combinations. These combinations might then be looked upon as elementary syntactical relationships. The chimps were trained to chain lexigram pairs in simple verb-noun relationships. For example, the lexigram GIVE followed by the lexigram BANANA would result in the giving of a banana. GIVE followed by ORANGE would be similarly successful, but other combinations would not. The following scheme, where + means “successful”, and ✕ means “unsuccessful”, illustrates this:

1 These are the titles of two popular books on human behaviour by Desmond Morris (1967) and Jared Diamond (1992) respectively.

2 See Savage-Rumbaugh & Rumbaugh 1978: esp. 279ff.

GIVE + BANANA → +
 GIVE + ORANGE → +
 BANANA + ORANGE → ✕
 ORANGE + GIVE → ✕
 etc.

Initially our chimps would have just two “verb” lexigrams and four food or drink lexigrams to choose from. But the mere learning of a number of lexigram pairs was not sufficient for the chimps to understand the general system (viz. “verb” followed by “noun” leads to the appropriate result). They could learn individual associations between specific pairs and their result, but for a long time they failed to grasp the system of relationships of which these correlations were a part. In the end they did grasp the system, but at the cost of thousands of trials in which they had to find out what combinations of lexigrams led to no result whatsoever. Once they had grasped the system, they had *crossed the symbolic threshold*. They had succeeded in using “words” as symbols in the special sense used here: as signs that do not only refer to “their” objects, but also to each other.

For a correct appreciation of what follows it is essential to understand that the word *symbol* is not used here in its usual sense and that it should on no account be confused with it. I borrow the word in this specific sense – i.e. signs that do not only refer to “their” objects, but also to each other – from Terrence Deacon, who in turn borrowed it from the philosopher Charles Sanders Peirce. Symbols of this kind play a role in what we will call *symbolic reference*.

Even the highly condensed presentation of long and elaborate experiments given above shows how much is required to acquire symbolic reference. To cite Deacon:

“What the animals had learned was not only a set of specific associations between lexigrams and objects or events. They had also learned a set of logical relationships *between the lexigrams*, relationships of exclusion and inclusion. More importantly, these lexigram-lexigram relationships formed a complete system in which each allowable or forbidden co-occurrence of lexigrams in the same string (and therefore each allowable or forbidden substitution of one lexigram for another) was defined. They had discovered that the relationship that a lexigram has to an object *is a function of* the relationship it has to other lexigrams, not just a function of the correlated appearance of both lexigram and object. This is the essence of a symbolic relationship.”³

3 Deacon 1997: 86.

What Sherman and Austin learned with enormous and prolonged exertion *we humans* learn in our childhood, apparently with much less effort.⁴ Where the two chimpanzees took a long time to learn to pay attention, not just to the desired object of their activity, but also to the signs and to their relationships with each other, we learn to do so almost automatically. Indeed, all normal human children learn the language of their care-takers. Yet the complexities of those languages are much greater than those of the simple sets of “words”, two in each set, which Sherman and Austin managed to master. All human children cross the symbolic threshold at an early age, without realising it. They are able to do so because evolution has equipped us for this task, primarily by giving us a much enlarged prefrontal cortex.⁵

Let us stay somewhat longer with our two chimpanzees. Initially, they had learned the combination GIVE + BANANA as an indivisible whole, which gave rise to a pleasant result, viz. that a banana was given to them. After thousands of trials and errors, they had mastered the system behind it. They had learned, for example, that the lexigram GIVE could be used with a following ORANGE so as to lead to a different result, viz. that an orange would be given to them. Meanwhile they had learned that these two outcomes had something in common, and that this common element was somehow represented by the lexigram GIVE. Similarly, other combinations had taught them that the lexigram BANANA was associated with the element banana in various activities. In other words, Sherman and Austin were in the process of creating *representations* corresponding to elements of objective reality. These representations were the result of the overlap of events: the representation “give” resulted from the overlap of “give banana” and “give orange”. Human beings appear to arrive at their representations in a similar, though much more complex manner.

These few reflections show that the learning of language facilitates the formation of representations. These representations correspond initially to the shared parts of different linguistic utterances, i.e. primarily words. However, these same reflections show that this process, once begun, does not necessarily stop here. We can easily imagine a situation where our chimpanzees wish to receive an object for which there is no lexigram on their keyboard, say a piece of chocolate. In that case they might create a symbolic representation, *chocolate*, which they would know how to deal with syntactically if only there were a lexigram CHOCOLATE, for example in GIVE + CHOCOLATE. In other words, once the learning of language has initiated the capacity of creating symbolic representations, the animal may be in a position to create new symbolic representations for which there are no words.

4 Only in extremely “unfavorable” external circumstances, such as those experienced by so-called feral children, may human infants not succeed in acquiring language. On feral children, see Candland 1993; Newton 2002; Strivay 2006.

5 See Deacon 1997: 145–318 (Part Two: Brain).

This accounts for the human capacity not only to create new words, but also to have symbolic representations for which there are no words.⁶

Consider in this connection another ape, a bonobo called Kanzi. Kanzi, for reasons that will not be discussed at present, acquired language to a degree far superior to Sherman and Austin. Strikingly, his linguistic skills subsequently facilitated other kinds of learning, even in domains that were not directly associated with language. Indeed,

“his understanding encompassed all manner of novel events and even of metaphor. His understanding of language informed his interpretation of real world events and his broadened capacity to interpret and appropriately classify real world events informed his linguistic comprehension in a boot strapping effect. An example of this was the ease with which Kanzi learned to flake stone tools given a modicum of both visual and verbal instruction. Similar attempts by other apes required long and arduous conditioning and shaping regiments.”⁷

Crossing the symbolic threshold, it appears, involves more than being able to learn to use language. It opens up a world of representations which, by the *boot strapping effect* mentioned in this passage, extends well beyond the representations covered by the words of one’s language.⁸

It is tempting to connect these reflections with what neurobiologists tell us about human consciousness. Consider the following passages from a recent book by Gerald M. Edelman, a neuroscientist:

“By its very nature, the conscious process embeds representation in a degenerate,⁹ context-dependent web: there are many ways in which individual neural circuits, synaptic populations, varying environmental signals, and previous history can lead to the same meaning.

[...]

There is no single circuit activity or code that corresponds to a given conscious ‘representation’. A neuron may contribute to that ‘representation’ at

6 *Symbolic representations* must be distinguished from *concepts*. An animal of prey may have a concept of the animals that it hunts, in the sense that it will know and recognise them. Without symbolic representation, however, it cannot think about those animals the way those endowed with symbolic representation can.

7 Savage-Rumbaugh & Fields & Taglialatela 2000: 916.

8 It is for this reason hardly surprising that Kanzi is reported to have made, all on his own, four new “words”, standing for “banana”, “juice”, “grapes” and “yes” (*New Scientist*, 2 January 2003).

9 On p. 43 Edelman explains: “Degeneracy is the ability of structurally different elements of a system to perform the same function or yield the same output.”

one moment, and in the next have no contribution to make. The same is true of context-dependent interactions with the environment. A shift of context can change the qualia that are parts of a representation, or even recompose some qualia and still keep that representation.

[...]

[D]epending on input, environment, body state, and other contexts, different core states can underlie a particular representation. The interactions are relational and have the properties of polymorphous sets. These are sets, like Ludwig Wittgenstein's 'games', that are defined neither by singly necessary nor by jointly sufficient conditions."¹⁰

Elsewhere Edelman draws attention to the hippocampus, a neural structure in the brain which is "necessary for episodic memory, the long-time memory of sequential events, the brain's 'narrative'". He comments: "Higher-order consciousness rests in part on episodic memory, and in the absence of such memory coherent semantic activity would not be likely to develop."¹¹

It seems probable then that the overlap of episodic memories and other mental events plays an important role in the creation of representations in the mind, just as for Sherman and Austin the intersection of the useful units of communication GIVE + BANANA and GIVE + ORANGE led to the representation *give*. Symbolic reference greatly increases the number of representations thus created. It seems that Sherman and Austin had not analysed the representation *give* out of the numerous situations themselves in which they had been given various things. Only the exercises with the lexigrams taught them to do so. We may assume that the same happens to human children when learning to speak.

Symbolic reference makes, in this way, an almost limitless multiplication of representations possible, as well as their combination in countless ways. Indeed, worlds of imagination can now be created that take us away from our immediate impulses and experience. The results are multiple. Symbolic representation, to begin with, permits us to think, and speculate, about our own past and future and, what is more, to think about ourselves as characters in numerous scenarios. In this way, we can think about ourselves the way we think about others. This is what Deacon refers to in the following passage:

"Consciousness of self in this way implicitly includes consciousness of other selves, and other consciousnesses can only be represented through the virtual reference created by symbols. The self that is the source of one's experience of intentionality, the self that is judged by itself as well as by others for its moral choices, the self that worries about its impending departure from the

10 Edelman 2004: 105f.

11 Ibid.: 99.

world, this self is a symbolic self. It is a final irony that it is the virtual, not actual, reference that symbols provide, which gives rise to this experience of self. This most undeniably real experience is a *virtual* reality.”¹²

Symbolic representation influences our experience.¹³ We will return to this below. It also allows us to be objective with regard to ourselves, which in turn is behind our tendency to judge ourselves the way we judge others (at least to some extent). This in turn allows for empathy on a wider scale than might otherwise be possible. *Without* symbolic representation there would be *no* detachment from immediate arousal and compulsion, *no* possibility to judge oneself the way we judge others, *no* place for moral choices, *no* developed forms of empathy, *no* ordinary sense of self, and much else.

Symbolic representation does not stop at self-representation. The immediate arousal and compulsion mentioned earlier, as well, are objectified and find a place in the “outside world” in the form of values and institutions. The result is as described by Roy A. Rappaport, who uses the word *symbol* approximately in the same way as we do:¹⁴

“The epochal significance of the symbol for the world beyond the species in which it appeared did not become apparent for many millennia – perhaps hundreds of millennia – after it had emerged. But earlier effects of language and even proto-language upon the lifeways of the hominids in its possession must soon have become enormous. [...] [L]anguage permits thought and communication to escape from the solid actualities of here and now to discover other realms, for instance, those of the possible, the plausible, the desirable, [...] [However,] [l]anguage does not merely *permit* such thought but both *requires* it and *makes it inevitable*. Humanity is a species that lives and can only live in terms of meanings it itself must invent. These meanings and understandings not only reflect or approximate an independently existing world but participate in its very construction. The worlds in which humans live are not fully constituted by tectonic, meteorological and organic processes. They are not only made of rocks and trees and oceans, but are also constructed out of symbolically conceived and performatively established

12 Deacon 1997: 452. This self is what Dennett (1991: 418) calls the narrative self; see below.

13 Van Driem, forthcoming: “The idea that language exerts an unfavorable effect on perception itself and blinds us to reality is an old idea already espoused by Bertus Brouwer and Frederik van Eeden.”

