



Cognition and the language myth

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Abstract

There is arguably a parallel between recent ideas within cognitive science about the distributed mind and the development within linguistics known as integrationism, turning on similarities between the critique offered by the former of the ‘classical’ view of mind and by the latter of the ‘classical’ view of language. However, at the heart of the integrationist attack on the classical view of language is rejection of the idea that natural languages are codes. This idea appears to be taken for granted by certain cognitive scientists as the basis for explaining not only how language is mentally apprehended by the individual, but also how it facilitates ‘second-order cognition’. It is suggested that the language-as-code idea, although *prima facie* endowed with the attractiveness of common sense, is untenable, and should not figure, at least in the role usually assigned to it, in any inquiry into either language or human cognition in general.

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1. Introduction

This paper is both about cognition in general and about how we cognise language in particular. First, freely paraphrasing Andy Clark, in his book *Being There* (1997), I shall briefly outline the contrast he presents between the ‘classical view of mind’ and

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a recent line of thinking within cognitive science that can be summarised under the label ‘distributed cognition’. Then I want to draw a parallel with a recent move in linguistics from a ‘classical view of language’ to an ‘integrational’ view which, I suggest, may in certain respects be seen as the linguist’s counterpart of the distributed view of mind in general. Then I ask why Clark, in his chapter on language, cleaves by implication to a classical view, and consider some of the consequences of that for his overall position on the mind.

On the face of it, the distributed cognitionist and the integrational linguist have a lot to learn from each other, and a lot to gain from acknowledging the other’s ideas. The former needs the non-mythic account of language which, I believe, is provided by the latter; while integrationism, currently seen within linguistics as scarcely more than a bundle of sceptical attitudes to various orthodoxies, may have an interest in associating itself with—indeed, incorporating itself into—a positive movement within cognitive science.

2. The classical view of mind

The canonical version of the classical view of mind is straightforward Cartesian dualism, according to which mind and body are not just separate, but two different kinds of thing. The first move away from pure dualism is to concede that the mental, although separate from the physical, must have a material substrate of some kind—that the mind and its contents and operations must be a function of the workings of a physical machine. But to move only this far away from Descartes, according to Clark and the line of thinking I am taking him to represent, is not to move far enough. This is still the classical view of mind.

Whether a physical underpinning is acknowledged or not, the classical view essentially takes the mind to be *passive*, in that its function is to *reflect* external states of affairs or to *encode descriptions* of them. This idea of the mind as, among other things, a repository of inert information supports a neatly tripartite distinction between perception, cognition and intentional action. Perception is a process by which we receive information from the world. Cognition is then a matter of performing operations—computations—on a static inner rendition of such information. Intentional action is the carrying-out of commands that constitute the output of the computational system. Central to this model is the idea of a mental filing-cabinet—a store of language-like symbols waiting to be retrieved and manipulated by a centralised computational system. The mind sits inside a body—is, perhaps, part of a body—but operates as if its corporeal location were a contingency that has no effect on its central function, which is to manipulate information in the production of symbolically coded solutions to symbolically expressed problems.

3. The distributed view of mind

According to Clark, the problem with the classical view of mind is that it fails to acknowledge the role, in matters pertaining to cognition and the taking of contextu-

ally useful action, of the rest of the body and of the local environment. It fails to take on board the fundamental fact that brains evolved to control the activities of bodies in the world. In Clark's view, there is no neatly compartmentalised domain of the 'mental', and the mind is not the passive repository of an overarching world-view. Rather, the mental is inextricably interwoven with body, world and action: the mind consists of structures that operate on the world via their role in determining action. Reasoning is *situated*, carried out by embodied beings acting in a particular physical environment. Minds evolved to make things happen: the mind is an organ for online control of the human body in the here and now. Intelligence is a *biological* phenomenon, consisting in the ways in which an organism is coupled to the world to yield relevant responses to situations in that world. The mind as a controller must generate appropriate actions, in the light of an ongoing interaction between the body and its changing environment.

Clark illustrates this general thesis in a multiplicity of ways. First, he observes that attempting to get an artefact to think like a human being by equipping it with a classical mind—i.e., essentially, a large central store of explicit knowledge plus the ability to manipulate and perform computations on that knowledge—simply does not work. It does not work because the classical mind radically misrepresents the nature of intelligence. Intelligence is not a matter of disembodied symbol manipulation. The problem with the computer program Clark discusses in this connection is that the system lacks the most elementary kinds of adaptive response to an environment.

Second, artefacts (in this case robots) that *do* work in that they display adaptive responses to their environment are designed on principles that fly in the face of the classical theory of mind. The 'new robotics' rejects the idea of a 'central planner' privy to all the information available in the system and dedicated to the discovery of possible behavioural sequences that will satisfy particular goals. The trouble with the central planner, says Clark, is that it is profoundly impractical, because the incoming sensory information has to be converted into a symbolic code, and the planner's output then has to be decoded into the various formats needed to control various types of motor response. Such encodings and decodings are time-consuming and expensive. The behaviour of the 'new robots' is not mediated by any integrated knowledge-base depicting the current state of the overall environment. They are designed on the assumption that excessive general world-modelling is to be avoided: such modelling as is required is geared to the demands of real-time, behaviour-producing systems.

Third, Clark presents analogies between the way the 'new robots' work and certain human activities: running to catch a ball does not, apparently, involve computing the trajectory of the ball. A more computationally efficient strategy, and the one that it seems we actually use, is to run so that the acceleration of the tangent of elevation of gaze from fielder to ball is kept at zero (Clark, 1997, p. 27). Such a strategy avoids many computational costs by isolating the minimal and most easily detectable parameters capable of supporting the specific action required. Similarly, everyday visually guided problem-solving does not involve the transformation of incoming light signals into a detailed model of a three-dimensional external world. Fast,

adaptive responses can be supported by less computationally demanding routines: e.g. the use of rapid and repeated saccades to survey a visual scene and to extract detailed information only at selected locations. The use of saccades enables us to circumvent the need to build enduring, detailed models of our visual surroundings. Instead, we can use the world itself as its own best model, visiting and revisiting the real-world scene, sampling it in detail at specific locations as required.

