

Representing the control of agreement in real-time

In English, a finite verb in present tense typically agrees with the noun phrase in subject position (1a). But a nearby noun phrase can sometimes wrest away control of agreement, in a phenomenon known as 'agreement attraction' (1b) (Jespersen, 1913; Bock & Miller, 1991; cf. Trollope, 1883).

- (1) (a) The path is/*are littered with bottles.
- (b) The path to the monuments is/??are littered with bottles.

This phenomenon is robustly reflected in production studies, but it also impacts judgments and processing difficulty in comprehension (Pearlmutter, Garnsey & Bock, 1999). In this talk, I'll discuss the alternative accounts of this phenomenon found in the syntactic and psycholinguistic literature. I'll first consider one of the most prominent claims, that the constituents of subject projection are combined in such a way, as to sometimes allow the subject projection to effectively be valued with the number of a noun other than its head (e.g., Eberhard, Cutting & Bock, 2005; den Dikken, 2001). Based on a series of six comprehension studies (self-paced reading and speeded grammaticality) which carefully compare individuals' responses to grammatical and ungrammatical sentences, I'll argue that subjects do not erroneously value the subject projection in comprehension, and that attractor nouns only impact reanalysis. In addition, these studies also examine a less well-studied configuration, in which subject-verb agreement within a relative clause seems to be sensitive to the number of the relative clause head (Kimball & Aissen, 1971):

- (2) (a) The runner that the driver sees/*see on her commute always waves.
- (b) The runners that the driver sees/see on her commute always wave.

Speakers of one dialect of English are claimed to allow plural verb forms to co-occur with singular subjects, if embedded within a plurally-headed relative clause (or inside other species of A'-chains). However the online processing profile of agreement in these relative clause configurations is found to be qualitatively and quantitatively similar to that observed in (1). Comparison of results across experiments and an analysis of individual responses suggests that the agreement pattern in (2b) is likely not dialectal, but reflects architectural properties of the real-time system.

Finally I'll provide some more recent evidence from online comprehension measures that the real-time structure building system does not treat agreement with the verb as a reliable indicator of subjecthood; and that it can, at least in principle, insulate the establishment of formal feature agreement from the establishment of thematic or grammatical roles.

In the latter part of the talk, I'll address how structure-sensitive feature tracking or feature search can be accomplished in real-time structure building. I will argue that agreement attraction in comprehension reflects the interaction between predictive structure building and cue-based retrieval processes, and show how it can be modeled in an associative memory. In conclusion, I'll discuss the broader implications of this research for understanding under what circumstances online processes are grammatically faithful.