14 Cp. Rappaport 1999: 4: “only humans, so far as we know, are possessed of languages composed, first, of lexicons made up of symbols in Peirce’s sense of the word [...] or Buchler’s [...]: that is, signs related only ‘by law’, i.e. convention, to that which they signify, and second, of grammars, sets of rules for combining symbols into semantically unbounded discourse.”

[...] cosmologies, institutions, rules, and values. With language the world comes to be furnished with qualities like good and evil [...]"¹⁵

Once again, this description concerns the world experienced with the help of symbolic representation. The world experienced without it, if such a thing is possible, is without these features.

The effects of symbolic representation go even further than this. Objective reality is in part social reality. This is what John R. Searle set out to show in his book *The Construction of Social Reality* (1995). And indeed, it cannot be denied that there is "an objective world of money, property, marriage, governments, elections, football games, cocktail parties and law courts in a world that consists entirely of physical particles in fields of force, and in which some of these particles are organized into systems that are conscious biological beasts, such as ourselves".¹⁶ In other words, "there are portions of the real world, objective facts in the world, that are only facts by human agreement".¹⁷ This social reality, which is real, is yet *language-dependent* (chapter 3). In institutional reality, language is not used merely to *describe* the facts but, in an odd way, is partly *constitutive* of the facts.¹⁸ And being language-dependent, it depends on symbolic representation.

Largely as a result of symbolic representation, human thought is, to at least some extent, narrative in nature.¹⁹ To cite the philosopher Daniel Dennett:

"Our human environment contains not just food and shelter, enemies to fight or flee, and conspecifics with whom to mate, but words, words, words. These words are potent elements of our environment that we readily incorporate, ingesting and extruding them, weaving them like spiderwebs into self-protective strings of *narrative*. Indeed, [...] when we let in these words [...] they tend to take over, creating us out of the raw materials they find in our brains.

Our fundamental tactic of self-protection, self-control, and self-definition is not spinning webs or building dams, but telling stories, and more particularly concocting and controlling the story we tell others – and ourselves – about who we are."²⁰

One of the characteristics of narrative is its so-called 'chunking' of experience. As a matter of fact, "[i]t is easier to organize knowledge and behavior if the vast realms of experience are subdivided; indeed, the world would quickly become

15 Rappaport 1999: 8.

16 Searle 1995: xi–xii.

17 Ibid.: 1.

18 Searle 1999: 115.

19 See, e.g. Turner 1996.

20 Dennett 1991: 417–418.

unmanageable if I had to sort through every possible concept and potential course of action at every given moment.”²¹ To avoid the threatening chaos, the narrative, i.e. symbolic mind sifts through the data of perception and apportions different parts to different narratives. Depending on the “stories” in which “I” figure, certain objects will receive extra attention, others will be neglected. This sifting process is, once again, at least in part the result of symbolic representation.

We may sum up what precedes by once more citing Deacon:

“Because of our symbolic abilities, we humans have access to a novel higher-order representation system that not only recodes experiences and guides the formation of skills and habits, but also provides a means of representing features of a world that no other creature experiences, the world of the abstract. We do not just live our lives in the physical world and our immediate social group, but also in a world of rules of conduct, beliefs about our histories, and hopes and fears about imagined futures.”²²

Here two points have to be emphasised. First, symbolic representation does not only affect the way we think, or the way we communicate, it also affects our cognition and the way we experience the world. Second, the way we experience the world with the help of symbolic representation – in short, *symbolic experience* – is based on, and cannot exist without, non-symbolic experience. In other words, we have *two cognitive styles*, one of which (the symbolic one) cannot exist without the other, but not vice versa. Let us look at these two points:

1. Symbolic representation affects the way we experience the world. As symbolic beings we live in a constructed world, which contains many things that the real objective world, which is “outside” and independent of us, does not contain, or which it only contains by human agreement. Among these constructed things, as we have seen, we must count our objectified self (“self”, “soul”), our objectified urges (“values”, “morality”), objects to which a function has been attributed (bank-notes where there are only pieces of paper), and much else.
2. *Symbolic experience is rooted in non-symbolic experience and would become seriously dysfunctional without it.* Without non-symbolic experience we might lose contact with reality altogether, being locked, without possibility of escape, into a world of imagination that symbolic representation creates for us.²³ The young child has pure non-symbolic experience, which allows it to subsequently “cross the symbolic

21 Herman 2003: 172.

22 Deacon 1997: 423.

23 According to certain sleep researchers, this is what happens in dreams. See Llinás & Paré 1991; Jouvet 1999: 106f.; Jeff Warren 2007: 137f.

threshold” and make the quantum jump into the world of symbolic experience. But even after this jump it needs non-symbolic experience to anchor the world it constructs into objective fact.

The conclusion we are led to draw is that we, normal human adults, experience the world in a double manner: a constructed world of symbolic representation is added on to a world of “raw” experience which underlies and accompanies it.

What would non-symbolic experience be like, if it could free itself from symbolic representation? Consider first the following passage from Searle’s book:

“From a God’s-eye view, from outside the world, all the features of the world would be intrinsic, including intrinsic relational features such as the feature that people in our culture regard such and such objects as screwdrivers. God could not see screwdrivers, cars, bathtubs, etc., because intrinsically speaking there are no such things. Rather, God would see *us treating* certain objects as screwdrivers, cars, bathtubs, etc. But from our standpoint, the standpoint of beings who are not gods but are inside the world that includes us as active agents, we need to distinguish those true statements we make that attribute features to the world that exist quite independently of any attitude or stance we take, and those statements that attribute features that exist only relative to our interests, attitudes, stances, purposes, etc.”²⁴

We may not be gods, but our experience of the world without symbolic representation would be close to the one attributed to God in this passage: we would see no screwdrivers, cars, bathtubs, etc., but only the objects that people who *do* use symbolic representation treat as screwdrivers, cars, bathtubs, etc. On the basis of our earlier reflections, we may add further features. If we could free ourselves from symbolic representation, we would have no “objective” notion of self, we would inhabit a world without values, and our expectations of the future and many of our memories of the past would not affect our present experience. And finally, we would not filter out many of the features of the world that have been neglected because they do not fit into any of our present narratives.

Once again it will be interesting to cite the observations of a neurologist. Antonio Damasio deals with the question of consciousness in his book *The Feeling of What Happens* (1999). He distinguishes between two kinds of consciousness, which he calls *core consciousness* and *extended consciousness*. Core consciousness, he argues, is of a non verbal nature. Extended consciousness is based on core consciousness, and cannot exist without it. The reverse is not true: core consciousness *can* exist without extended consciousness, and this is indeed what happens in certain neurological disorders. Extended consciousness, in the words of Damasio, “goes beyond the here and now of core consciousness, both backward and forward.

24 Searle 1995: 12.

The here and now is still there, but it is flanked by the past, as much past as you may need to illuminate the now effectively, and, just as importantly, it is flanked by the anticipated future. The scope of extended consciousness, at its zenith, may span the entire life of an individual, from the cradle to the future, and it can place the world beside it. On any given day, if only you let it fly, extended consciousness can make you a character in an epic novel, and, if only you use it well, it can open wide the doors of creation”.²⁵ About the experience of core consciousness he says:

“In a neurologically normal state, we are never completely deprived of extended consciousness. Yet it is not difficult to imagine what a possessor of *only* core consciousness probably experiences. Just consider what it may be like inside the mind of a one-year-old infant. I suspect objects come to the mind’s stage, are attributed to a core self, and exit as quickly as they enter. Each object is known by a simple self and is clear on its own, but there is no large-scale relation among objects in space or time and no sensible connection between the object and either past or anticipated experience.”²⁶

For our present purposes it is important to remember that extended consciousness cannot exist without core consciousness, so that core consciousness is present in some way in every normal conscious human being. To this may be added that extended consciousness, whatever its neurological basis, is largely shaped by symbolic representation. Damasio’s extended consciousness may therefore be considered as coinciding for a large part with the consciousness that results from symbolic representation. Damasio’s observations confirm in this manner that symbolic experience is based on, and cannot do without, non-symbolic experience.

Edelman, whom we met before, distinguishes between what he calls primary consciousness and higher-order consciousness. Even though he thinks that “it is likely that [such primates as chimpanzees] have a form of higher-order consciousness”, he recognises that the acquisition of language makes a major difference. About this he says:

“Clearly, one of the largest steps toward the acquisition of true language is the realization that an arbitrary token – a gesture or a word – stands for a thing or an event. When a sufficiently large lexicon of such tokens is subsequently accumulated, higher-order consciousness can greatly expand in range. Associations can be made by metaphor, and with ongoing activity, early metaphor can be transformed into more precise categories or intrapersonal and interpersonal experience. The gift of narrative and an expanded sense of temporal succession then follow. While the remembered present is in fact a reflection of true physical time, higher-order consciousness makes it

25 Damasio 1999: 195–196.

26 *Ibid.*: 202.

possible to relate a socially constructed self to past recollections and future imaginations. The Heraclitean illusion of a point in the present moving from the past into the future is constructed by these means. This illusion, mixed with the sense of a narrative and metaphorical ability, elevates higher-order consciousness to new heights.²⁷

Note that more is needed than just a “sufficiently large lexicon” of arbitrary tokens that stand for things or events. These tokens – as has become clear from the experiments involving Sherman and Austin – should be recognised and employed as *symbols* in the sense used here, i.e. as referring not just to “their” things or events, but also to each other, and as constituting a system of logical relationships with each other.

In view of what has gone before we can use the image of a web woven by symbolic representation between us and the objects of our perception, a web that separates us from the outside world. This is of course only an image: there is no real web, and there is no real separation from the outside world. In reality, incoming signals are interpreted in the light of the numerous associations which they evoke. In the case of those who master symbolic reference, these associations are richer and far more intricate than for those who don’t.