Fourth, and most importantly, he offers many examples of how we provide *scaffolding* for the mind by reorganising the environment so as to minimise computational problems. In general, Clark argues, evolved creatures will neither store nor process information in costly ways if they can use the structure of the environment and their operations upon it as a convenient alternative. For instance, the margins of the relevant page of a crossword-solver's newspaper are likely to show evidence of attempts to offload on to the environment part of the mental burden of working out anagrams. One of Clark's own examples invites us to think about how we deal with jigsaw puzzles: on the whole, we do not proceed by looking hard at a piece and trying to determine by reason alone whether it will fit in a certain location. Rather, we tend to make a rough mental determination and then physically try out the piece to see if it will fit: rarely do we mentally represent the shape of a piece with sufficient accuracy to know for certain if it is going to fit in advance of such physical manipulation. Moreover, we may physically rotate candidate pieces even before we try to fit them, so as to simplify still further the mental task of roughly assessing potential fit. Completing a jigsaw puzzle thus involves an intricate and iterated sequence in which 'pure thought' leads to actions which in turn change (simplify) the problems confronting 'pure thought'.

Such considerations lead to the question: where, then, *is* the mind? Is it contained in the head, or does it leak out into the world? Individual brains are the seat of consciousness and experience. Every thought is had by a particular individual, making use of a particular brain. But Clark's story is that the *flow* of thoughts and the adaptive success of reason depend on repeated and crucial interactions with external resources. The role of such interactions is computational and informational: it is to transform inputs, to simplify search, to aid recognition, to prompt associative recall, to offload memory. The mind is in this sense *distributed*.

The claim, then, is that the aspects of real-world structure that the mind represents will often be tightly geared to specific needs and sensorimotor capacities. Clark's target is not the idea that brains represent *aspects* of a real, independent world, but rather the idea of those representations as inert and *action-neutral* and hence as requiring extensive additional computational effort to drive particular intelligent responses in particular situations.

4. The classical view of language

What I am calling the classical view of language is the view enshrined in orthodox or mainstream academic linguistics since Saussure (1922), where it represents the scientisation of a particular kind of perhaps culture-specific common sense about lan-

guage. Its most fundamental idea is that the domain of language (mass-noun) has crucially to be understood in terms of the concept of *a* language (i.e. ‘language’ as a count-noun). Any piece of language—utterance, inscription—is taken to instantiate part of some particular, discrete linguistic system, without reference to which it could neither be produced nor interpreted. In this respect languages have priority over language. Linguistics here reveals itself as the academic heir to a long and very familiar tradition of thinking about language, in terms of which we do indeed distinguish Welsh from Russian from Greek from Swahili, think of Latin as having evolved historically into the various Romance languages, and find the question ‘how many languages are there in the world today?’ to be at least coherently askable, even if it turns out to have no definite answer.

The second fundamental idea is that a language is an inventory of determinately identifiable linguistic units, each of which correlates a form with a meaning or meanings. In short, a language is held to be a fixed code. The fixed-code idea commits linguistics to a radical abstraction from actual linguistic behaviour, in at least two senses. First, in the sense that linguistics emerges as a discourse about items that are alleged to remain invariant across different unique utterance-events, namely the morphemes, words, sentences, etc. that constitute the language in question. Second, in the sense that of all the indefinitely many *kinds* of communicationally relevant dimensions of difference there may be between different utterance-events, only two are significant for linguistic analysis: those identified as the ‘form’ and the ‘meaning’ of the alleged invariants involved.

The third fundamental idea is closely bound up with the second. It is the idea that linguistic *communication* takes place in virtue of shared knowledge of the particular inventory of form-meaning correlations that constitutes the language in use. Communicating is a matter of encoding and decoding messages in terms of the shared code. In fact, these two ideas form a closed circle: the fixed-code concept of a language explains how communication is possible, while if this is what communicating is, then languages have to be fixed codes to enable communication to take place. This, in a nutshell, is what Roy Harris calls the ‘language myth’ (see e.g. Harris, 1981).

The language myth, rather obviously, fosters a particular view of linguistic cognition. To use language, to behave linguistically, is to implement one’s ‘tacit knowledge’ of a language, i.e. of a system of invariant form–meaning correlations that sits passively in the mind, in autonomous isolation from anything going on in the outside world, unaffected by the behaviour of the body that contains it, simply waiting to be brought into use as appropriate. Using it, in the ideal case, involves performing computations across the units of the system to produce and interpret grammatically correct utterances. The parallel with the classical view of mind is obvious. In fact, I think it is more than a parallel: I shall be suggesting that the classical view of language lies at the root of the classical view of mind.

Theorists in the classical tradition have differed as to how far they recognise an obligation to explain how speakers come into possession of this linguistic knowledge. Saussure, for instance, has nothing to say on the matter, which is a glaring if understandable omission in his case, given the holistic nature of the Saussurean *langue*

according to which a unit of the linguistic system can only be *identified* by reference to all the other units in the system which it is not. In contrast, Chomsky's enterprise of giving an account of linguistic cognition in terms of the classical view has, notoriously, led him to postulate a special mental organ dedicated to (some aspects of) language.¹

5. The integrational view of language

In a forthright challenge to the classical view, Harris questions whether the concept of a language corresponds to any determinate or determinable object of analysis at all, whether social or individual, whether institutional or psychological. For the integrationist, a language is a second-order cultural construct, perpetually open-ended and incomplete, arising out of the first-order activity of making and interpreting linguistic *signs*, which in turn is a real-time, contextually determined process of investing behaviour or the products of behaviour (vocal, gestural or other) with semi-otic significance.

