

Subject encodings and retrieval interference

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Within a content-addressable memory approach to dependency formation [1,2], inherent properties of encodings may be used to access constituents directly, independent of the structured representation. Grammatically inappropriate encodings sharing retrieval cues may thus give rise to similarity-based interference. For instance, [3] found that Subject-verb attachment is more difficult when crossing a subject relative clause containing a lexically-filled subject position. Interference is attributed to a feature [+Subject] shared by the grammatically licensed subject and the intervening grammatically-inaccessible subject. However, theories of subject-hood make distinct predictions about which constituents might share subject-like properties. Subjects can be thought of as occupying particular phrase-structure positions [4] or being the most prominent member of argument structure [5]. The goal of this study is to test whether argument structure or positional information informs subject retrieval cues by looking at interference effects in constructions containing subjects in both nominal and clausal domains.

Syntactic research has identified parallels in the nominal and clausal domains [6,7,8], supporting a view that takes the possessor of a process nominalization (*the soldier's destruction of the village*) to be the subject of the nominal expression. Comparing nominalizations and tensed clauses, subjects differ in (i) domain of occurrence (clausal/nominal), and (ii) the Case assigner (Nom/Gen), but are both linked to the most prominent argument [9]. We tested whether the possessors in process nominalizations compete for subject-verb attachment in a self-paced reading experiment (n=40).

We crossed the position of the nominalization (Subj/Obj) with the presence of a possessor (Y/N) in a 2 x 2 design. Subject and verb were separated with a bi-clausal subject relative clause (RC) containing the nominalization as an argument of an embedded transitive verb (see materials). Lexical items were identical across conditions, modulo the possessor. Sentences with non-overt subjects served as control for depth of clausal embedding. Interference effects (increased RTs) were expected at the matrix predicate (*was mentioned*), if the possessor of a nominalization overlaps in the features contained by the retrieval cue. Nominalizations in the inaccessible embedded subject position led to increased reading times at the verb (linear mixed-effects model, +/- 21ms, MCMC p<.01), replicating [3]. However, there was no significant effect associated with the possessor. We conclude that cues for subject retrieval encode the structural domain in which the dependency is targeted.

In contrast to [3], studies of grammatical accuracy in anaphoric dependencies have suggested that grammatically-appropriate outcomes are achieved via ordered, structure-sensitive access mechanisms [10,11]. However, the properties of encodings that serve as cues for retrieval may yield grammatically appropriate outcomes, without ordered access, if cues are carefully chosen. To assess the viability of that approach, however, it is necessary to have a theory of how such cues may be identified and combined. Here we offer evidence that some, but not all, subject properties participate in retrieval for subject-verb attachment. In an on-going experiment, we are investigating ECM verbs to test whether subject retrieval cues contain information about Case in addition to position.

Materials

As predicted, the farmer who thought that ... [CONDITION]... was mentioned in the documents.

Nom:OBJ, Poss:NO ...the rebellion prompted the deliberate destruction of the village...

Nom:OBJ; Poss:YES ...the rebellion prompted the **soldier's** deliberate destruction of the village...

Nom:SUBJ, Poss:NO ...the deliberate destruction of the village prompted the rebellion...

Nom:SUBJ, Poss:YES ...the **enemy's** deliberate destruction of the village prompted the rebellion...

CONTROL ...the farmer who appears to have recorded the deliberate destruction of enemy village...

References

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