3. Mysticism

In spite of its obvious insufficiencies, I will continue to use the image of a web woven by symbolic representation that situates itself between us and the outside world. Is it possible to push the web aside and experience the world in a more direct manner? Are we condemned to remain separated from the objects of our perception by this artificial construction that has interposed itself between us and the world? Some of the testimonies of people variously referred to as mystics, madmen and meditators suggest that the web sometimes tears, or is torn, whether on purpose or by accident.²⁸

Since William James, mystical experience has often been characterised as being *ineffable* and as possessing a *noetic quality*.²⁹ Literal-minded philosophers find the

27 Edelman 2004: 103.

28 Cf. Pyysiäinen 1993: 36: “mystical experiences may count as an exception to the linguistic quality of man’s being-in-the-world”; Staal 1990: 139: “mysticism is characterized by the absence of language. It points to a pre-linguistic state which can be induced by ritual, by recitation, by silent meditation on mantras, or by other means”. On the link of epileptic seizures with “deeply moving spiritual experiences, including a feeling of divine presence and the sense [of being] in direct communion with God”, see Ramachandran & Blakeslee 1998: 179f.

29 Wulff 2000: 400.

idea that it is ineffable, and therefore beyond the realm of language, puzzling.³⁰ Less cavilling readers may find this a particularly appropriate manner of describing experience that is no longer co-determined by symbolic representation, and therefore by language. Mystical and related experience is also said to give access to a different, higher reality, or to allow its subject to perceive things as they really are (this is James's noetic quality). Indeed, a universal effect of mystical experience is said to be "an understanding that what was experienced was more real/important than any prior experience."³¹ The second of these two claims corresponds to what we would expect to hear from someone who has succeeded in discarding symbolic representation, if only for a short while and perhaps only in part. Such a person may be expected to experience the world differently, and in a more direct and immediate fashion. For ordinary human experience is always separated from its objects by the web of symbolic representation. Seen this way, the claim that mystical experience gives access to a different and higher reality is, though not strictly true, almost correct. Experience through symbolic representation is indirect, mediate. Experience without it, or with less of it, is direct, immediate. Strictly speaking it is the same "objective" reality that is experienced, but it is experienced so differently that the experiencer may have difficulty recognising it. Indeed, recognition itself involves connecting the present cognition with earlier ones. In non-symbolic experience the link with constructed former and anticipated later experiences is weakened, or absent. (We will see below that all associative links with the past may be interrupted during mystical experience.) The subject is, as a result, easily convinced that he or she is confronted with a different reality, where in actual fact it is the same reality that is experienced differently. Let me add that, if our mystic has to answer the question which of the two realities he or she has experienced is more real, the answer can easily be predicted. The mystical experience is so much more direct and immediate, and so undoubtedly real, that the choice is obvious: the reality experienced in the mystical state is more real than the one of ordinary experience.

Other features commonly ascribed to mystical experience are easily explained by the weakening or disappearance of the web of symbolic representation. The ordinary self, for example, will tend to disappear. This does not surprise, given the fact that the ordinary self was a construction of symbolic representation to begin with. The unitary and undifferentiated nature of mystical consciousness emphasised by Stace (1960) and others is another feature that fits in well with the absence of symbolic representation. Let us recall that the symbolic cognitive style divides the world into representations. Without symbolic representation, reality presents itself as undivided, and therefore unitary.

30 See Gellman 2005: § 3.1.

31 Paper 2004: 4.

It seems safe to conclude from all this that there are ways to free experience, if only temporarily and perhaps partially, from the web woven by symbolic reference.³² This extraordinary experience will subsequently be interpreted in ways proper to the culture of the person concerned. Such interpretations are, of course, of the greatest significance both to those who have these experiences and to those who study them on the basis of witness reports. However, they do not interest us in the context of the present investigation.

We note in passing that this non-symbolic experience (the “mystical” experience) is highly valued and repeatedly sought after by many of those who have had it. There is a notable tendency to ascribe deep significance to it. We will have more to say about this below.

Having established that there appear to be ways of discarding the web of symbolic representation, we may give some thought to the question of how this result is obtained. The aim is not to enumerate techniques and methods that are *de facto* used by mystics and others who succeed in having mystical experiences. Rather, we wish to consider what mechanism we would expect, in the light of our reflections so far, to lead to that result.

In order to make progress, we have to abandon the image of a web woven by symbolic reference, and try to understand in a more factual way what happens when a person crosses the symbolic threshold. The case of Sherman and Austin will once again be helpful. Where these two chimpanzees had initially learned the connection between the pair of lexigrams GIVE + BANANA and the giving of a banana that followed, they had come to associate, after extensive supplementary learning, the single lexigram GIVE with a variety of situations and elements, among them other lexigrams. These numerous associations – with other lexigrams, with the order of lexigrams to be respected, with situations in which different things were given – allowed them to use this lexigram in a simple system of symbolic reference.

Essentially the same applies to human language users. A vast number of associations allows them to use words the way they do. Many, perhaps most, of these associations are not conscious. But they are there, below the surface.³³ Without them, language use would not be possible.

What should one do to remove the web woven by symbolic representation? The obvious answer is: Stop the extra associations that constitute symbolic reference.

32 It will be argued below that culture, too, weaves a web of symbolic reference that is added on to, or integrated with, the “linguistic” web.

33 Cp. Deacon 1997: 265–266: “The symbolic reference emerges from a pattern of virtual links between [neurological] tokens, which constitute a sort of parallel realm of associations to those that link those tokens to real sensorimotor experiences and possibilities.”

How does one stop innumerable associations, most of which are not even conscious? Focusing the mind presents itself as a plausible method.

Focusing the mind is a faculty which humans and many animals possess. Situations that are particularly threatening, to take an example, make us forget almost everything else.³⁴ This faculty is to some extent subject to ordinary conscious control. We then speak of concentration. It can take more extreme forms, in which case the expression *absorption* is to be preferred.³⁵ Absorption typically accompanies mystical experiences. Absorption, we must assume, reduces the number and perhaps the intensity of associations, including unconscious associations. What remains is an experience in which the associations that are responsible for symbolic representations have been reduced or suppressed: a non-symbolic, mystical experience.³⁶

This explanation of mystical experience has an additional advantage. If focusing the mind can reduce the number and/or intensity of associations, there is no reason to insist that in its strongest forms it affects only those associations that participate in symbolic representation. No symbolic representation is required to associate present with past experience: animals that have not crossed the symbolic threshold can yet learn from past experience, and therefore interpret the present in the light of the past. Mystical experiences that are completely timeless, and therefore without any associative connection with the past, can be understood as resulting from a state of absorption in which all associations with the past, including those that do not contribute to symbolic representation (if such exist), are interrupted. In other words, focusing the mind can serve as an explanation for mystical experiences that are free from symbolic representation, but also for aspects of such experiences that cannot be fully understood by the mere absence of symbolic representation.

34 The filtering of irrelevant information is preceded by activity in the prefrontal cortex and basal ganglia, particularly in the globus pallidus; cf. McNab & Klingberg 2007.

35 "Absorption is the tendency to alter our perceptions and surroundings while in a state of highly focused attention with complete immersion in a central experience at the expense of contextual orientation" (Maldonado & Spiegel 1998: 59).

36 Compare these reflections with the following passage from Pyysiäinen's book *Belief and Beyond* (1996): "If we now define the so-called external mystical experience [...] as an experience with sensory input but with no thoughts, it corresponds rather well to [the] description of the receptive mode in which [...] logical thinking and categorization are reduced to a minimum [...] [S]uch experience would mean that syntax and the linguistic aspects of consciousness [...] as well as off-line thinking are turned off. Moreover, also consciousness of one's own conscious nature [...], on which (together with language) the experience of self is based, supposedly disappears. What remains, is [...] on-line thinking, and an awareness of one's sensations. The external world does not disappear from one's consciousness, but is experienced as a here and now continuity with which oneself is coextensive."

The explanation of mystical experience by means of absorption has a further consequence. There can be degrees of absorption, with, as upper limit, the total interruption of all associations. This upper limit is not necessarily reached by all those who have mystical or semi-mystical experiences. It follows that there is a sliding scale connecting “ordinary” and “mystical” experience. A slight reduction of the number and intensity of associative mental connections may be part of everyone’s daily experience, yet may not strike those who undergo it as particularly remarkable: they may not even take notice.

4. Ritual

Ritual is often accompanied by formulas, strings of speech sounds. In India the term used is *mantra*, and I shall occasionally speak of *mantras* when referring to these kinds of formulas. Frits Staal, in several publications (e.g. 1984; 1985; 2006), has drawn attention to the fact that *mantras*, *when used as mantras*, do not express meaning, at least not in the ordinary way. He does not deny that many, though not all, *mantras* have a form that resembles or is identical with linguistic utterances. He emphasises, however, that *mantras*, even those that *consist of* language, are not *used as* language. Formulas used in ritual settings are not analysed.³⁷ Indeed, often they cannot be analysed. They may be in a language that is no longer used and that is unknown to those who hear or even pronounce the formulas. This is as true of the Latin of the Catholic mass³⁸ as it is of the Vedic Sanskrit used in Brahmanical ritual. Sometimes the formulas are in no known language. This applies to many of the *mantras* used in Tantric forms of Hinduism and Buddhism. A more familiar example may be *abracadabra*. Whether or not this formula has a historical etymology, it is and has been unanalysable and “meaningless” for most if not all of its users.

Why should ritual formulas be unintelligible, “meaningless”? This question may find its answer in the observation that ritual formulas are, or perhaps have to be, holophrastic. Ordinary holistic phrases – i.e. the formulas we use in daily life –

37 Cp. Rappaport 1999: 151: “It is virtually definitive of ritual speech that it is stereotyped and stylized, composed of specified sequences of words that are often archaic, is repeated under particular, usually well-established circumstances, and great stress is often laid upon its precise enunciation. As Maurice Bloch [...] has emphasized, in contrast to ordinary discourse in which considerable choice is open to speakers at a number of points in any utterance, in ritual formulae the ‘features of juncture’, those components of speech indicating relations among the referents, are immutable. In M. C. Bateson’s [...] terms, ritual utterances are ‘fused’. This is to say that meaning is derived from them as unsegmented wholes, or as wholes only segmented into minimal meaningful units of considerable length, usually much greater length than is the case in ordinary speech.”

38 For an ethnographic description of the Latin mass, see Jucker 2007.

do have functions. They may have a literal meaning as well, but this literal meaning plays a reduced role in the formula *when used as formula*. Sometimes the literal meaning may even be misleading. The phrase “how do you do?” is not a question about the way the person addressed *does* something. But even though the constituent words are misleading, the phrase is not without function, as anyone who refuses to use it in appropriate circumstances will soon discover.