¹ From an early stage Chomsky's enterprise has been to treat the structure of languages (understood in accordance with the classical view as fixed codes) as evidence for the cognitive organisation of language in the mind; and it has been dogged from the outset by fundamental conceptual problems. Chomsky's first move was to envisage a language as that which is tacitly cognised by 'an ideal speaker-listener, in a completely homogeneous speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention or interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance' (Chomsky, 1965, p. 3). Accordingly, 'a grammar of a language purports to be a description of the ideal speaker-hearer's intrinsic competence' (Chomsky, 1965, p. 4). Thus far, we have simply a projection on to an idealised individual of the traditional conception of a language as an essentially normative set of grammatical rules regulating the occurrence in utterances of the set of items that constitutes its lexicon, according to which the grammar of a language is thought of as an account of the linguistic competence of an imaginary being living in an imaginary community that is linguistically 'completely homogeneous', in a world where not only is the concept of a language such as to admit the possibility that a language might be known 'perfectly', but where the language *is* in fact known perfectly. However, in between the two passages quoted we find various remarks insinuating that we are somehow at the same time talking about *real* speaker-hearers in the *real* world. For instance (p. 4), 'only under the idealisation set forth [in the quotation from p. 3] is performance a direct reflection of competence'. What this seems to be intended to be read as meaning is that if you discount or remove the performance deviations, then a real live individual's linguistic competence would stand revealed in his or her speech (or comprehension of speech). But the 'idealisation set forth' is not just an idealisation *away* from performance difficulties (i.e. the result of distractions, shifts of attention, etc.). At the same time, it is an idealisation *to* a 'completely homogeneous' speech community and to 'perfect' linguistic knowledge. The notion that real speaker-hearers come into the picture only makes sense if we forget about this second part of the idealisation. Otherwise, what Chomsky seems to want us to understand here is incoherent. For it is far from obvious that if you abstract away from flesh-and-blood Mr. X's performance difficulties, what you perceive in his speaking-hearing is the underlying linguistic competence of someone in a completely homogeneous speech community who knows its language perfectly. For further discussion, with particular reference to (i) the possibility that a language is here to be understood as an idiolect, (ii) later attempts on Chomsky's part to resolve the incoherence, and (iii) the logic of the 'dedicated organ' requirement, see Love, 1988.

For Harris, a sign is neither any kind of thing (object, event, phenomenon) in itself, nor any abstraction from a thing held to be permanently latent in it. A temptation to think of a sign as a thing perhaps derives from a common use of the word ‘sign’ to refer to material objects of various kinds. So a flat metal disc of characteristic size and design bearing certain Arabic numerals and attached to a pole planted by the roadside may be called a speed-limit sign. And in this usage it may count as a ‘sign’ from the time of manufacture until long after it has been uprooted and thrown away. But this usage is of no interest to the integrationist, who is concerned with the object only in so far as it functions semiotically, *as a sign*. And it can only function as a sign when *in situ*, i.e. when located in the appropriate topographical context.

Even when located in an appropriate environment, an object only functions semiotically in so far as someone makes it do so. The signhood of the speed-limit sign is not immanent in it. However impeccably positioned, it is not a sign in the semiological sense when nobody is around to see it, for instance. Or when seen by strangers to our civilisation who have no idea what to make of it. Signhood is conferred on a sign—on what thereby becomes a sign—if and when human beings (or other semiotically competent creatures) attach a signification to it that goes beyond its intrinsic physical properties, whether in furtherance of a particular programme of activities, or to link different aspects or phases of their activities, to enrich their understanding of their local circumstances or general situation . . . Harris’s key term here is *integration*:

Signs, for the integrationist, provide an interface between different human activities, sometimes between a variety of activities simultaneously. They play a constant and essential role in integrating human behaviour of all kinds . . . Signs are not given in advance, but are made. The capacity for making signs, as and when required, is a natural human ability (Harris, 2000, p. 69).

Signhood is a transient, not a permanent, property of a sign. Nor is the nature of its signhood—its semiotic value—fixed, either for all sign-makers or for all occasions of their use of it in sign-making. The speed-limit ‘sign’, irrelevant as such for a bus passenger, may nonetheless function as a landmark by which he orients himself in relation to his usual bus stop (perhaps he comes to know that if he leaves his seat as the bus passes the 30-mph ‘sign’, he will be standing ready at the exit as it draws to a halt), and thus as a sign by which he integrates his bus journey with what happens next.

All this applies to the linguistic sign no less than to any other kind. The linguistic sign, whether spoken, written or manifest in any other medium, is not an object, or a permanent property of an object. It has no fixed or determinate semiotic value. It becomes a sign as and when used as such, and its signification is a function of that use.

According to Harris, in fact, it is doubtful whether a definite boundary between linguistic and non-linguistic signs can be drawn:

In order to understand the currency exchange rates in this morning’s newspaper, I have to understand a table in which there occur the graphic forms (i) *US*, (ii) *\$*, (iii) *France*, (iv) *Fr*, and (v) *5.659*. Furthermore, I have to work out that

(v), which occurs in the bottom row of a column headed by (iii), gives me information about how many francs I can expect to get for a dollar. (But I also have to understand that, in Berkeley's sense, there 'is no such thing as' six hundred and fifty-nine thousandths of a franc.) How much of all this is *verbal* information I have no way of telling. *Nor does it matter*. It does not prevent me from working out what I want to know. To ask what the status of the table is as regards the distinction between verbal and non-verbal communication is just a nonsense question. For a start, I have to understand the significance of the relationship between columns and rows. And in what compartment of human knowledge does that belong? (Harris, 1997, p. 271).

It is even doubtful whether language is to be equated or deemed co-terminous with verbal behaviour—if, when asked to sit down, I sit down, that is no less a manifestation of my linguistic knowledge than if I *say* something (for instance, 'no, thanks').

The connection with the distributed view of mind seems fairly clear. It turns on the fact that both integrational linguistics and cognitive science are 'involved in an escalating retreat from the inner symbol: a kind of inner symbol flight' (Clark, 2001, p. 120). For the integrationist, there is no comprehensive system of linguistic symbols sitting inertly in the mind (which is not to say that we may not have extensive conscious acquaintance with what Clark calls 'public' language). There is no neatly compartmentalised domain of the 'linguistic', and using language is a matter of creatively endowing certain phenomena with semiotic significance in order to operate relevantly on the world in accordance with the exigencies of an incessant flow of unique, real-time communication situations.

6. Clark's view of language

In *Being There*, where does language fit in? In his chapter on the subject Clark is concerned exclusively with what he calls 'public' language, and primarily with its use as scaffolding—as a tool for simplifying the computational tasks involved in various kinds of problem-solving. In this respect, language is for Clark the 'ultimate artefact'. He says nothing directly about the 'private' language² with which public language is being implicitly contrasted.

