Psycholinguistic perspectives on grammatical representations

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What is the use of psycholinguistic evidence for the theoretical linguist? Looking at the vast majority of theoretical-linguistic studies on grammatical phenomena, the impression one will get is: not much. Even though theoretical linguists, including those working from the perspective of generative grammar, often pay lip service to the potential relevance of psycholinguistic evidence, in practice, studies of grammar hardly ever take results from psycholinguistic research into consideration. Chomsky (1981: 9) notes, for example, that while evidence from language acquisition, experimentation on language processing, and evidence from language deficits is relevant, *in principle*, to determining the properties of Universal Grammar and particular grammars, for some unspecified reason, evidence from these sources is 'insufficient to provide much insight concerning these problems', and that, therefore, the theoretical linguist is compelled to rely on grammar-internal considerations.

Against this background, the present paper makes some proposals of how to bridge the gap between psycholinguistic research and theories of grammatical knowledge. In the first part, I will set out some criteria psycholinguistic results should meet to be relevant for theories of grammar, and in the second part I will present three case studies, one from language acquisition, one from language processing, and one from language disorders to illustrate what the theoretical linguist can learn from psycholinguistic studies about the nature of grammars.

Some common ground is required for the psycholinguist and the theoretical linguist to be able to talk to each other. I suggest that the search for the most appropriate *mental representations* for language provides such common ground. From this perspective, a grammar of a particular language can be seen as a mental structure consisting of grammatical representations which are somehow manifested in a person's brain, and which describe what it means to know a language. Language acquisition research is concerned with *changes* of grammatical representations over time. Research into language processing examines how grammatical representations are constructed *in real time*, during the comprehension and production of language, and studies of language disorders posit *potential deficits* of grammatical representation. Clearly, each domain requires its own theories, but if psycholinguistic research and

theories of grammar focus on discovering the nature of mental representations of grammar, then the theory of grammar can potentially draw on evidence from all these sources of evidence.

It is proposed that results from psycholinguistics are evaluated against three criteria before they are used as evidence for grammatical representations. The first one asks whether a given empirical finding is supported by *converging evidence* from other sources. Any psycholinguistic experiment is in danger of producing artifacts, e.g. due to an experiment's specific task demands. One way round this problem is to produce evidence using different methods, to avoid uncertainties arising from weaknesses of individual techniques or from gaps in particular data sets. The second criterion concerns the role of *confounding factors*, the question of whether a given psycholinguistic finding can be explained in terms of performance factors such as working-memory limitations or more general constraints on cognitive resources. Syntactic dependencies, for example, may incur a processing cost, possibly increasing with distance, due to the fact that a dislocated element has to be held in working memory. The role of such factors needs to be assessed before any experimental finding can be taken as evidence for grammatical representations. The third criterion concerns the question of whether a given psycholinguistic finding supports a *specific theory* of grammar or whether it is compatible with different theoretical treatments.

Three case studies will be presented to examine the use of different kinds of psycholinguistic evidence for theories of grammatical representation. The first one examines contrasts between regular and irregular morphology in child language acquisition, with respect to theories of morphological representation (Clahsen et al. 2002). The second one presents results from processing experiments on word-order preferences, against the background of different syntactic theories of clause structure (Weyerts et al. 2002). The third case looks at language deficits in the domain of anaphor resolution, in the light of different theories of syntactic binding (Ring & Clahsen 2005).

We will conclude that psycholinguistic findings provide evidence that the theoretical linguist may find useful (along with other sources of evidence) in developing descriptive and theoretical analyses for a given set of phenomena. In addition, psycholinguistic results may even help to adjudicate between competing theoretical analyses. Clearly, however, it is rarely the case that psycholinguistic evidence uniquely favours one particular theoretical account and at the same time disconfirms all available alternatives.

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