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Are languages digital codes?

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Abstract

Language use is commonly understood to involve digital signalling, which imposes certain constraints and restrictions on linguistic communication. Two papers by Ross [Ross, D., 2004. Metalinguistic signalling for coordination amongst social agents. Language Sciences 26, 621–642; Ross, D., this issue. *H. sapiens* as ecologically special: what does language contribute? Language Sciences 29] are discussed in this connection. It is evident that the particular limitations of digital language that Ross is interested in depend on the claim not just that language is (partly) digital but that *languages* are digital *codes*. But it is questionable whether languages are codes at all. The idea that they are may derive some force from the fact that the most commonplace and familiar semiotic devices we call 'codes' are digital in character. If codes are digital and linguistic units are in some sense or degree digital, that may explain the temptation to think of languages as digital codes. But closer examination of the digitality of linguistic units offers no support for the digital-code idea, for language use, it is argued, is in its essence fundamentally analogical.

Keywords: Carr, P.; Dennett, D.; Digital code; Distributed cognition; Language and cognition; Ross, D.; Semiology

1. Introduction

Language is bound to be a focus of intense interest in any attempt to understand human cognition. It is a trite truism that the fact that the cognitive abilities of *Homo sapiens* outrun those of other species and are in certain respects unique is connected in some way with

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the fact that *Homo sapiens* uses language. But exactly *what* it is that language does for us, and how it does it, are questions to which there are no agreed answers.

The general issue of 'language and cognition' may be at once separated into two questions or clusters of questions: (i) how we cognise[1] language and (ii) how language facilitates certain cognitive powers distinctive of human beings. Underlying both, of course, is the prior question how language itself is to be conceptualised. Not only does that question have priority, I think that trying to answer it may illuminate the other two. I shall approach it here via an analysis of the proposition that languages are *digital codes*.

2. Language and digitality

Communication by means of language is commonly understood to involve the deployment and interpretation of signals that are *discrete*, *arbitrary* and *systematically combinable*. 'Discrete' here implies e.g. that 'communication' in the previous sentence is analysable as an instance of the English word *communication* as distinct from the French word *communication* or the English words *communion*, *community*, *commutation* and other items it might in certain circumstances be confused with. Whereas in contrast the difference between the non- or quasi-verbal utterances representable as 'mm', 'mmmmm', 'hmm' etc. is non-discrete: despite the fact that these may have different and readily differentiable meanings, there is no determinate analysis available to settle the question whether we have three distinct units of the signalling system or instances of a single unit capable of continuous variation in one or more dimensions. (That indeed is why there is doubt whether to count such utterances as verbal.) 'Arbitrary' makes the familiar Saussurean point that there is ultimately no intrinsic reason why e.g. a word meaning 'communication' should take that form.[2] 'Combinable' has already been adequately illustrated by (what would standardly be taken as) the various instances so far of the word *communication*: the main contrast here is with signals that are 'semantic isolates – waving a hand, or a handkerchief or a newspaper to attract someone's attention for example, is perfectly meaningful, but it is not integrated in any structured way with comparable signals' (Harris, 1984, p. 132).

Discreteness, arbitrariness and systematic combinability are the three main characteristics that decisively set off *digital* from *analog* signalling. If I am in pain I may grunt and groan. If I am in extreme pain I may shout and scream. These signals are neither discrete nor arbitrary. Grunting and groaning, like shouting and screaming, are not determinately distinct from each other,[3] and as signals they are universally used by all human beings with the same meaning or range of meanings. They may to a limited degree be combinable with other signals, but they are not systematically combinable.

The difference between shouting and screaming *vs* grunting and groaning signals the greater intensity of the pain. The higher pitch and greater loudness of the vocalisations iconically represents, or analogically models, the greater painfulness. But the semantic difference signalled by the difference between a mere groan and a piercing scream is a feature of the message as a whole. By contrast, digital signalling allows the separation of different semantic elements: one signal for pain, say, and another for the greater intensity. Just as

[1] As will be explained, 'cognise' here carries no Chomskyan implications.

[2] That is not to say that, taking its place in a web of synchronic analogies, it may not be 'relativement motivé' (de Saussure, 1922 [1916], p. 181).

[3] Any more than the two pairs are.