The central proposition in Clark's account of how linguistic artefacts may scaffold the brain is that someone who exploits external symbol-structures is trading culturally achieved *representation* against what would otherwise be (at best) time- and labour-intensive internal *computation*. The simplest cases are those that involve the use of external symbolic media to offload memory on to the world. Hence the use of artefacts such as texts, diaries, notebooks and the like as a means of systematically

² The term 'private language' here is no more than the obvious complement to Clark's 'public language', and simply refers to language *qua* possession or attribute of the individual. There is no implied allusion to any more specific or specialised use of the phrase, such as Wittgenstein's (see Wittgenstein, 1953, §§ 269 ff.).

storing large and sometimes complex bodies of data. We may also use simple external manipulations (such as leaving a note on the mirror) to prompt the recall, from onboard biological memory, of appropriate information and intentions at the right time. This use of specifically linguistic artefacts is continuous with a variety of simpler environmental manipulations, such as leaving a milk-carton by the door so that you cannot help but run across it (and hence recall the need for milk) as you set out for the shops.

A slightly more complex case concerns the use of labels as a source of environmental simplification. One idea here is that we use signs and labels to provide perceptually simple clues to help us negotiate complex environments. Signs for railway stations, nightclubs, city centres all fulfil this role. They allow a little individual learning to go a long way, helping others to find their targets in new locales without knowing in advance what, in detail, to seek, or even where exactly to seek it. More sophisticated benefits of the use of linguistic representation have to do with the use of language in co-ordinating action. We say to others that we will be in a certain place at a certain time. Thus, if another person knows you have said you intend to be at the station at nine o'clock, they can time their taxi-ride accordingly.

Further, and most importantly, it is public language that gives rise to the distinctively human capacity for *second-order cognition*: a 'cluster of powerful abilities' involving self-evaluation, self-criticism and finely honed remedial responses. Examples would include recognising a flaw in our own plan or argument and dedicating further cognitive efforts to fixing it, reflecting on the unreliability of our own initial judgements in certain kinds of situation and proceeding with special caution as a result, coming to see why we reached a particular conclusion by appreciating the logical transitions in our own thought, and thinking about the conditions under which we think best and trying to bring them about. Indeed, the mental rehearsal of sentences may be the primary means by which our own thoughts are able to become objects of further attention and reflection. The key claim is that linguistic formulation makes complex thoughts available to processes of mental attention, and that this, in turn, opens them up to a range of further mental operations. It enables us, for example, to pick out different elements of complex thoughts and to scrutinise each in turn. It enables us to 'stabilise' very abstract, difficult or elusive ideas in working memory. And it enables us to inspect and criticise our own reasoning in ways that no other representational modality allows.

But how does public language get to *be there* in the first place? What story does Clark tell about private language and the relationship between the private and the public? Clark does not address these questions directly, but it is possible to infer his view on the nature of private language from what he says about how public language comes to be able to play its role as scaffolding for the mind. The answer to that, he says,

must lie in the more mundane (and temporally antecedent) role of language as an instrument of communication. In order to function as an efficient instrument of communication, public language will have been molded into a code

well suited to the kinds of interpersonal exchange in which ideas are presented, inspected, and subsequently criticised. And this in turn involves the development of a type of code that minimizes contextuality (most words retain essentially the same readings in the different sentences in which they occur) ... (Clark, 1997, p. 210).

More specifically, the linguistic code facilitates second-order cognition by allowing our thoughts to be frozen ‘in the memorable, context-resistant, modality-transcending format of a sentence’, whereby we

create a special kind of mental object—an object that is amenable to scrutiny from multiple cognitive angles, is not doomed to alter or change every time we are exposed to new inputs or information, and fixes the ideas at a high level of abstraction from the idiosyncratic details of their proximal origins in sensory input. Such a mental object is, I suggest, ideally suited to figure in the evaluative, critical and tightly focused operations distinctive of second-order cognition (Clark, 1997, p. 210).

So, ultimately, it seems that Clark would underpin his ideas about public language as a tool with the classical, codist view of private language. This, I want to argue, is an important weakness in his position, both *per se* and because of its implications for his general ideas about the mind. In order to show why it is a weakness I shall first try to deconstruct the language-as-code idea and to say something about where it comes from and why it might seem superficially plausible, even compelling.

7. Languages as codes

The idea of languages as codes is the core of the language myth. But what is mythical about the language myth? What is wrong with the code idea?

One set of problems with it, when imported into serious academic discourse, cluster round the difficulty of deciding just how it is to be taken and what its limitations are understood to be. For everyday linguistic experience tells us that there *are* limitations—that a pinch, at least, of salt is called for. To start with, it is far from clear just what role a language-as-code plays in linguistic interpretation. Take, for a simple instance, the opening sentences of Clark’s last chapter:

The swimming capacities of many fishes, such as dolphins and bluefin tuna, are staggering. These aquatic beings far outperform anything that nautical science has so far produced. Such fish are mavericks of maneuverability and, it seems, paradoxes of propulsion (Clark, 1997, p. 219).

What exactly is the linguistic code in play here? Some who might consider themselves, broadly, to be users of the same code as Clark will find, if not difficulties of interpretation, then at any rate that their interpretation is in some places guided by something other than or additional to the code. For instance, some non-American

readers may need to know that *maneuverability* is a spelling of *manoeuvrability* (non-American readers who cannot spell may not notice the difference). That is trivial.

Slightly less trivial is that, according to what for expository purposes I shall refer to as *my* code, tuna (bluefin or other) have no swimming capacities at all, let alone staggering ones. That is because, for me, the word *tuna* refers exclusively to the flesh, as canned (in my code, tinned) and marketed for food, of beasts which in their live state I call *tunny* (-*fish*). On the other hand, I am aware that the tinned (canned) flesh is known as tuna because that is what the live fish itself is called in those parts of the world where it is exploited in this way. But this seems less like information given *by* any linguistic ‘code’ that might be held to be operative here, either Clark’s or mine, than information *about* linguistic codes.

