

Generalising active gap-filling

A central issue in theories of sentence comprehension is the resolution of "long distance" dependencies. An example is the dependency between the fronted *wh*-phrase and its thematic direct object position in a sentence like "Which book did the teacher give to the student?". Experimental evidence across multiple methodologies indicates that human comprehenders construct these dependencies in a pro-active manner, in advance of bottom-up input that identifies the position of the missing argument ("active gap-filling", Fodor 1978). A challenge that remains outstanding is fitting these well-known experimental findings into computationally explicit models of sentence processing. Existing models provide a useful framework for understanding the online construction of structurally-local dependencies (e.g. canonical verb-argument dependencies), but are based on parsing algorithms for simple (context-free) phrase-structure grammars, and therefore cannot easily be extended to engage with the psycholinguistic work on long-distance dependencies. Attempts to bridge this divide have generally added specialised machinery that fails to generalise beyond the most familiar cases. In this talk, I will present a computationally explicit and implementable theory that addresses this challenge, and treats local and non-local dependencies in a unified manner. This proposal adapts core ideas from classical sentence processing models to less simplistic grammars, and correctly predicts some recent experimental findings comparing active gap-filling across verb-final and verb-medial languages.

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