Ritual formulas, then, are like ordinary formulas, but more so. Ritual formulas often do not even pretend to have a literal meaning. Indeed, it seems to be a plus for ritual formulas to be unintelligible. Let us therefore forget about their literal meanings. What remains? Let us recall that ritual formulas, being holistic utterances like formulaic phrases in ordinary language, can still have a function. Ordinary holistic utterances, as recent research has shown, often “seem to be geared towards manipulating the situation in which the speaker finds him- or herself”.³⁹ Nothing prevents us from assuming that ritual formulas do the same. And indeed, it would be easy to provide illustrations of the frequently manipulative intent of the use of ritual formulas. In India, “mantras are understood by the tradition as polyvalent instruments of power”;⁴⁰ “their function [...] is a direct action, generally a ritual one, or a psychological or mystical one”.⁴¹ It seems natural to conclude that ritual formulas do have a function, but unlike ordinary formulas they no longer pretend to have a linguistic meaning as well. Ritual formulas, seen this way, are the perfect holistic utterances. Compared to ritual formulas, formulaic expressions in ordinary life are holistic only in the sense that we do not bother to analyse them. Ritual formulas are different: they are unanalysable. *Like* ordinary formulaic expressions, they have a function, often a manipulative one. *Unlike* ordinary formulaic expressions, they perform this function directly, without the intervention of the elements that are designated by the words that occur in ordinary formulas.

Let us recall now the experiments in which the two chimpanzees Sherman and Austin learned, with great effort, to master symbolic reference. They started with what we might call holistic phrases like GIVE + BANANA. Once they had crossed the symbolic threshold, they could use the constituents of these phrases independently. They could, for example, use the lexigram BANANA in a new context created by themselves. Our ordinary language use is of that type, though infinitely more complex. We can use words in a virtually limitless number of contexts of our own choosing. However, ritual utterances are different. They are holistic. They correspond to the combined lexigrams GIVE + BANANA *before* Sherman and Austin had learned to segment this sequence. This suggests that people who opt for the use of holistic phrases – which is what we all do in specific, “ritual” circum-

39 Wray 2002b: 87.

40 Alper 1989a: 6.

41 Padoux 1989: 302.

stances – attempt, by so doing, to step back *out* of the realm of symbolic representation *into* the immediacy of non-symbolic experience.

To avoid confusion, let me add that not all formulaic expressions are, for that reason, ritual formulas. Quite on the contrary, it seems clear that formulaic expressions are also used in ordinary language, in play, and perhaps elsewhere. The question why certain formulaic expressions are accepted as ritual formulas whereas others are not, is interesting and deserves attention in its own right. It cannot be dealt with in this study.

Let us turn to ritual action. Is it possible to maintain that ritual activity relates to ordinary activity in the same way as ritual utterances relate to linguistic utterances?⁴² Let us recall that ritual utterances are holistic, unlike most utterances used in ordinary language. What is more, normal linguistic utterances exemplify symbolic reference. Is it possible to say the same, or approximately the same, about ritual and ordinary activity? Is it true that ritual activity is holistic in some sense whereas ordinary activity is guided by symbolic representation?

I suggest that this last question can be answered with a double *yes*. Yes, ritual activity is holistic, and yes, ordinary activity is guided by symbolic representation.

The holistic nature of ritual activity can be established with relative ease.⁴³ Scholars have often observed that ritual actions are divorced from their usual goals. Some emphasise that they have no meaning, or that they are not communicative.⁴⁴ This does not mean that rituals never have a specific overall purpose; they often do.

42 This was Rappaport's (1999: 151) position: "As far as form is concerned, ritual formulae are to ordinary language as ritual postures and gestures are to ordinary instrumental activity."

43 Cp. Rappaport 1999: 253: "*to perform a ritual is not to analyze it*. Indeed, the import of performance is exactly the converse of that of an analytic operation." The correctness of this observation is not necessarily affected by the fact that many rituals consist of a concatenation of "elements of ritual" (*Ritualelemente*; Michaels 2007: 242). See Michaels 2007: 246: "Das Problem aller Morphologie des Rituals ist: Wenn Handlungseinheiten als kleinste Bausteine des Rituals genommen werden, dann entspricht dies nicht den Morphemen einer Sprache, sondern allenfalls den Sätzen [...]". Similarly Lawson & McCauley 1990: 84 (cited Michaels 2007: 246): "Returning, then, to the analogy with linguistics, it is the action that is the analogue of the sentence (which is the fundamental unit of linguistic analysis)." It is of particular interest, and very intriguing, that some people resort to semantic etymologising when trying to explain the elements of ritual: "[A]n important part of the Ndembu explanation of symbols rests upon folk etymologizing. The meaning of a given symbol is often, though by no means invariably, derived by Ndembu from the name assigned to it, the sense of which is traced from some primary word, or etymon, often a verb. Scholars have shown that in other Bandu societies this is often a process of fictitious etymologizing, dependent on similarity of sound rather than upon derivation from a common source. Nevertheless, for the people themselves it constitutes part of the 'explanation' of a ritual symbol" (Turner 1969: 11). For more on semantic etymologising, see below, Appendix 1.

44 Staal 1990; Humphrey & Laidlaw 1994.

But “the set of sequences that compose the ritual are not connected to this goal in the same way as sub-actions connect to sub-goals in ordinary behavior”.⁴⁵ Let us recall in this context what was said above about the frequently manipulative intent of the use of ritual formulas. Both ritual acts and ritual formulas can be used to reach some end, but both seek to do so in a holistic manner, forgoing the functions which their constituent actions and words (if there are any) would normally accomplish.⁴⁶

What about ordinary activity? Must we accept that it is guided by symbolic representation? Yes, and the distinction between two cognitive styles introduced above explains why. Our dominant cognitive style is the one determined by symbolic representation.⁴⁷ It is the cognitive style that allows us to plan our lives and carry out projects of some complexity. It is this cognitive style that gave our ancestors, and us, an edge over competitors. It is the cognitive style on which our well-being, even our life, depends.

Ritual activities, seen this way, are, like ritual formulas, a *denial* of symbolic representation. Like ritual formulas, they are an attempt to step back *out* of the realm of symbolic representation *into* the immediacy of non-symbolic experience. Neither ritual activities nor ritual formulas are symbolic in the sense used here. Both concern a “different”, “higher” reality, a reality not touched by symbolic representation. Rituals and ritual formulas have their role to play, not in our ordinary world, but rather in the “higher” reality that is concealed by symbolic representation.

Does this mean that ritual activities are carried out, and ritual formulas uttered, with the intention of reaching mystical states? Scholars have pointed out that altered states of consciousness do often accompany ritual.⁴⁸ It is also known that ritual formulas are used in a number of traditions to evoke altered states of consciousness: the use of mantras in Indian yoga and the so-called *dhikr* in Islam come

45 Boyer & Liénard 2006: 3.

46 Cp. Rappaport 1999: 390: “It may be suggested [...] that ritual recaptures a state having its ontogenetic origin in the relationship of pre-verbal infants to their mothers. If this is the case the ground of the numinous precedes the development of any awareness of the sacred or the sanctified for, being discursive, that awareness can come only with language.”

47 Cp. Deacon 1997: 257: “In general terms, human information processing should be biased by an excessive reliance on and guidance by the kinds of manipulation that prefrontal circuits impose upon the information they process. We humans should therefore exhibit a ‘cognitive style’ that sets us apart from other species – a pattern of organizing perceptions, actions, and learning that is peculiarly ‘front-heavy’, so to speak.”

48 Cf. Rappaport 1999: 227: “ritually altered consciousness is widespread if not, indeed, culturally universal.” Staal 1990: 139: “mysticism [...] points to a pre-linguistic state which can be induced by ritual [...]” (cited above). According to Michaels (2006: 261), rituals “often create an auratic sphere or arena of timelessness and immortality”. See further Goodman 1988: 34f.

to mind. Nor is it surprising that these activities or recitations might bring about such results. We have seen that mental absorption can be a means to reach such states, perhaps the only one. Ritual activities and utterances may be conducive to mental absorption. The fact that the difference between ordinary and mystical experience is not abrupt, so that people can have “weak” or “partial” mystical states, confirms the claim that altered states of consciousness may accompany many if not all rites.

In spite of this, I hesitate to look upon the search for altered states of consciousness as the only explanation for ritual in all its manifestations. I rather assume that most if not all human beings, including those who are unfamiliar with altered states of consciousness, are *implicitly aware* of the fact that the world created by symbolic representation is not the only world there is. This assumption gains in credibility if we recall that even “ordinary”, i.e. symbolic experience is not always to the same extent accompanied by associative mental connections: concentration and absorption reduce them, if ever so little. Even the person least susceptible to mystical experience is likely to undergo the resulting fluctuations in the thickness of the web woven by symbolic reference.

In a way we are obliged to make this assumption of an implicit awareness. The use of holistic utterances and holistic activities in ritual in widely separate cultures indicates that there must be such an awareness of the process that leads to ordinary, symbolic cognition, viz. through the division of an originally undivided cognition. *Without* the assumption of implicit awareness we might have to postulate that ritual utterances and ritual activities have been discovered by chance, presumably because these utterances and these activities gave rise to altered states of consciousness. This postulate does not, as it seems to me, deserve serious consideration. We therefore hold on to the view that implicit awareness of the two cognitive styles common to all normal human beings is behind ritual in its various manifestations.

Why should anyone – indeed, almost everyone – wish to act in or on the reality which is believed to be hidden below the surface of our ordinary experience? One reason is no doubt that virtually everyone, and not only mystics, is convinced that such a different reality exists, and that it is more real than ordinary reality. We have already seen that this conviction is almost correct. All humans are in possession of an alternative cognitive style which gives them more direct access to reality than symbolic representation does. All of them “know”, in some way, that their ordinary experience of the world is incomplete. There is another, “higher” reality, which has to be manipulated to secure one’s well-being. It cannot be manipulated with the help of symbolic reference. As a result, the manipulative tools provided by tradition – rituals and ritual formulas – are and have to be free from symbolic reference: they are, and have to be, holistic.