Just a little less trivial still is working out what to make of ‘fishes’ in the first line. If asked what (my version of) the English code lays down, I would have to say that a dolphin is not a fish. On the other hand, I know that there is an archaic usage according to which all sorts of denizens of the deep other than members of the class *Pisces* count as fishes. My judgement as to whether or not Clark intended this archaism is partly bound up with the significance I attach to the switch from ‘fishes’ in line one to ‘fish’ in line three. There are several possibilities. One is that for Clark the two forms are in free variation as plurals of *fish*, and that either no contrast was intended between them at all, or that if there was, the change is for change’s sake—would-be elegant avoidance of repetition, perhaps. A second possibility is that, for Clark as for me, there is a distinction between *fish* (pl.) and *fishes*, turning on whether what is in question is a number of individual organisms or a number of species. So if you have two koi and five common goldfish in your pond, you have seven fish, but two fishes. On this reading Clark may be drawing a delicate distinction between focusing in his first sentence on types (‘fishes’), but moments later, when what is at issue is their power of manoeuvre, thinking of the creatures as individuals (‘fish’). As against that, I recognise that the semantic differentiation of the two plural forms need not apply in all contexts or at all periods in the history of the language. When the biblical multitude was fed, according to the Authorised Version, with five loaves and two fishes, I do not suppose that the translators were concerned to specify that the fish (however many fish there were) belonged to two different species. In fact I take the current distinction between the two plurals to be a latter-day innovation introduced by, and primarily intended for the purposes of, modern zoologists. So the somewhat old-fashioned air of ‘fishes’, as a general plural form, would sit appropriately with a parlance that allowed dolphins to count as fishes. But still, this sudden lurch into archaisms of diction hardly seems called for, given Clark’s overall context and purposes.

Having said all that, I am fairly confident that I know how to interpret the *fish/fishes* enigma. My guess is (i) that although Clark might in general acknowledge the zoologist’s distinction between the two plural forms, the alternation between them here is semantically inoperative and without significance, and (ii) that the apparent implication that dolphins are fish or fishes is a simple slip—the chapter is mostly about what in deference to Clark’s code I am willing to call tuna (in fact, the main reference is to robot tuna), and the introductory mention of dolphins was

probably inserted at a late stage in drafting, the consequent desirability of changing the immediately preceding ‘fishes’ being overlooked. But I have arrived at this understanding, for better or worse, not by interpreting a linguistic code, but rather, by using my knowledge *about* certain alleged codes to supplement the knowledge of many other kinds that I bring to bear on grasping the situated intentions of a particular writer.

Another linguistic curiosity to do with matters aquatic comes up a few pages later:

To speak of the ability to build a boat is to use a simple phrase to ascribe a panoply of skills whose cognitive and physical underpinnings vary greatly. The unity exists only insofar as that particular grab bag of cognitive and physical skills has special significance for a community of seafaring agents (p. 226).

Leaving aside the mild jolt this passage causes by apparently inviting the inference that boats are only used on seas, the phrase ‘seafaring agents’ is worthy of comment. In so far as I would concede that it figures in my linguistic code at all, its reference would be, perhaps, to persons who work in a waterfront office signing up mariners for voyages. But that is not what Clark intends at all. ‘Seafaring agent’ here simply means ‘one who seafares’ (is that verb in anyone’s code?), i.e. ‘seafarer’. Now I for one would, I think, be no more inclined to refer to seafarers as ‘seafaring agents’ than to bus-conductors as ‘bus-conducting agents’. However, I have no difficulty in understanding what Clark is up to. His intention was to find a form of words that subtly reminds us that, in this context, seafarers are not or not solely to be considered in the full glory of their human purposiveness, but as biological organisms. But far from being given to me in advance by the (our?) linguistic code, it is only through reading texts like Clark’s that I have come to be acquainted with this usage. Am I using the code Clark and I supposedly share to understand his text, or, on the contrary, is it by virtue of understanding his text (in so far as I do) that I come to know something about his linguistic ‘code’?

The purpose of this philologico-literary excursus is not to split linguistic hairs, still less to cast aspersions on the language of Clark’s beautifully written book. The aim is to focus attention on the question what exactly is meant by calling a language a code, given that successful communication by means of language often seems to involve working round, rather than with, the alleged deliverances of the alleged code.

Approaching the problem from a somewhat different starting-point, it seems that taking the code idea anything like seriously requires an unwontedly upbeat, sanguine view of the human predicament when it comes to linguistic communication. The notion that a language is a code goes hand in hand with a breezy assumption that using the code is unproblematic, or at any rate, with a primary focus on the *successful* use of language. Indeed, Clark talks of the code as having been moulded ‘in order to function as an efficient instrument of communication’. But we surely encounter the manifold inefficiencies of the would-be code on a daily basis. ‘What did you say?’, ‘what do you mean?’ are hardly rare or exotic metalinguistic questions. Many difficult but important texts (e.g. religious or legal) have complex traditions of exegetical study devoted to them. There is, for instance, a whole institutionalised branch of

juridical endeavour known as ‘statutory interpretation’ whose very existence is inexplicable if a language is a communicationally efficient code (see Love, 1985; Toolan, 2002).

I happened to be thinking about these matters against the background of the Hutton Inquiry hearings into the death of David Kelly.³ Of course a great many forensic disputes involve quarrelling about words and the meanings of words. What is fascinating about Hutton is not just that points of linguistic interest cropped up during the investigation—which is par for the course—but that most of the matters being inquired into were themselves intrinsically linguistic in nature. From start to finish it was an inquiry into uses (and abuses) of language. I shall mention just two salient points of detail.

One concerns the now notorious English phrasal verb *to sex up*. The whole point of this verb, in this context, is precisely that it has no fixed value in the English ‘code’. Of course, it can be given a lexicographical gloss: ‘to enhance or embellish so as to make more exciting’ is what it means (here). Doing this to the British government’s dossier on Iraq was perceived as a bad thing. But the point of ‘sexing up’, for journalist Andrew Gilligan’s purposes, was that because it was his own colourfully creative usage there were no antecedently given criteria for telling what would constitute an instance of it. That description could apply to anything from wholesale radical interference with the dossier to omitting a ‘perhaps’ or changing a ‘might’ to a ‘may’. The beauty of ‘sexing up’ is that while strongly inviting the inference of significant or even drastic falsification, when the rather banal facts emerge as to what actually happened to the dossier as it went through successive drafts, it is open to Gilligan to claim that that is all he meant by ‘sexing up’ in the first place.

