DISCUSSION NOTES

A reaction to Jackendoff's discussion note

PIETER A. M. SEUREN

Max Planck Institute for Psycholinguistics

It was with great pleasure that I read Ray Jackendoff's discussion note 'What is the human language faculty? Two views', published in *Language* 87.3.586–624 (September 2011). Since it was not presented as an ordinary article but as a 'discussion note', it seemed appropriate to ask the editors of *Language* to print a short reaction, meant to make a positive contribution to the discussion.

I do not go into all of the details of Jackendoff's analyses and arguments, with many of which I am happy to agree, but there is one basic aspect that I feel calls for comment, mainly for the sake of clarity. Jackendoff, correctly in my view, argues against Chomskyan minimalism, and especially against Merge as a basic operation in that theory. Yet something odd appears to have occurred in Jackendoff's treatment of the issue. On p. 599 he correctly points out that in orthodox Chomskyanism a generative grammar was never explicitly presented as a realist production model. Remembering the old days, he writes: 'When I was a graduate student in the 1960s, we were always taught that this has nothing to do with processing'—using the word *processing* but meaning *production processing*, as the text makes clear. Rather, the word was, a generative grammar should be looked upon as an 'abstract' characterization of speakers' competence, much in the way mathematicians characterize mathematical notions. Jackendoff draws a parallel (p. 599) with the inductive definition of rational numbers, based on Peano's axioms, as known in mathematics. Just as numbers are enumerated by an inductive system starting from a base, sentences are 'inductively' (we normally say 'algorithmically') enumerated by a grammatical rule system starting from an initial symbol. Here lies the origin of generative grammar, not in the empirical study of how humans produce and interpret utterances. Linguistic reality was thus relegated to mathematical reality, not to psychological, physiological, and social reality, which is where it belongs.

In fact, it would be absurd to claim realism for the various Chomskyan grammar models we have seen over the years, including minimalism. And Jackendoff rightly poses the question of the actual reality, if any, behind these models. Put bluntly, we want to know what the physiological correlates are of what we know as linguistic competence so that we may gain some understanding of how competence drives performance. There has been a great deal of beating about the bush with regard to this question, but Jackendoff takes the bull by the horns and asks (p. 599): 'What does this inductive definition have to do with how the brain actually PROCESSES language?' (emphasis mine).

Unfortunately, as Jackendoff will no doubt agree, it is proving very hard to make the brain yield its secrets. Linguists and psychologists, moreover, are on the whole not brain specialists, nor do brain specialists tend to have much linguistic or psychological knowledge, leaving aside a few precious exceptions. But even these have great difficulty tracing possible correlates between conscious actions and impressions on the one hand and brain processes on the other, let alone between psychologically or linguistically defined rule systems and brain structures. At the present stage, any quest for physiological correlates of language production and comprehension processes is bound to be seriously hamstrung, despite the sophisticated scanning machines now at our disposal. As a result, linguists and, to a certain extent, psychologists seek refuge in what I have

called (Seuren 2009:9) NONHARDWARE REALISM—that is, analyses and descriptions in terms that look as if they stand a better chance of being physiologically implemented than those formulated in terms taken from mathematical proof-theory. Clearly, there are no hard and fast standards for degrees of physiological implementability, but one can, to begin with, try to formulate overarching ARCHITECTURAL PRINCIPLES of the system envisaged in terms that conform to what is known from direct intuitive observation and experience or as a result of brain research. The extent to which enlightening, explanatory generalizations are found and formulated in terms of a given architecture will then be a sensible measure of the possible reality value of one's enterprise. In this context, Jackendoff proceeds to developing thoughts about a possible REALIST model of competence, still, however, considering the chance that Chomskyan Merge might play a role there—despite the fact that the very architecture of Chomskyan grammar models per se precludes any realist implementation, whether as a production or as a reception system. Utterances are not produced by pushing a start button, waiting for a semantically arbitrary result, and then sending the product to a semantic and a phonological department, jointly yielding a <meaning,form> pair. Nor is there any analogous reversal of such a system to describe utterance comprehension. The very architecture of such a system is unfit for any realistic interpretation. It is, therefore, not clear why Jackendoff still considers Merge worth discussing in realist terms.