However, the implicit knowledge that people appear to possess about the nature of ordinary experience and its relation to a “different”, “higher” reality goes further than this. Symbolic representation is grounded in non-symbolic experience. Symbolic representation allows for deception and dishonesty, because it can create and communicate imaginary worlds and situations. Escape from symbolic representation through ritual is, in a number of cases, an attempt to re-establish reference by grounding it in the real world. Deacon gives in this context the example of the Yanomamö Indians from Venezuela, notorious for the almost constant warfare among themselves.⁴⁹ Occasionally peace is assured by means of an elaborate ritual known as a “Feast”. Deacon describes it as follows:⁵⁰

“First, the hosts who wish to make peace prepare a meal. When their guests are due to arrive, dressed as for war and carrying their weapons, the hosts put their weapons away and the men recline on their hammocks waiting for the guests to enter their village. The guests enter, dancing and chanting, and circle around the camp stopping in front of each host. There they ritually threaten them, raising an axe or drawing a bow and arrow. The hosts must remain unmoved, trying to show no fear and no offense at provocative remarks. After this has been repeated for a while (and latent hostilities have not erupted in violence), the roles are reversed. The guests recline in hammocks, their weapons hidden away, while the hosts circle around the camp dancing and ritually threatening their guests. Finally, when it is clear that nothing untoward is likely to happen, they break off and the guests are offered food. Later they may chant together, barter and exchange goods, or even arrange a marriage.”⁵¹

It is ritual which protects hosts and guests from the surprise attacks which are otherwise common among this tribe.

Grounding in the real world and the accompanying escape from symbolic representation with its possibilities of lies and deceit⁵² may explain the use of ritual on other occasions, too. A wedding ritual goes beyond the promises that are exchanged. These promises are, by means of ritual, grounded in a reality in which no

49 Deacon 1997: 403f.

50 Cp. Chagnon 1968: 97 ff. For a brief presentation and discussion of the recent allegation of mistreatment of the Yanomamö by this anthropologist, see Benson & Stangroom 2006: 154 ff.

51 Deacon 1997: 404.

52 This theme is taken very seriously by Rappaport in his study of ritual; see Rappaport 1999: 11f. and *passim*.

deception is possible.⁵³ Similar considerations may be applicable to other rituals, but this topic cannot be further explored here.

5. Mythology and religion

Many of the points discussed above are relevant to the realm which we commonly think of as religion. Symbolic reference accounts for more than just language. It also creates a barrier that separates human beings from a more immediate experience of reality. What is more, human beings are in some way aware of this fact. Some succeed in breaking through this barrier and attain a more direct experience of the world; we have called them mystics. Others search for the hidden reality which they believe must exist by various means: we have considered ritual, but there are no doubt others, among them philosophico-religious speculation. The implicit awareness of a more direct access to the world in which we live often takes the shape of a deep conviction that there is a higher reality, different from the ordinary world. What is more, there appears to be an implicit awareness that the world of our ordinary experience has come forth out of that higher reality. This notion may find expression in “creation myths”, stories which speak of the transition from an initial undivided whole subsequently divided. A primordial formless substance takes form, often under the influence of the spoken word. Rappaport gives a number of examples from a variety of cultures.⁵⁴ Also the idea that the highest reality is an encompassing whole is known to religious thought. The present study will not enter into an analysis of these beliefs. It can, however, be suggested that they contain an element of *truth*. Our world has indeed arisen out of an earlier one that was not yet divided. And this undivided whole is really still there and underlies all our cognition. But the transition from an undivided to a multiple world did not happen at the beginning of cosmic time. It took place in our childhood, when we, each of us individually, crossed the symbolic threshold.

The preceding reflections, if correct, show that symbolic reference, and the symbolic representation which results from it, have a profound effect on the way we experience the world. Symbolic representation is, in an important sense, that which makes us human, that which distinguishes us even from our nearest cousins in the animal realm. It does not just allow us to learn and use language, it provides us with the implicit or explicit conviction that there is a “deeper” or “higher” reality behind the “ordinary” reality which we experience in our everyday lives. This in its turn impels us to carry out certain forms of activity (“rituals”), and induces us

53 This observation is at variance with Deacon’s view according to which marriage is essentially a symbolic relationship the need for which explains the acquisition of language by early humans: “Symbolic culture was a response to a reproductive problem that only symbols could solve: the imperative of representing a social contract.” (1997: 401).

54 Rappaport 1999: 162ff.

to think certain kinds of thoughts. In view of all this, it is hard to overestimate the importance of symbolic reference. This in its turn raises the question whether symbolic reference makes itself also felt in other domains of human activity. The next section will argue that it does, and that culture may be one such domain.

6. Culture

We have so far considered symbolic representation in connection with language and, in particular, with vocal utterances. There is, however, no reason to believe that the faculty that allows us to create symbolic representation is only active in the presence of vocal utterances. This same faculty allows the deaf to use sign language, which employs gestures rather than vocal utterances. Sign language has syntax like ordinary language, and shares many features with it. It is indeed possible that gestures preceded vocal signs in the historical development of language.⁵⁵ However, we may go one step further and consider that the faculty which makes symbolic representation possible is not confined to language in *any* of its forms, whether vocal, gestural, or other (including lexigrams).

As pointed out above, the crucial faculty that enables the human infant to learn language is the capacity to pay attention not just to the objects in its environment, but also to features – whether vocal, gestural, or other – that it interprets as signs of those objects. This capacity allows, even obliges, the child to pay attention to further signs that are somehow related to these initial signs, and to the relationships between them. We have seen that the child uses this capacity when learning the language of its caretakers. This capacity is not, however, confined to the signs that make up this language. It also covers everything else that the infant associates, for whatever reason, with the objects of its experience and which it therefore interprets as signs.⁵⁶ The very capacity that allows the child to learn its language will also make it pay attention to other, non-linguistic, “signs” and look for the ways in which these signs are interrelated. In the case of language, the system of relationships between linguistic signs which it ultimately adopts is the structure that governs the language of the child’s caretakers. In the case of other, non-linguistic “signs”, too, the child is likely to adopt the system of relationships that its caretakers adhere to.

These somewhat abstract reflections suggest that the child, at the appropriate age, is not only busy acquiring its language. Alongside language, it explores the relationships that may exist between other potential signs. As in the case of lan-

⁵⁵ See Rowan Hooper in *New Scientist* of 5 May 2007, 6f.

⁵⁶ Cp. Deacon 1997: 264: “The contributions of prefrontal areas to learning all involve, in one way or another, the analysis of higher-order associative relationships. More specifically, [...] they are necessary for learning associative relationships where one associative learning process must be subordinated to another.”

guage, the child will in the end settle on the web of relationships which is the one accepted by those in its surroundings, or one close to it. It follows that the faculty underlying symbolic representation weaves not just one, but two webs that separate us from the outside world. One of these is the web woven by language; we have discussed it at some length. The other is the web woven by the non-linguistic signs that have come to be recognised as such in the culture of the individual concerned.

This web of non-linguistic signs can vary from culture to culture. Examples will therefore be culture-specific. As a widely understood, yet simple, and no doubt simplifying, example from the western world we may consider the Christmas tree.⁵⁷ The Christmas tree is not just a sign that designates something (Christmas, the birth of Christ, or something else again). It is also, perhaps even primarily, an element in a wide web of associations, at least for those who have grown up in cultures where Christmas was celebrated. People who have grown up in other cultures may learn what the Christmas tree stands for, they will, however, not share this wide associative web. A Christmas tree will not “mean” anything to them. In the case of those for whom it “means” something, we may assume that the Christmas tree is treated in a way not dissimilar to the way in which symbols (i.e. Peircean symbols, primarily the words of language) are treated. Like words, the Christmas tree is used to construct a system, a web of associations. (Unlike words, it may here be added, the Christmas tree and other cultural “symbols” are not likely to give rise to the precise representations that the use of words obliges their users to create.)

It may be justified to say that this web, or rather the accumulation of webs of which the Christmas-tree-web may be one, *is* the culture in which the child grows up.⁵⁸ As in the case of language, the web of culture may affect cognition. Interestingly, there is some evidence to suggest that cultures do indeed affect cognition differentially, that is to say, members of different cultures cognise the world differently.⁵⁹

57 The first four notes of Beethoven’s Fifth Symphony constitute another example. Marvin Minsky said the following about them: “no one could remember Beethoven’s Fifth Symphony entire, from a single hearing. But neither could one ever hear again those first four notes as just four notes! Once but a tiny scrap of sound, it is now a Known Thing – a locus in the web of all the other things we know, whose meanings and significances depend on each other.” (Cited in Sacks 2007: 211).

58 For a recent discussion of culture, see Plotkin 2007a.

59 See Plotkin 2007: 236ff., with references to various publications (Lillard 1998; Nisbett et al. 2001; 2003; 2005; Siok et al. 2004; Atran 1998; Medin & Atran 2004; Greenfield et al. 2003; Cole 2006). This suggestion is parallel to the hypothesis according to which individual languages are responsible for the way their users understand the world and act in it, the so-called Sapir-Whorf hypothesis; see, e.g. Gleitman & Papafragou 2005. Indeed, some maintain that the two theories cannot be separated: “a language is shaped by its culture, and a culture is given expression in its language, to such an extent that it is impossible to say where one ends and the other begins, i.e. what belongs to language and what to culture” (Grace 1987: 10).

The web of culture, like the web of language, can be torn, presumably by the same method, viz. when the person concerned enters into a state of absorption. This suggests that the so-called mystics experience a world that is not only free from all that language has superimposed on it, but also from numerous other superimpositions, which we may globally refer to as cultural superimpositions.

It follows from what precedes that the very capacity that enables us to learn and use language and is behind certain behaviours and experiences which are commonly referred to as religious, may also be responsible for human culture.⁶⁰ This capacity identifies certain objects and sensory inputs as signs of others, and looks for the system of their mutual relationships. A subset of these signs along with their mutual relationships constitutes language. Others constitute networks of connections, systematised and rationalised in ways that may differ from one culture to the next (just as languages vary). These networks of connections may incorporate background assumptions about the nature of the world around us. They may also, as in the case of the Christmas tree, have a primarily emotional character, and give “meaning” to our world. As in the case of language, these networks of associative connections are likely to be deeply anchored in each person. And as in the case of a first language, considerable effort may be required for alternative networks to find a place beside the original ones.

Appendix 1: Semantic etymologies⁶¹

Symbolic reference is essential for language learning. It allows us to “extract” words from larger utterances, just as Sherman and Austin had “extracted” GIVE from GIVE + BANANA. However, there is no obvious reason why this analytical process should stop at words. We might expect that human beings are inclined to push the analysis further, so that symbolic reference then goes beyond the level at which it is useful in daily life, and overshoots the mark, so to speak. This is what happens in the phenomenon to be considered in this Appendix.