Another salient point from Hutton concerns the use of the word *source*. There are two clearly distinct senses in which Kelly may or may not have been Gilligan’s ‘source’. Trivially, he may have been the person Gilligan refers to as his source, and the only relevant person Gilligan spoke to around the relevant time, irrespective of what Kelly said to him. But in the substantive sense, Kelly is only Gilligan’s source if he actually made the contentious allegations Gilligan reported his source as making. Now, when it came to the prospect of outing Kelly to use him as a weapon in its battle with the BBC, the Government found itself in a logical cleft stick. Kelly was only going to be of use for this purpose if he was *not* the source in the substantive sense. On the other hand, the public-interest justification for exposing him only applied if he *was* the source in the substantive sense. The way out of this dilemma was to equivocate between the two senses of ‘source’. At an early stage it became very probable that Kelly *was* Gilligan’s source in the trivial sense; and this point was used, whether intentionally or not, to obfuscate the fact that it did not necessarily follow that he was the source in the substantive sense.

The point I want to make with this diversion into recent political drama is simply that the various kinds of logomachy that the Hutton Inquiry was all about would

³ A British civil servant whose death in contentious circumstances on 17 or 18 July 2003 precipitated a judicial inquiry. For full details go to www.the-hutton-inquiry.org.uk, starting from (and, if you want no more than an outline sketch of the issues, ending with)/content/transcripts/hearing-trans01.htm.

not be possible if a language really was a code, at any rate on any straightforward interpretation of that claim.

A much more fundamental question about the code idea is this. When we speak of a linguistic code, whatever we may mean by that precisely, we are using ‘code’ in the sense of ‘cipher’ (and not in the sense of, say, a formally drawn-up body, or ‘code’, of rules). And the idea of a cipher is the idea of information or material in one form being systematically converted into a representation in another form. *X* is encoded as *Y*, and later decoded as *X*. But what is it that language, as a code, encodes? What is the non-linguistic material or information for which a language provides an alternative representation?

It is tempting to suppose that the answer must be ‘thoughts’, or ‘ideas’. But can we identify a realm of non-linguistic thoughts or ideas that language encodes? ⁴ Suppose I see in front of me a scene that prompts me to say ‘there’s a pig in the garden’. Among the multifarious non-linguistic mental happenings or processes that attend my seeing this scene, which is the one that the linguistic utterance represents or expresses or corresponds to? It certainly seems obvious that there are indefinitely many different visual scenes about which ‘there’s a pig in the garden’ would be a sensible thing to say; and conversely, that there are indefinitely many utterances that would be à propos as remarks to make when confronted with the scene in question. Far from merely encoding some entity that already exists in non-linguistic form, the utterance seems to belong to and to make manifest a cognitive dimension that is *sui generis*. This is borne out by the difficulty we have in even conceiving what it might be to identify a non- or pre-linguistic ‘idea’ or ‘thought’, except by representing it verbally. ‘There’s a pig in the garden’ expresses the thought that there’s a pig in the garden. But are there two separate items here, the thought that there’s a pig in the garden, and the utterance ‘there’s a pig in the garden’? Of course, one can silently articulate the words to oneself, but a thought is not just a silent articulation. More on this later. ⁵

8. The identifiability of linguistic units

Somewhere near the root of the language-as-code notion is the idea that when I produce an utterance there is some definite linguistic entity over and above my utter-

⁴ Pace Sutton (2004), I do not raise this question specifically in connection with, or opposition to, any position taken by either Clark in particular or proponents of distributed cognition in general. The idea that linguistic expressions encode thoughts or ideas is far more widespread than that, being more or less a piece of commonsensical folklore.

⁵ Ross, in his contribution to this issue of *Language Sciences*, speaks of human languages as encoding ‘information’. ‘Information’ here may or may not be intended to refer to something different from ‘thoughts’ or ‘ideas’: I am unable satisfactorily to decode the word. But the same question arises: is it possible to conceive of this ‘information’ as existing, prior to its linguistic encoding, in the form of something non-linguistic? The fact that in very simple cases we may be inclined to think that there are straightforward non-linguistic analogues of the ‘content’ of certain linguistic ‘messages’ would hardly justify an across-the-board application of the code idea.

ance itself, of which the utterance is a repeatable instance. This idea ultimately derives from the ease with which the possibility of repetition conduces to reifying a repetitum. So an utterance comes to be seen as an utterance *of* an abstract linguistic unit of some kind; and it is this abstract linguistic unit, not the concrete utterance itself, that constitutes the relevant item in the linguistic code. This is another way of making the point that the notion of a linguistic code appeals to the idea of items that remain the same despite differences in their instantiations in different mouths (and minds), at different times and places.

This sounds like common sense, and is supported by a variety of taken-for-granted, everyday metalinguistic practices. [buʔə], [bʌdəʃ], [bʌtə], [bʌʔəʃ], [bʌdə] are all readily recognisable as regional variants of the same English word. If I say ‘in the beginning God created the Heaven and the Earth’ I will readily be taken to have said the same thing as anyone who reads out the first sentence of the Authorised Version. When someone asks ‘what does *haemorrhage* mean?’ we do not doubt that there *is* such a word, and that our questioner has successfully identified and individuated it by means of the phonetically unique utterance that constitutes his question. ‘How many different words does your three-year-old know?’ strikes us as a sensible query; if we are not in ready possession of the answer it is not because we do not know, or think we know, how to individuate words or to analyse utterances in terms of the words they instantiate. (Although if we are of a pedantic turn of mind we might conceivably wonder which of the linguist’s many different concepts of the ‘word’ is in play here—e.g. do *cat* and *cats* count as two words or different forms of one word?) In short, for many everyday purposes we act as if there were little room for doubt how to identify and individuate the abstractions instantiated by our utterances.