Apart from this, however, when Jackendoff develops his own ideas of what a more realist theory of competence might look like, it quickly transpires (p. 600) that what he has in mind when speaking about 'competence' in realist terms is a cerebro-cognitive system in virtue of which HEARERS COMPREHEND and INTERPRET utterances produced by speakers. From now on, the term *processing* is taken in the sense in which it is commonly used in computational linguistics—that is, comprehension or interpretation. The sense of 'production processing' no longer plays a role. Jackendoff thus, suddenly and without warning, switches over to what appears to be an exclusively INTERPRETATIVE processing view of competence. The mechanism involved is a PARSER, taking utterances to the cognitive content intended and expressed by the speaker, not a sentence or utterance PRODUCER. As an illustration, let me quote from the fourth and fifth paragraphs on p. 600. Pleading in favor of a constraint-based, rather than a derivational, formalism, Jackendoff writes:

> [U]nlike a derivational formalism, a constraint-based formalism lends itself to a direct relation to theories of processing. The current consensus on sentence processing is that it is deeply 'incremental' or 'opportunistic': the processor uses whatever information is available at the moment, whether from phonology, syntax, semantics, or discourse or visual context, to build hypotheses about what is to come in the sentence and the sentence's likely interpretation … The competence theory then is a theory of what structures are possible in principle, and the performance theory is a theory of how those structures are built in real time, using the rules directly. Such an approach has been central to LFG parsers since Ford et al. 1982 …

I can only read this as saying, or at least implying, that what constitutes competence is adequate parsing ability on the part of the hearer, and I do feel that I must take issue with such a view. It seems to me that a strong argument, regardless of any specific theory or of any technical details, can be put up in favor of the view that linguistic competence is per se defined by a SPEAKER'S ability to PRODUCE utterances reflecting the speaker's semantic intentions in a form that satisfies the linguistic norms valid in any given society or social group for given interactional situations. The main reason for saying so is that hearers can, and often have no choice but to, make sense of garbled utterances either produced by a noncompetent speaker or damaged in the process of

transmission to the hearer's ears or the reader's eyes—provided these are in good order. I have, in the past, sometimes used the example of a nonnative speaker saying *Me no water in. Me no can swim*. Not only any competent speaker but also most noncompetent speakers of English will be able to make sense of such an utterance—that is, reduce it through some, probably ad hoc, parsing system to the speaker's intended meaning. Clearly, a speaker making such an utterance cannot be taken to be competent in English. But how about the hearer's competence? It would seem to me that a listener who adequately makes sense of such an utterance cannot be declared competent in English merely for that reason. The real test for competence in a language is to see whether a speaker (writer) is capable of putting intended meanings into linguistic form in a way that conforms to the language norms considered valid within any coherent group of speakers. The judges need not necessarily be fully competent speakers themselves, as one often recognizes perfect competence without being able to equal the same degree of perfection or genuineness—just like a music critic may well judge quality without being able to reach the same degree of mastery in his or her own performance. In language teaching, comprehension tests are useful, as they will help to achieve proper full competence, but they fail as competence tests in the sense in which the term is used in theoretical linguistics—that is, genuine, fully integrated mastery at all levels of a language or language variety, resulting from a language acquisition process guided by the language faculty.

This seems to me to be a basic point, in that theories aiming at a formal reconstruction of the semantic parsing processes gone through by comprehending listeners (readers) may in themselves be of great use in increasing our understanding of the phenomenon 'human language', but they fail, as a matter of principle, as theories of what has become known as linguistic competence. I have no doubt that UNIFICATION, for example, plays a central role in the listeners' parsing process, but I have difficulty accepting that any unification-based theory of linguistic structure will be up to the task of defining competence. If correct, this point will affect the status not only of a fair number of theories or approaches, especially those developed in the cognitivist school of linguistic thought, but also of Jackendoff's own design for a parallel architecture of linguistic competence.

It seems worthwhile to raise this issue, since it is usually glossed over in the literature with little or no comment. Jackendoff's discussion note shares this feature with most of the cognitivist literature but also, for example, with the widely quoted, decidedly noncognitivist 2002 article by Hauser, Chomsky, and Fitch in *Science*. An explicit discussion of this question will hopefully lead to greater clarity in this respect.

REFERENCES

FORD, MARILYN; JOAN BRESNAN; and RONALD M. KAPLAN. 1982. A competence-based theory of syntactic closure. *The mental representation of grammatical relations*, ed. by Joan Bresnan, 727–96. Cambridge, MA: MIT Press.

HAUSER, MARC D.; NOAM CHOMSKY; and W. TECUMSEH FITCH. 2002. The faculty of language: What is it, who has it, and how did it evolve? *Science* 298.1569–79.

SEUREN, PIETER A. M. 2009. *Language in cognition* (= *Language from within, vol. 1*). Oxford: Oxford University Press.