

Interpretation of Dependencies by Aphasic Patients

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In a variety of studies previously reported in the literature, speakers who have been diagnosed as “agrammatic Broca’s aphasics” demonstrated a peculiar pattern of impaired comprehension. They have problems interpreting passive constructions, object relatives, D-linked object Wh-questions (Hickok and Avrutin 1996), pronouns in Principle B constructions (Grodzinsky et al 1993), etc. At the same time, in a number of on-line studies, these patients showed slower-than-normal priming effect and slowed lexical access. In addition, their abnormal speech production pattern is well-known: Broca’s aphasics (sometimes) omit functional categories and demonstrate effortful, slow, ‘telegraphic’ speech (for an extensive review see, for example, Grodzinsky 1999.)

While both production and comprehension patterns of these patients have received a significant amount of attention in psycholinguistic research, few, if any, attempts have been made to provide a coherent and unified explanation for all observed phenomena. Thus, researchers sometimes proposed a well-articulated theory of aberrant comprehension of passives and object relatives, but leave interpretation of pronouns aside; others focus on the abnormal omission of determiners, tense, complementizers (e.g. Friedmann 1999) without attempting to address the observed comprehension problems.

In this presentation, I will attempt to bring together several well-established results focusing, mostly, on the patients’ capacity to establish linguistic dependencies. The main claim of the chapter is that (at least with respect to the phenomena under discussion) the notion of ‘agrammatism’ is misleading. The observed errors, I will argue, do not result from the breakdown of the grammatical system *per se*; rather, the morphosyntactic machinery is weakened as a result of the brain damage (see also Avrutin 2006.) Reliance on morphosyntactic information while processing linguistic dependencies is just one possibility, although the one preferred in unimpaired speech. In principal, dependencies can be established at different levels: syntax, semantics, discourse, and even non-linguistically (for example deixis). When the morphosyntactic channel is weakened, as it is the case in aphasia, the relative hierarchy of economy is no longer the same as in unimpaired adult speakers. In other words, discourse dependencies, for example, that are normally blocked because of

economy hierarchy, may become available and active in Broca's aphasics comprehension. Dependencies between traces (copies) of the moved constituents and their antecedents, therefore, may be processed abnormally allowing for discourse prominence to play the decisive role in establishing reference. The two systems, syntax and discourse, I will argue, are in constant competition in Broca's aphasia, which results in the overall chance performance on those constructions where syntactic and discourse dependencies would lead to different interpretations. Similar reasoning applies to the interpretation of pronouns in Principle B constructions. Moreover, the account described in this chapter, makes a natural connection with the well-known problems with lexical access in these speakers. After all, the reason for the slow, weak syntax may well be the underlying problem with lexical access, as demonstrated in a variety of processing experiments. All in all, the chapter presents a model that is based on a competition between different sources of referential dependencies. The so-called 'agrammatic' Broca's aphasics are speakers whose syntactic apparatus is weakened and for whom non-syntactic (and sometimes even non-linguistic) dependencies may become at least equally economical. The competition between different systems results in the observed chance performance.

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