What is interesting is how easy it is to shake this conviction, and how unmoved we are as a result. Suppose I change the *butter*-example and ask whether American [əˈluːmɪnɪəm] and non-American [æljʊˈmɪnjəm] are the ‘same’ word. Now we are confronted not just by different pronunciations, but different spellings too, and that seems—significantly—to make the matter more dubious. And if we move beyond words to higher-level linguistic units, such as the sentence, our intuitions about ‘sameness’ become altogether less clear. Is *I didn’t leave because I was angry* when it means ‘because I was angry I didn’t leave’ the same sentence as *I didn’t leave because I was angry* when it means ‘it wasn’t because I was angry that I left’? They certainly have very different meanings and, in speech, different intonation patterns. But they are written the same way, and that gives us pause.

Rather different questions about unit-identity and unit-identification arise if we ask, for instance, whether *croissant* as uttered in an English-speaking context is a French word momentarily intruding into English (i.e. not a unit of English at all, but of French) or see it as an English loan from French (i.e. a different unit in a different linguistic system from the French one). Are there two words spelt c-r-o-i-s-s-a-n-t, one French, one English, or just one? And if we decide that English has ‘borrowed’ the French word, does that mean that *croissant* has cloned itself? (What, exactly, does *that* process involve?) Or what if we ask whether the English-acquiring child who says [ʌgəʃgəʃ], meaning (apparently) ‘helicopter’ or, at a later stage,

‘[dewibu]’, meaning (apparently) ‘telephone’, can actually be said to be uttering the English words *helicopter* and *telephone*? Certainly many linguists would be inclined to count these as the child’s versions of those words.⁶ But arguably, the most the child could be said to be doing is *attempting* to pronounce them. Does the mere attempt count as the deed itself? If generalised, that line of thought would threaten to usher in a very strange concept of wordhood and word-identity. Or, third, suppose someone asks me ‘how do you spell the English word [nait]?’. In one sense there is no English word [nait]. There are two words [nait], and unless I know which one you mean I cannot tell you how to spell it.

What is—perhaps—interesting about this last case is that I do not find myself at all perturbed by the fact that my interlocutor is deploying a quite different concept of ‘word’ from that according to which there are two words [nait] in English, although that of course is what precludes my giving an immediate answer to his question. Nor do I chide him for confronting me with the metalinguistic conundrum of a third word [nait] alongside k-n-i-g-h-t and n-i-g-h-t—namely the phonological form itself as neutral between the armour word and the darkness word. For the fact is, there are no obvious limits to the ways and senses in which we can employ locutions like ‘the word *X*’, or ‘the sentence *Y*’, because the contexts in which we talk about linguistic objects in everyday metalinguistic discourse are not such as to demand consistency or systematicity, and because our use of such locutions is not controlled by the requirement that it conform or answer to some set of objective facts. We have no purposes that necessitate a thoroughgoing, self-consistent reification of a whole language. We may be inclined vaguely to conceive of our language as made up of determinately reified linguistic entities, but this conception happily co-exists in our minds with any amount of banal evidence to the contrary. That it is indeed just a conception we entertain, rather than some sort of objectively given reality, is shown by the fact that when they reach the point beyond which laymen have no reason to pursue the systematic identification and individuation of linguistic units, linguists themselves are unable to go further—there is no context-neutral *fact* of such matters as whether *aluminum* and *aluminium* are or are not the ‘same’ word, or whether an utterance [ʌgəgʌgə] is or is not an utterance of *helicopter*, that it is the linguist’s professional privilege to discover and divulge.

These are simple, perhaps simple-minded, points. But it is hard to make sense of the idea of a code if it turns out to be impossible to identify unambiguously the operative units of which the code allegedly consists.

9. The role of writing

It is interesting that many of Clark’s examples of the use of public language as a tool involve written language, because the co-existence in literate communities of

⁶ See Smith, 1973, whence these examples, for an account of a child’s acquisition of English phonology based on the assumption that the child’s utterances at all stages are to be taken as utterances of adult words, the words in question being identified by citing phonetic forms in many cases very different from what the child produces.

speech and writing is a key factor in the commonsense plausibility of the code idea. But Clark says nothing about the relation between writing and speech.

When it comes to treating a language as a consistently identifiable set of recurrent ‘sames’, the problem is that there are indefinitely many dimensions in which one thing may be deemed the same as, or different from, another. So long as language is oro-aural only, it has to be doubted whether this problem is soluble at all, at any rate in any thoroughgoing or comprehensive way. (No non- or pre-literate culture is known that has anything remotely like the concertedly articulated discourse about linguistic units that in its academic manifestation we call ‘linguistics’.) Writing (and I am talking specifically about orthographic⁷ alphabetic writing) offers a partial but crucially important solution, by providing spoken language with a systematic counterpart in a medium that has built into it a readily apprehensible dimension of sameness.

The point is that there is nothing in speech that corresponds to the sense in which if I write *butter* (as opposed to any of the possible phonetic transcriptions), and then write *butter*, it is guaranteed that I have written the same thing twice. The sameness in question is secured by the fact that writing involves the deployment of a finite set of graphic units explicitly learned as such by apprentice writers and readers. The letters may have indefinitely many variant shapes, but the Roman alphabet (as ordinarily used by English writer–readers) has just 26 of them; and reading a piece of writing, in graphically difficult cases, may ultimately come down to making out which letters have been used. At any rate, if you can read it at all, you can analyse it in this way. Two instances of any letter or sequence of letters are therefore bound to be the same in respect of their composition out of units of the system; and this fact can be exploited, if anyone chooses, to imply corresponding samenesses among whatever written forms may be taken to represent. Speech does not work like this: learning to speak does not require the preliminary learning of a finite set of phonic units, which are then strung together to form utterances (although the classical linguist’s concept of the ‘phoneme’ may perhaps be understood as an attempt to suggest otherwise). So if speech, unlike alphabetic writing, is not built out of determinate units, could not the required unit-determinacy be imported from writing, by in effect apprehending spoken utterances as utterances *of* written forms?⁸ If I can get you to understand that the inscription *butter* answers to some range of potential or actual English utterances, however many and gross the phonetic variations may be, I have automatically established a dimension in which those utterances are the same. They are the same in that they all correspond to that determinately identifiable written form.