Let us recall that human beings, more than chimpanzees, have the capacity to analyse acoustic and other inputs so as to discover symbols that may be hidden in them. Sherman and Austin had a hard time segmenting the unit GIVE out of the combinations GIVE + BANANA and GIVE + ORANGE. Human children segment countless words out of a linguistic input that contains no clear indications as to where one word ends and the next one begins, even less where one morpheme

60 It goes without saying that the term “religion” as commonly used also covers certain behaviours and experiences that are “cultural” in the sense here employed. In terms of the theory here presented, what is ordinarily understood as religion combines elements that require different explanations: some are “cultural” features, others fall into the category of “attempts to step back out of the realm of symbolic representation”.

61 Many of the examples given in this Appendix have been taken from Bronkhorst 2001.

ends and the next one begins. These same children nevertheless succeed in attributing meanings to the results of their segmentations. The question is, do children, and adult speakers for that matter, stop at the commonly recognised words of language, or do they move on beyond words, perhaps even beyond the morphemes that make up words?

This question is of some importance. If one thinks that words correspond to pre-existing representations, language users will then divide the linguistic input they receive into words that fit those pre-existing representations, and no further, because there are no representations further down the line.⁶² In this publication we take a different position: many representations are created, often (but not always) on the basis of the words of language. This position leads to the reasonable expectation that the segmentation that humans apply to their linguistic input is not halted once they arrive at some presumably natural representations. We would rather expect that human segmenting extends also beyond the words of language, into the realm of parts of words and perhaps even individual sounds.⁶³ This is indeed what we find. Human segmenting of this kind finds expression in the phenomenon which I will call semantic etymologising. This phenomenon is widespread.

A *semantic etymology* is to be distinguished from a *historical etymology*. A historical etymology presents the origin or early history of a word; it tells us, for example, that a word in a modern language is derived from another word belonging to an earlier language, or to an earlier stage of the same language. The English word *militant*, for example, is derived from Latin *militans* through the intermediary of French *militant*. And the Hindi pronoun *maim* 'I' is derived from Sanskrit *mayâ* 'by me' through Prakrit *mae*.⁶⁴ Semantic etymologies do something different. They connect one word with one or more others which are believed to elucidate its meaning. The god Rudra, for example, has that name according to the Vedic *Satapatha Brâhmana* (6.1.3.10), because he cried (*rud-*) in a story that is told about him. Semantic etymologies tell us nothing about the history of a word, but something about its meaning.

Semantic etymologies have largely gone out of fashion these days. Most sensible people have serious doubts about the possibility of finding the meaning of one word by comparing it with other, more or less similar words. We tolerate such semantic etymologising from children, who indulge in it quite freely, as Jean Piaget (1925) and others after him have shown. We are less tolerant with respect to adults who do so; the person who analyses the word *contentment* as concerning

62 See Pinker 2007: 89f. for a discussion of different points of view regarding representations (there called "concepts") in language and thought.

63 The question of individual speech sounds is tricky, for the notion that speech can be analysed into a sequence of phonemes, and their perception has been argued to be inseparable from alphabetical writing; Warren 1999: 169f.

64 Oberlies 1998: 17.

being *content* with *men*, or with *tea* (*content-men-t*), is diagnosed as schizophrenic by modern investigators, perhaps rightly so.⁶⁵

And yet semantic etymologies are widespread in all pre-modern cultures. Here are some examples:

In the Sumerian myth of Enki and Ninhursag the former is cured when Ninhursag causes deities to be born corresponding to Enki's sick members: "The correspondence between the sick member and the healing deity rests on the [...] etymologizing of the ancient scribes; the Sumerian word for the sick organ contains at least one syllable in common with the name of the deity. Thus e.g. one of the organs that pained Enki was the 'mouth', the Sumerian word for which is *ka*, and the deity created to alleviate this pain is called Ninkasi; similarly, the goddess born to alleviate the pain of the rib, the Sumerian word for which is *ti*, is named Ninti, etc."⁶⁶

An ancient Egyptian text carved inside two pyramids dating from the twenty-fourth century B.C.E. "is full of plays on words" such as: "O Atum-Kheprer, [...] thou didst arise (*weben*) as the *ben*-bird of the *ben*-stone in the *Ben*-House in Heliopolis."⁶⁷ Sauneron adds further examples and points out that 'plays on words' were considered to give an 'explanation' of the world.⁶⁸

In the Hebrew Bible etymologies are common, especially in connection with names: Adam is linked with *adama* 'earth' (Gen. 2.7); woman, *isha*, is derived from man, *ish* (Gen. 2.23); Cain from *qaniti* 'I have gotten' (Gen. 4.1); etc.⁶⁹

Kirk⁷⁰ emphasises the use of etymologies in Greek myths and states: "The poets of the Homeric tradition were already intrigued by the resemblance of the name 'Odysseus' to the verb *odussomai* 'I am angry'. [...] Pytho, the old name for Delphi, is derived [in the *Hymn to Apollo*, probably late seventh century B.C.E.] from the serpent destroyed there by Apollo and allowed to rot, *puthein*. [...] Heraclitus the Presocratic philosopher found it significant that one word for a bow resembled the word for 'life' (*biós* and *bíos*), and Aeschylus related the name of Helen to the idea that she 'took the ships' (*hele-naus*), that of Apollo to *apollunai*, 'destroy', and that of Zeus to *zên*, 'live'.⁷¹ Similar efforts at etymologising characterise later Greek antiquity.⁷²

65 So Werner & Kaplan (1963: 259), citing a patient of Maria Lorenz (1961: 604).

66 Kramer 1969: 37, n. 13.

67 Wilson 1969: 3.

68 Sauneron 1957: 123f. See further Morenz 1957; Sander-Hansen 1946, esp. 19f.

69 Böhl 1991: 163f.

70 Kirk 1974: 57f.

71 Ibid.: 58.

72 For a study of the etymologies in Homer, see Rank 1951; also Kraus 1987: 31f. For an (incomplete) list of etymologies in Plutarch, see Strobach 1997: 186f.

An example from medieval Europe is provided by the secret spiritual organisation of the Fedeli d'Amore, whose representatives were active in France, Italy, and Belgium from the twelfth century onward. They used a hidden language in order to keep their mystery of love secret. Love for them is a soteriological means, and accordingly the word *amor* 'love' is interpreted as *a-mor* 'without death':

*A senefie en sa partie
Sans, et mor senefie mort;
Or l'assemblons, s'aurons sans mort.*⁷³

Caesarius of Heisterbach (ca. 1170 – ca. 1240) gives an explanation of the word *mors* 'death' in his *Dialogue on Miracles*:⁷⁴

“Through the transgression of the first created, death entered into the world. Hence death (*mors*) received its name from ‘biting’ (*morsus*). As soon as man bit (*momordit*) the apple of the forbidden tree, he incurred death and subjected himself as well as his whole posterity to its necessity. Death is also said to have come from ‘bitterness’ (*amaritudine*), because, as it is said, no pain in this life is more bitter than the separation of body and soul.”

Elsewhere he explains the word *puer*, ‘boy’: “*Puer* (‘boy’) signifies *purus* (‘pure’)”.⁷⁵

An example from ethnographic records is the following: Among the inhabitants of the Trobriand islands the word *vatuvi* occurs in a magical formula.⁷⁶ This word has no grammatical form; it is neither noun nor verb. Malinowski observes:

“the real etymological identity of this word will define it as connected with vitawo, or the prefix vitu-, and the word vituvatu, ‘to institute’, ‘to set up’, ‘to direct’, ‘to show’. [It has] also [...] fortuitous, but magically significant associations with *vatu*, ‘coral boulder’, ‘coral reef’, and the more or less real word *va-tuvi*, ‘to foment’, ‘to make heal’.”⁷⁷

All these semantic etymologies illustrate one and the same phenomenon: the search for expressive units beyond the level recognised in the speech community concerned. They remind us that the capacity for symbolic reference was not created *for* language learning (even though its usefulness in language learning no doubt explains the selective advantage it offered).

73 See Eliade 1986: 112.

74 Cited in Zaleski 1988: 50.

75 Cited in *ibid.*: 52.

76 Malinowski (1935: vol. 1: 96; vol. 2: 257) describes it as the most important formula in all Omarakana garden magic.

77 Malinowski 1935: vol. 2: 249; cf. 260–261. Regarding the last association, *va-tuvi*, Malinowski observes (*ibid.*: 260–261): “As a matter of fact, one or two natives [...] gave me this explanation of the word when commenting upon the spell.” It is not clear whether any native made the association with *vatu* explicit.

The Chinese language, with its monosyllabic words, lends itself less easily to an analysis beyond the level recognised in the speech community. However, its many homonyms invite its users to connect unrelated things that have the same name. Indeed, “Han commentators applied a form of correlative thought in their philological studies, frequently explaining the meaning of obscure characters by sound analogy on the assumption that a phonetic correspondence indicated a semantic relation”.⁷⁸ “Sometimes highly complex circular *shou* emblems [symbols of long life or immortality] had incorporated into their design a swastika (pronounced *wan*), to express by a pun the concept of *wan shou*, meaning ‘ten thousand years of long life’.” Similarly: “The endless knot [was] interpreted [...] as symbolizing Buddha’s intestines (*ch’ang*). [...] [S]ince its name, *ch’ang*, made a pun on the word for long, the whole figure [...] symbolized [to the later Chinese] a long life [...]”⁷⁹ etc. An example closer to our time is found in the weekly journal *Newsweek* of July 6, 1987, p. 18: “Hong Kong’s new British governor, Sir David Wilson, bowed to local tradition by changing his Cantonese name, Ngai Tak-ngai, shortly before assuming office last April. Its characters were homophones for the phrase ‘so hypocritical it’s dangerous’; his new moniker, Wai Yik-shun, means ‘guardianship’ and ‘trust’, conjuring up more soothing images to colony residents [...]”. These examples do not illustrate the search for expressive units beyond the level commonly recognised, but something different. They illustrate the search for a shared semantic interpretation of minimal units, even where the speech community assigns different interpretations to them. This search is, of course, similar to the search that allowed Sherman and Austin to arrive at one representation for GIVE, starting from GIVE + BANANA and GIVE + ORANGE.

Appendix 2: Symbolic reference and the origin of language

The origin of language is increasingly debated. To get an impression of some current opinions, we turn to a recent issue of the journal *Lingua*, which is dedicated to language evolution.⁸⁰ One of the contributors, Derek Bickerton, points out that “[t]his is an interdisciplinary game, played by biologists, neurologists, anthropologists, archaeologists, computer scientists, philosophers, and more – as well as [...] by linguists”.⁸¹ On the following page he emphasises the distinction between “*language* evolution” and “changes in *languageS*”⁸². The former is part of the biological evolution of humans, the latter belongs to the realm of cultural change.

