Retrieving antecedents with the grammar: c-command, D-type pronouns and $\varphi$-features

Since Reinhart 1976, it has often been claimed that bound variable pronouns are subject to a c-command requirement. This is not obviously the case, however (see Bach and Partee, 1980, et seq.), and was challenged recently by Barker 2012, who argued that bound pronouns must merely fall in the semantic scope of a binding quantifier, a configuration that does not always implicate syntactic c-command. In the processing literature, recent results have been advanced in support of c-command (Kush et al. 2015, Cunnings et al. 2015). However, none of these studies separates semantic scope from c-command. In this talk I will report the results of Moulton and Han (to appear) which show that when we put both c-commanding and non-c-commanding quantifiers on equal footing in their ability to scope over a pronoun, there is nonetheless a processing difference between the two. The results establish that c-command, not scope alone, is relevant for the processing of bound variables. In particular, the experimental findings show that co-varying but non-c-commanded pronouns (often called E-type or D-type pronouns) are processed without difficulty but do not exhibit gender mismatch effects (GMMEs) as c-commanded pronouns do. I propose an account of these results, along with other experimental findings, that combines an idea about the grammar (that variable binding encodes phi-features in a way suggested by Sudo 2012) and a well-motivated assumption about the processor (that antecedent retrieval relies on a content addressable memory, Lewis et al. 2006).