⁷ That is, using an established standard spelling system. It is interesting, and not irrelevant to the argument, that in alphabet-using cultures ‘orthography’ in this sense sooner or later becomes a requirement failure to fulfil which is liable to incur social penalties of a severity inexplicable by reference to the mere functional usefulness of conforming to prescribed writing norms. Unbridled heterography, it seems, poses a threat to something that such cultures hold dear. It is tempting to speculate that this something is the role of writing in underpinning the Western language myth.

⁸ See Harris, 1980 pp. 6 ff. for discussion of the ‘scriptism’ endemic to modern linguistics.

There is little doubt that acquaintance with the practice of writing, in its role as a communicational analogue of speech, is the basis for any attempt at a systematic articulation of the recurrent invariants of which a language is held to consist, and hence the basis for the language-as-code idea. It is an idea about language and languages hard to imagine occurring to a community that knows nothing of writing. Moreover, the very fact that what is said can be written down and, conversely, that what is written can be read aloud, fosters the idea that spoken and written counterparts instantiate some third thing, more abstract than either of them—i.e. the item(s) in the medium-neutral code itself. But that does not make it true that a language, whether spoken or written, just *is* a code.

10. Conclusion

The first moral is that when Clark's story about second-order cognition—that it depends on the power of the linguistic code to abstract and fix our thoughts—is revisited in the light of a critical scrutiny of the language-as-code idea itself, it leads directly back to the very notion of the mind that he is concerned to get away from. If instead of taking the code for granted and proceeding immediately to consider its functions we start by considering the code itself, we see that it is not because a language is a code that we are enabled to reify our thoughts. Rather, it is because (with the crucial aid of writing) we reify our utterances—treat them as instances of more abstract entities—that we (think we) develop a code. And because we (think we) have developed a code, we become inclined to identify as our 'thoughts' the allegedly fixed semantic content that our utterances, actual or potential, allegedly encode, and then to think of our minds as, among other things, repositories of those thoughts. Just this is what is meant by saying that the classical view of language underpins the classical view of mind. In this respect, the integrationist critique of the classical view of language allows the deconstruction of (a fundamental component of) the classical view of mind.

The chief bugbear here is the idea that 'linguiform' thoughts (e.g. 'there's a pig in the garden') are distinct and separable from their linguistic 'encoding'.⁹ There seems no reason to believe this; and Clark's further remarks on second-order cognition tend to reinforce our doubts. Once embalmed or marmorealised in the code, says Clark, our thoughts become amenable to the 'evaluative, critical and tightly-focused operations distinctive of second-order cognition'. But are these operations on our *thoughts* or on our *language*? Is there any essential difference between these operations as repeatedly applied by me to what I have written here and as applied by me to, say, a student's essay? While it might conceivably make sense to say of myself that I have access to two different things—my thoughts on the one hand, and the language in which I clothe them on the other—it hardly seems possible to make this dif-

⁹ It should perhaps be stressed that to make this point is not to claim that we think 'in language'. See O'Brien and Opie, 2002; Slezak, 2002, for some recent discussion.

ferentiation in respect of the language/thoughts of someone else. Nonetheless, I seem to be able to perform the same kind of second-order cognitive operations on someone else's language/thoughts. (But then, maybe the essential idea behind Clark's careful use of the expression *public* language is that people who use the same bits of public language are thereby guaranteed to have the same corresponding thoughts. That would be to subscribe to the very essence of the language myth.)

Where is the line supposed to run between linguiform thoughts and their linguistic expression? Suppose I decide that I am wrong about its being a pig in the garden, and that in fact it is a warthog. I thought it was a pig, then I changed my mind. Am I correcting my thought, or my linguistic description, or both?

According to the integrationist, there is no fixed, definite 'thought' that corresponds to 'there's a pig in the garden'. (For just one thing, there may be many English-speakers for whom *pig* includes, or may include, the meaning 'warthog'.) Nor is there any determinately identifiable linguistic entity instantiated by that particular inscription.¹⁰ (Is *there's a pig in the garden* a different unit of English from *there is a pig in the garden*? Is *there's a pig in the garden* as uttered with normal calm statement intonation a different unit of English from *there's a pig in the garden* as uttered with the sustained high pitch that might indicate an incredulous warning? Where are the answers to such questions to come from? If anyone is inclined to say 'yes' in the first case, but 'no' in the second, is there any better reason for that than the fact that our normal writing happens systematically to indicate a difference in the first case but not in the second?).

The ultimate basis for the illusion that languages are codes is (i) our inclination to treat unique utterances as things that can be talked about, (ii) the fact that we then find there is no way of citing them in order to talk about them except by repeating them, (iii) the fact that we then interpret the possibility of repetition as conjuring into existence something more abstract than either utterance itself—namely, the enduring linguistic unit that both utterances are taken to be utterances of.

If that is so, giving any general account of what it is to cognise 'private language' is clearly going to be a conceptually tricky enterprise. Given his context and purposes, no doubt Clark was wise to set it aside. But it seems clear enough that the

¹⁰ Ross (2004) concedes indeterminacy of meanings while for some reason assuming determinacy (the determinate identification) of forms. 'I do not know whether I mean quite the same thing as you do when I use the English word "democracy" ... The digital character of our signalling system, however, locks us into a tacit agreement to try to coordinate our respective conceptions around this particular fixpoint of the system'. But whether or not I am inclined to count you as having used a particular word at all may depend, among other things, on what I understand you to mean. If as a Frenchman you (appear to) use the English verb *ignore* in a context where you appear to mean 'to be ignorant of', I may decide that you are not using the English verb at all, but a phonetically and morphologically anglicised version of the French verb *ignorer*. When, in the traditional Church of England marriage service, the priest says to the betrothed couple: 'I require and charge you both, as ye shall answer it on the last dreadful day of judgement, when the secrets of all hearts shall be disclosed, that if either of you know any cause why ye may not lawfully be joined together in holy matrimony, ye do now confess it ...', is *require* here the Modern English verb used in an archaic way, or an Early Modern English verb that no longer exists? The point is that, for purposes of serious inquiry into language, there is something amiss with a conceptualisation of linguistic phenomena that allows such questions to arise.

account promoted by the classical view of language will not do, either in itself or as part of a more general inquiry into human cognition.

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