Agrammatic sentence production: Is verb second impaired in Dutch? ☆

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Abstract

This study investigates effects of verb movement in nine Dutch-speaking agrammatic aphasics. According to linguistic theory, in verb second languages such as Dutch and German, the verb remains in its clause-final base position in embedded clauses, whereas it moves to second position in main clauses. In recent linguistic accounts of agrammatic sentence production, it has been suggested that the production of sentences with moved verbs is relatively difficult. However, we argue that evidence provided by previous studies on this matter is inconclusive. An experiment is reported in which the production of both types of clauses is compared. No evidence is found that sentences with moved verbs are relatively difficult to produce. In fact, there was a tendency for the base order sentences to be harder. Implications of these findings for theories of normal and agrammatic sentence production are discussed.
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1. Introduction

Word order is one of the most heavily researched variables in agrammatism. The majority of studies have focused on the comparison of sentences with a non-canonical order of arguments, such as passives, and their canonical counterparts, such as actives (e.g., for comprehension, see Caramazza, Capitani, Rey, & Berndt, 2001; Grodzinsky, Piñango, Zurif, & Drai, 1999; Schwartz, Linebarger, Saffran, & Pate, 1987; for production, see Caplan & Hanna, 1998; Faroqi-Shah & Thompson, 2003). An aspect of word order that has received much less attention is the positioning of the finite verb relative to its subject and object arguments in languages such as Dutch and German. However, in recent linguistic accounts of agrammatic production by Bastiaanse and

van Zonneveld (1998) and Friedmann and Grodzinsky (1997), phrased within the context of the generative tradition, this aspect plays a major role. Both groups of authors assume that sentences with verbs that have been moved from their base position—so-called verb second constructions—are difficult to produce compared to base order sentences. Support for this assumption comes from studies by Bastiaanse and van Zonneveld (1998) and Bastiaanse and Thompson (2003). However, as we will see, these studies do not provide conclusive evidence. In the present study, this matter is further investigated. We compared the production of sentences with the finite verb in different sentence positions, avoiding problems of previous studies on this topic. For a better understanding of the linguistic hypotheses, a short introduction on Dutch grammar is in order. This will be presented first.

According to the generative tradition, content words and grammatical morphemes are represented in various nodes in the syntactic tree (e.g., Chomsky, 1981, 1995). Finite verbs have to move from their base-generated
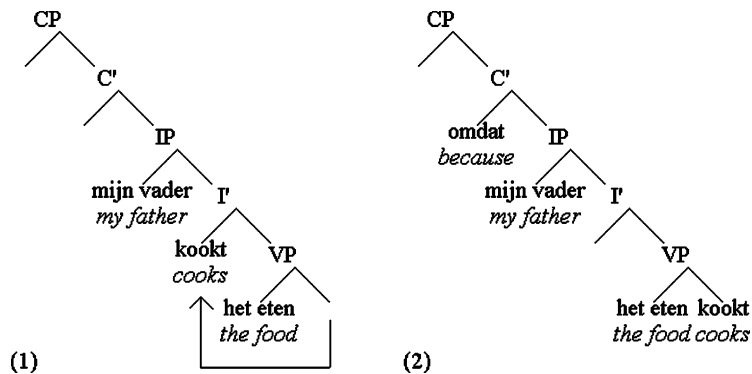
Fig. 1. An example of verb movement in Dutch. (1) In main clauses, the verb moves to second position. (2) In embedded clauses, the verb remains in its base-generated position.

position to nodes representing inflection in order to collect or check their inflection. Dutch and other Germanic languages are traditionally considered to be SOV languages underlyingly (Koster, 1975). This means that the base-generated position of the verb is after the subject and the object. In main declarative clauses, such as sentence (1) below, the verb has to move to second position. This movement is known as verb second. However, in embedded clauses, such as sentence (2) below, the verb remains in its base-generated position. A graphical representation of verb movement in Dutch is presented in Fig. 1.[1]

(1) Mijn vader kookt het eten
    My father cooks the food
    'My father cooks the food'
(2) [Ik ben blij] omdat mijn vader het eten kookt
    [*I am glad*] *because my father the food cooks*
    'I am glad because my father cooks the food'

Bastiaanse and van Zonneveld (1998) proposed that movement of the verb to the second position is difficult for agrammatic aphasics. In languages that have verb movement, like Dutch, this impairment would not only cause problems with the production of word order as such, but also with the production of verb inflection. In the analysis of Bastiaanse and van Zonneveld, the finite verb in Dutch subject-initial main clauses has to move to a non-split inflection node to check its inflectional features, whereas it remains in its VP-final base position in embedded clauses. Since no movement is needed in embedded clauses, both word order and inflection will be produced correctly. However, in declarative main clauses the production of both word order and inflection

will be impaired, because the verb cannot move to second position.

It is unclear whether the movement impairment proposed by Bastiaanse and van Zonneveld really entails a selective impairment of SVO constructions as compared to SOV constructions. It seems to us that the authors gloss over the problem that the inflectional features will need to be checked in embedded contexts as well, by means of covert movement of the verb at Logical Form, which should—by the same logic—lead to impaired verb inflection in embedded clauses, since it involves movement parallel to that found in main clause contexts.

Bastiaanse and colleagues carried out two studies to test their hypothesis (which will be referred to here as the '*Movement Hypothesis*'). In a first study, an elicitation task was used, which consisted of presenting a picture and a sentence frame with the verb missing (Bastiaanse & van Zonneveld, 1998). The task of the participant was to retrieve the verb and inflect it. All sentences were in the present tense, and required a singular agreement inflection. The findings, obtained with 10 Dutch-speaking agrammatic aphasics, indeed appeared to be in line with the predictions: the inflected verb was more often produced correctly given an embedded clause frame than a main clause frame (86 versus 49%, respectively). However, the data were not very compelling. The patients had to retrieve both the verb and the inflection, but often failed to retrieve the verb. This was particularly true for the main clause test, probably because this is what each participant started with. In this main clause test, two out of 10 patients failed to retrieve any verbs, while two others retrieved only two verbs. If we leave these four patients aside, four patients demonstrated perfect or relatively good production of inflection (7/7, 5/5, 6/8, and 4/5 correct). The two remaining patients did show indications of more serious impairment, although the total number of observations remains very low (0/6 and 2/6).

In a second study, Bastiaanse and Thompson (2003) presented nine Dutch-speaking aphasics with sentences,

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[1] In the graphical example of verb movement in Dutch presented in Fig. 1, the verb moves to a non-split inflection node. This was done for reasons of simplicity. Possibly, the verb and subject have to undergo further movement in main clauses—to COMP and the specifier position of CP, respectively. Similarly, the inflection node might be split into separate tense and agreement projections.