

Traceless relatives: Agrammatic comprehension of relative clauses with resumptive pronouns

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Abstract

Individuals with agrammatic aphasia fail to interpret reversible movement-derived sentences. According to the Trace Deletion Hypothesis, this impairment in comprehension results from the deletion of traces of phrasal movement. In order to test this hypothesis, we compared object relatives with a trace to identical object relatives that are not derived by syntactic movement and do not include a trace, but rather include a resumptive pronoun at the position of the embedded object. Five Hebrew-speaking individuals with agrammatism and 5 matched controls participated in this study. Comprehension was assessed using a binary sentence–picture matching task of 120 reversible relative clauses per participant, 40 subject relatives, 40 object relatives, and 40 object relatives with a resumptive pronoun. The comprehension of subject relatives was significantly above chance, but the comprehension of both types of object relative was at chance. Importantly, the insertion of a resumptive pronoun at the position of the trace did *not* improve comprehension. The comprehension of object relatives with resumptive pronouns was at chance, and not different from the comprehension of object relatives with traces. Two modifications for the Trace Deletion Hypothesis are considered: a more general deficit in thematic role assignment over an intervening argument, or a deficit in the construction of CP that results in failure to make the syntactic relation between the relative head above CP, the operator in CP and the embedded pronoun or trace within the relative clause.

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1. Introduction

Individuals with agrammatic aphasia fail to interpret certain movement-derived sentences such as object relatives, object clefts, topicalized structures, and object questions. Data from sentence–picture matching and grammaticality judgment tasks indicate that they do not know who did what to whom in reversible sentences when the theme noun phrase (NP) moves to a position before the agent. For example, when they encounter the sentence “Here is the girl that the grandmother drew.”, they fail to identify the agent, and do not know whether the girl drew the grandmother, or the grandmother drew the girl (Friedmann & Shapiro, 2003; Grodzinsky, 1984, 1989; Zurif & Caramazza, 1976; see Grodzinsky, Piñango, Zurif, & Drai, 1999, for a review).

The question of what these impaired structures have in common and what distinguishes them from the intact ones has intrigued many researchers over the years, and several accounts have been suggested for the source of the deficit in agrammatism. One account, the Trace Deletion Hypothesis (TDH) (Grodzinsky, 1990, 1995, 2000), suggested that the interpretation of sentences that are derived by movement of NPs is impaired due to the deletion of traces of movement of referential NPs. This theory accounts for the comprehension deficit in a wide range of noncanonical structures such as object relatives, referential Wh object questions, and topicalization structures, which all include traces of movement of referential NPs.²

However, this is not the only logical possibility to account for the deficit in these structures. These structures also share the need to transfer thematic roles (or establish a dependency) over another argument of the verb. In fact, they have something else in common: they all involve antecedents in high nodes of the syntactic tree (specifically, in Spec-CP). It is therefore also possible that the deficit is related to an inability to construct the syntactic tree up to its treetop, the CP node, that results in an inability to connect the antecedent and the trace.

The current study sought to test whether the deficit in the comprehension of relative clauses relates to trace deletion and a deficit in movement of phrases, or whether the other two possibilities are valid, namely a deficit in crossing another argument or in structures that include CP. This was done using a special type of relative clause that exists in some languages, including Hebrew: relative clauses with a resumptive pronoun at the position of the gap.

Object relatives with a resumptive pronoun resemble regular object relatives (with a trace) in everything, except for the fact that they include a pronoun instead of the trace within the relative clause. As seen in Fig. 1, which represents the syntactic tree of the two types of relative clauses (translated from Hebrew), the syntactic structure of object

²Movement-derived sentences that preserve the canonical order such as subject relatives and subject questions usually yield better performance. The Trace Deletion Hypothesis employs a non-structural strategy to account for the better performance on these sentences. The idea is that although subject relatives in English and Hebrew, for example, are derived by phrasal movement, they yield better performance because they keep the canonical order of an agent as the first NP and a theme as the second. When an NP remains role-less, the strategy assigns the role of an agent to the first NP in the clause. When the first NP is indeed an agent, the sentence is interpreted correctly (though not by the normal syntactic process). However, when a movement takes place and the first NP in the sentence is the theme, it incorrectly receives an agent role. If the sentence includes a real agent in addition to the NP that mistakenly received an agent role from the first-NP strategy (as is the case in object relatives), the hearer has to choose who the agent is, and is forced to guess (Grodzinsky, 1995, 2000).

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