78 Henderson 1984: 19–20.

79 Cammann 1962: 98, 99–100.

80 *Lingua* 117/3 (2007): 503–604.

81 Bickerton 2007: 510.

82 Ibid. 511.

An essential concept in the study of language evolution is *protolanguage*. Says Bickerton: “The notion that the earliest stages of language evolution involved a largely if not entirely structureless protolanguage [...] is now so widely accepted that the term seems to have passed into the general vocabulary of language evolutionists.”⁸³ This protolanguage is, as indicated, largely if not entirely structureless. What were its constituents? According to Bickerton, “there does not, as yet, exist any compelling reason for rejecting the original concept of a protolanguage as containing a categorially complete, if severely limited vocabulary of items roughly equivalent to modern words, but lacking a sophisticated phonology and any consistent structure”.⁸⁴

Not everyone accepts this position. A rival one is the theory according to which protolanguage was holophrastic. Bickerton says the following about it:

“[T]he most radical proposal with regard to the constituents of protolanguage is that these were holophrastic rather than synthetic. This proposal has been most thoroughly developed by [Alison] Wray [...]. Wray’s proposals support genre continuism, since [...] animal calls are roughly equivalent to holophrases, rather than words. Wray claims that protolanguage simply increased the number of such units to a point where they began to impose an excessive memory load, at which point the holophrases were decomposed on the basis of phonetic similarities. Here we can do no better than quote Wray’s own example: ‘So if, besides *tebima* meaning *give that to her*, *kumapi* meant *share this with her*, then it might be concluded that *ma* had the meaning *female person + beneficiary*.’ ([Wray] 2000: 297)”⁸⁵

Bickerton does not agree with this proposal, as is clear from his comments:

“This leaves out of account the possibility that, although the syllable *ma* might occur as Wray suggests, it would also occur in a number of holophrases lacking any references to either females or beneficiaries. Not only is this extremely likely, but the only possible alternative is, if anything, even more damaging to Wray’s case. For if *ma* occurred always and only where female beneficiaries were involved, the holophrastic protolanguage would be a hollow charade, a mere disguise for a medium already fully synthetic. But if *ma* also occurred where a female + beneficiary was impossible – contexts perhaps as numerous as, or more numerous than, those that can bear such a reading – why would the hearer assume that it referred to a female benefi-

83 Ibid.: 515.

84 Ibid.: 517.

85 Ibid.: 516–517.

ary in just those cases where such a reading was possible, and how would that hearer account for the other cases?”⁸⁶

For further arguments against the holophrastic model Bickerton refers to one of his own earlier publications (Bickerton 2003) and to the contribution of Maggie Tallerman in the same issue of *Lingua* (Tallerman 2007).

Alison Wray, the main target of Bickerton’s criticism, is also a contributor to this issue of *Lingua*, in an article that is co-signed by George W. Grace. The two authors describe their understanding of the first language users in the following words:⁸⁷

“[W]e must understand that what made the very first language users different from their parents was that they possessed the capacity to identify patterns inside their existing message units and extract (apparently) recurrent material for recombination. [...] The first ‘segmenters’ need not have stood out all that much from those around them, for theirs would have been a marginal activity relative to the general use of holistic forms with agreed functions. Those who *could* segment out sections from holistic utterances for recombination could do so [...], while the others carried on using what they already knew. The analysis, operating in direct response to interactional need, could thus be naturally very slow, and indeed would need to be, both because the analyticity of the modern speaker would be little challenged by the holistic usages of his pre-modern companions, and because, in the short term, his novel expressions, while meaningful to him, would be impenetrable to the rest, unless they learned them whole. But little by little, under the influence of even one analytic operator and his/her descendants over a number of generations, an initially immutable protolanguage could progressively transform into something more flexible, until a command of the flexibility became advantageous to survival and/or reproduction.”⁸⁸

This passage is slightly puzzling in that it calls those with the capacity to segment existing units “the first language users”. One would rather have expected that these segmenters be called “the first word users”: through their segmenting they would have arrived where Bickerton’s protolanguage users were all along, viz. in the possession of “a categorially complete, if severely limited vocabulary of items roughly equivalent to modern words, but lacking [...] any consistent structure” (see above). This is no doubt what Bickerton had in mind when he wrote: “All the sub-

86 *ibid.*: 517.

87 The idea of a holistic protolanguage is not new. As Van Driem (2004) points out, Hugo Schuchardt argued already in 1919 that the first utterance arose from the splitting of a holistic primeval utterance (“Sprachursprung” I & II, *Sitzungsberichte der Preussischen Akademie der Wissenschaften* 52: 716–720, 863–869).

88 Wray & Grace 2007: 570–571.

stantive problems in language evolution – how symbolism got started and fixed, how, when, and why structure emerged, where and to what extent any of this got instantiated in neural tissue – remain to be solved, *whether one accepts a holistic account or not.*⁸⁹ Bickerton concludes from this that “it is more parsimonious to assume that language began as it was to go on – that discrete symbols, whether oral or manual, were there from the beginning”.⁹⁰ I am not sure whether parsimony settles this issue, even if we were to follow Bickerton in other respects. It is at least conceivable that language evolution passed through various phases, starting from a holophrastic phase, which was then (partly) succeeded by a synthetic phase.⁹¹ Alternatively, one might think that the very process whereby segmenting became possible was also responsible for at least some structure. We will return to this issue below.

Let us assume, for argument’s sake, that there was once an exclusively holophrastic protolanguage. The first segmenters differed from their parents on account of a new capacity, the capacity to segment holophrastic phrases. This new capacity may have had a biological basis. This, at any rate, is what Wray and Grace assume. Only in this way can “even one analytic operator and his/her descendants over a number of generations” exert the influence referred to in the above passage: if this capacity were cultural, there would be no need to wait a number of generations, and the novel expressions of the first language users would not necessarily be “impenetrable to the rest”. We will see below that this is not the only possible point of view.⁹² For the time being we will, however, follow Wray and Grace in assuming

89 Bickerton 2003: 87 (emphasis mine, JB).

90 Ibid. Interestingly, Wray (2000: 287) invokes Occam’s razor to argue for the continuity between the holistic communication used by primates and the holistic language we use today.

91 This is Mithen’s position (2005: 260): “This ‘words before grammar’ is the type of language evolution that Bickerton proposed – so we can see that his views are not necessarily wrong, but are simply chronologically misplaced and require a pre-existing history of holistic protolanguage to be feasible.” Wray (2002a) speaks of “the holistic system that I propose pre-existed and provided the context for the emergence of the analytic system” (116) and of “the holistic protolanguage that I propose coexisted with – and preceded – the simple analytic system from which our modern grammatical capability developed” (ibid.: 118); see also the following: “there is a place for a simple analytic proto-language of the kind that Bickerton proposes, but not as the sole medium of communication” (ibid.). Arbib (2003: 183; cp. 2005: 108, 118f.) introduces the notion of a *prelanguage* which, he suggests, was composed of “unitary utterances” and which preceded the discovery of *words*: “On this view, words in the modern sense co-evolved with syntax through *fractionation*, a process of discovery and diffusion quite distinct from the formation of a genetic module for grammar.”

92 Citing Dennett (2003: 184–185), but putting *language* instead of *religion*, one might say: “If there are any genes for [language], this is, in fact, one of the least interesting and least informative of the Darwinian possibilities.”

that the new capacity must be thought of as being based on a genetic mutation, and therefore as part of biological evolution.

The above passage from Wray and Grace's article also presupposes that all members of the group, including those who do not yet possess the capacity to identify segments, are capable of learning new utterances. Only in this way can they "learn whole" expressions that are impenetrable to them. These expressions are not therefore genetically transmitted. This presupposition is not spelled out in Wray and Grace's article, but seems to be important in view of the fact that it takes for granted an important difference between human protolanguage and primate calls, which *are* genetically transmitted.

The specification that the protolanguage out of which modern language eventually arose was different from primate calls and that it consisted of learned utterances that could be distinguished from each other answers a number of the objections voiced by Tallerman in her contribution to the *Lingua* issue, notably those that deal with the presumed proximity of the protolanguage to animal calls⁹³ and with its presumed phonological insufficiency.⁹⁴ We cannot deal with them in detail. Some of her other criticisms are summed up and responded to by Mithen in the following terms:

"Although linguists unsympathetic to Wray's approach, such as Derek Bickerton and Maggie Tallerman, have questioned the feasibility of segmentation, their criticisms have been unsubstantial. Tallerman claims, for instance, that the likelihood of any chance associations arising is remote, but computer simulations have shown that they could easily have happened [...] while Wray herself has explained how the process of segmentation may have been supported by 'near matches'. Tallerman also claims that holistic utterances are unlikely to have contained multiple phonetic strings with the potential for segmentation because they would have been too short. But one need do no more than consider the lengthy holistic phrases of monkeys, apes, birds, and so forth, to appreciate that those of our human ancestors may

93 Elsewhere in her article Tallerman accepts that "protolanguages (like languages) are culturally transmitted" (2007: 599).

94 See in this connection Wray 2002a: 115: "I have suggested that the holistic cries and gestures of our pre-human ancestors were transformed, *over a long period of time*, into a *phonetically expressed* set of holistic message strings [...]" (emphasis mine, JB). Also Arbib 2003: 196: "[T]he lowering of the larynx in humans or pre-human hominids might have served a similar purpose (as in the red deer, viz. deepening the animal's roar, JB) – without denying that further selection could have exploited the resultant increase in degrees of freedom to increase the flexibility of speech production. [...] [*T*]his selective advantage would hold even for a species that employed holophrastic utterances devoid of syntax." (Emphasis mine, JB).

have been of considerable length,⁹⁵ having evolved over millennia and proliferated in number to provide ever greater semantic specificity. Similarly, an argument that Wray's theory of segmentation has to assume the prior existence of discrete segments, which then invalidates her conception of holistic utterances, also has no foundation. Holistic utterances may have been multi-syllabic but they were – by definition – holistic, with none of the individual or groups of syllables mapping onto a discrete aspect of the utterance's complex meaning."⁹⁶

It is not the aim of this Appendix to enter into an exhaustive discussion of all the arguments for and against the holophrastic model (whether in the form of the assumption that all human protolanguage was holophrastic, or rather that a holophrastic protolanguage gave rise to an analytic protolanguage which in its turn gave rise to language). What counts at this point is that this model is not dead, far from it, it is alive and kicking. This allows us to consider some of its consequences. Wray and Grace observe: "For reasons that may be partly biological, the older the individual becomes, the more likely he or she is to dissect language more than is strictly necessary for effective general communication."⁹⁷ Since the capacity of dissecting language does not respond to a specific need, the result may be surprising:

"Any biological influences on the balance between formulaicity and compositionality may be limited to the peripheral capacity to open up a form before there is a specific need to do so, thus maintaining a creative edge to one's engagement with language. Since such a capacity would simply need to exist, rather than achieve any specific goal (such as a complete analysis of the language into atomic particles and rules), we might anticipate finding that its effects are haphazard and idiosyncratic – and indeed we do.

