

Binding Invariants and Cognitive Primitives in Anaphor Resolution

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Mainstream cognitive models of nominal anaphor resolution envisage this process as a particular case of search optimization: The search space of working memory with antecedent candidates is "sectioned", each "section" contains the admissible antecedents for anaphors of different classes, and the resolution process for a given anaphor is restricted to a search for its antecedent in the "section" corresponding to its anaphoric class.

This specific sectioned-search emerges as the underlying procedure of anaphor resolution and implies significant empirical predictions: It implies that there should be "natural" classes of anaphors such that every anaphor in each such class has the same set of admissible antecedents; it further implies that these sets of admissible antecedents may stand only on a limited number of relations among each other for this specific search strategy to be effective.

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Given the current state of the art of the research on anaphora and grammatical constraints on anaphoric binding (aka binding principles), and abstracting away from possible technical differences of framework-driven formalization, four classes of anaphors have been identified: Short-distance reflexives (e.g. English *himself*, Norwegian *seg selve*), long-distance reflexives (e.g. Chinese *ziji*, Portuguese *ele próprio*), pronouns (e.g., English *he*, German *er*) and non-pronouns (e.g. English *the student*, Portuguese *o João*). These are empirically attested classes of anaphors known to satisfy the criterion pointed out above: Each binding class contains all and only the anaphors that have the same set of admissible antecedents whatever is the grammatical position in which they happen to occur.

The result we will argue for is that the four sets of admissible antecedents corresponding to these four classes, and in particular, the relations holding among them, do not conform to the predictions implied by the anaphor resolution procedure pointed out above.

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Despite possible differences in the systems of binding constraints of different languages, the relations holding among these four sets of admissible antecedents have appeared as an empirical invariant across natural languages (even if not every one of the four types anaphors can be found in every language). Accordingly, the result above casts important doubts that the sectioned-search may provide a correct, or at least a complete, justification for anaphor resolution and its constraints.

This cannot be seen as forcing the conclusion that cognitively rooted factors (such as attentional prominence possibly associated with recency of mention, just to refer an example) do not play an important role in anaphor resolution, at least as preference factors. If correct, this result shows that current cognitive models of anaphor resolution, crucially assuming the sectioned-search as a primitive, make predictions that are infirmed by the significant empirical generalizations embodied in the grammatical constraints on anaphoric binding.