95 Consider in this connection the following: "In a paper with Nobuyuki Kawai, [Tetsuro] Matsuzawa showed that Ai, a young chimpanzee, could remember a sequence of at least five numbers, more than a preschool child; and at a recent symposium in Chicago on 'The Mind of the Chimpanzee', he showed how Ai, with further training, had developed powers of working memory beyond that of most human adults. He suggested that 'our common ancestors might have had immediate memory, but in the course of evolution, they lost this and acquired languagelike skills.'" (Sacks 2007: 159, n. 8; see further Kawai & Matsuzawa 2000, and Cohen 2007).

96 Mithen 2005: 254.

97 Wray & Grace 2007: 561.

One individual might suddenly wonder what it is that is ‘done’ in *how do you do?*, while another notices that *barking* seems to contain the morphemes *bar* and *king*. Such inappropriate analyses will capture attention whereas others, that turn out to be rational in terms of the shared perceptions of compositional structure in the language, are simply absorbed.”⁹⁸

The “peripheral capacity” referred to in this passage is central to the holophrastic model (in either of its two forms). The model predicts this capacity, and would indeed be empty without it. The existence of this capacity in modern humans, on the other hand, does not suffice to prove the correctness of the holophrastic model. The fact that one sometimes wonders what is ‘done’ in *how do you do?* does not, by itself, prove that human language arose out of a protolanguage (or proto-protolanguage) which was holistic. However, if it could be demonstrated that the capacity to open up forms before there is a specific need to do so is more than a capacity, that it is a proclivity that manifests itself in various ways across human cultures and stages of development, this would constitute an argument in support of the holophrastic model. Such a proclivity would be harder to account for in the synthetic model, for here words are extracted to correspond to pre-existing concepts. The widely attested use of semantic etymologies (discussed in Appendix 1, above) provides such a demonstration.

Let us now restate some of the objections that have been voiced against the holophrastic model. Bickerton, in a passage already cited, found fault with Wray’s hypothetical example in which, besides *tebima* meaning *give that to her*, and *kumapi* meaning *share this with her*, early language users might conclude that *ma* had the meaning *female person + beneficiary*. Bickerton’s criticism took the following form:

“This leaves out of account the possibility that, although the syllable *ma* might occur as Wray suggests, it would also occur in a number of holophrases lacking any references to either females or beneficiaries. Not only is this extremely likely, but the only possible alternative is, if anything, even more damaging to Wray’s case. For if *ma* occurred always and only where female beneficiaries were involved, the holophrastic protolanguage would be a hollow charade, a mere disguise for a medium already fully synthetic. But if *ma* also occurred where a female + beneficiary was impossible – contexts perhaps as numerous as, or more numerous than, those that can bear such a reading – why would the hearer assume that it referred to a female

98 Ibid.: 561–562.

beneficiary in just those cases where such a reading was possible, and how would that hearer account for the other cases?”⁹⁹

Tallerman discusses the same hypothetical example and comments:

“A major problem in this regard is that logically, similar substrings must often occur in two (or more) utterances which do *not* share any common elements of meaning at least as many times as they occur in two utterances which *do* share semantic elements. For instance, suppose that a string *mabali* also contains the *ma* sequence, but means ‘put that rock down!’. What ensures that *ma* gets associated with ‘her’?”¹⁰⁰

Bickerton and Tallerman are probably not aware of the fact that reflections similar to theirs occur already in one of Plato’s Dialogues, the *Cratylus*. This Dialogue presents Socrates in discussion with Cratylus, an etymologist. Socrates subjects the procedure of (semantic) etymologising to a thorough analysis. This procedure is not dissimilar, in Socrates’ analysis, to the extraction of *ma* in the above hypothetical examples. Socrates would call *ma* a “primary name”; he further maintains that primary names are by their very nature like the things they denote.¹⁰¹ In the course of his analysis he comes to assign certain meanings to various letters of the Greek alphabet: the letter *rho* is expressive of speed, motion, and hardness; the letter *lambda* is like smoothness, softness, and other qualities. However, this leads to difficulties in words like *sklêrôtês* which, though containing the letter *lambda*, means “hardness”.¹⁰² Like Bickerton and Tallerman, Socrates considers these difficulties insurmountable: “I myself prefer the theory that names are, so far as possible, like the things named; but really this attractive force of likeness is [...] a poor thing, and we are compelled to employ in addition this commonplace expedient, convention, to establish the correctness of names”.¹⁰³

Socrates was not, of course, discussing the transition from protolanguage to language. He was concerned with semantic etymologies. Just as Bickerton and Tallerman try to undermine the hypothesis of a holistic protolanguage, Socrates’ arguments should have discouraged semantic etymologising. They did no such thing. Consider the reflections of Isidore of Seville, the sixth-century author of a monumental work called, precisely, *Etymologies*. About etymologies he says, among other things:¹⁰⁴

99 Bickerton 2007: 517.

100 Tallerman 2007: 597.

101 Plato, *Cratylus*: 169 (Transl. Fowler).

102 Ibid.: 173.

103 Ibid.: 175.

104 Barney et al. 2006: 55 (Etymologies I.xxix).

“Etymologies of words are furnished either from their rationale (*causa*), as ‘kings’ (*rex*, gen. *regis*) from [...] ‘acting correctly’ (*recte agendum*); or from their origin, as ‘man’ (*homo*) because he is from ‘earth’ (*humus*), or from the contrary, as ‘mud’ (*lutum*) from ‘washing’ (*lavare*, ppl. *lutus*), since mud is not clean, and ‘grove’ (*lucus*), because, darkened by its shade, it is scarcely ‘lit’ (*lucere*).”

Isidore should perhaps have followed Socrates’ example and pondered upon the question whether there is some meaning that can be ascribed to the sound sequence *hom/hum* and that recurs in all formations of which this sequence is part. He might have offered similar reflections with regard to *lu* and *luc*. He did not. Difficult cases and counterexamples clearly did not discourage him.

Examples of etymologies like these can be cited from widely different cultures and literatures; further examples are provided by children and psychiatric patients. This has been shown in Appendix 1. Strictly speaking they do not extract meaningful segments, at least not explicitly. It is, however, clear that they are based on the similarity or identity of parts of the words compared. In many cases there is no linguistic justification whatsoever for these semantic etymologies. This is stated in so many words in a text from ancient India that deals with etymologising, Yaska’s *Nirukta*. Ancient India too had a sophisticated tradition of grammar, which obliged scholars to distinguish between the two activities. Yaska’s position in this matter is clear: etymologising is the complement of grammar, it treads where grammar cannot go.¹⁰⁵

Consider now Sverker Johansson’s criticism of the idea of a holistic protolanguage:¹⁰⁶

“It is not obvious to me [...] why the segmentation process envisaged by Wray [...] would be expected to work. A similar process is certainly present in modern-day language acquisition – children first acquire some stock phrases as unanalyzed wholes, and later figure out their internal structure – but that only works because these stock phrases *have* an internal structure, given by the grammar of the adults from whom the child acquires them.”¹⁰⁷

Johansson assumes (as do Bickerton and Tallerman) that the segmentation process can only work where the material already contains, in a consistent and organised manner, the segments that are being extracted. Socrates would agree, for he refers repeatedly to the name-givers who gave names to things in a long distant past. But not all semantic etymologies are based on this belief. Most semantic etymologising takes place quite independently of it. Semantic etymologising

105 Bronkhorst 1984.

106 Cited by Tallerman 2007: 594.

107 Johansson 2005: 234.

“works”, i.e. it is practised, in spite of the fact that the words and phrases dealt with do *not* have any relevant internal structure. We must conclude that there is a widely attested proclivity to extract segments and assign meanings to them even in cases where the material is inconsistent and resists such segmentation. This proclivity coincides in all essentials with the capacity to segment postulated by the upholders of the theory of a holophrastic protolanguage. It is not limited to situations in which the prior existence of discrete segments has to be assumed. This, then, does away with some of the most serious criticism of the idea of a holophrastic protolanguage.

Having come this far, let us consider in some detail what the transition from holistic protolanguage users to segmenters implies. It has been suggested that a genetic mutation may be responsible, but this remains vague. Indeed, it amounts to little more than giving a name (“genetic mutation”) to a process which one does not understand. And yet, the process concerned may not escape understanding, and what is more, it is open to question whether a genetic mutation has to be postulated to explain it.

The event which turns holophrasts into segmenters may be nothing else than crossing the symbolic threshold. Our hominid ancestors crossed this threshold (phylogenetically) many thousands of years ago, and all human beings who learn to use language do the same (ontogenetically) during their early years.

Symbolic reference even seems able to explain at least some of the syntactic rules of language. Deacon argues, to begin with, “that the structure of [Universal Grammar] would not yield to a biological evolutionary solution, nor would it have a neurological explanation”.¹⁰⁸ According to him, many structural features of language may derive from semiotic constraints, inherent in the requirements for producing symbolic reference. Indeed, “some major universals of grammar may come for free, so to speak, required by the nature of symbolic communication itself”.¹⁰⁹ Deacon is of the view that “it may turn out that many core features of [Universal Grammar] – recursive operations, the minimally diadic structure of sentences, and many subadjacency, ordering, and dependency constraints of grammar – trace their origin to [...] indexical [...] requirements [which] apply to all symbolic linguistic relationships”.¹¹⁰ As a result, “theoretical efforts now directed toward showing how innate [Universal Grammar] could have evolved and how it might be instantiated in brains could well turn out to be mere intellectual exercises”.¹¹¹

108 Deacon 2003a: 90, with a reference to 1997. See also Van Driem 2001: 66ff. (“The splitting of the symbol and the birth of syntax”).

109 Deacon 2003: 138.

110 Ibid.: 133.

111 Ibid.: 139.

It would seem, then, that the crossing of the symbolic threshold had a double effect on the forms of communication of our remote ancestors. Symbolic reference enabled them to segment the holophrastic utterances (or other forms of communication, e.g. gestures) they had hitherto employed. On top of that, symbolic reference imposed certain constraints on the combined use of the resulting segments.

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