CASE AND AGREEMENT IN GREEK APHASIA: EVIDENCE FROM COMPREHENSION

Michaela Nerantzini [a,d], Valantis Fyndanis [b,d], Arhonto Terzi [c] and Spyridoula Varlokosta [d]

[a] Northwestern University, USA,
[b] University of Potsdam, Germany,
[c] Technological Educational Institute of Western Greece, Patra, Greece,
[d] University of Athens, Greece

INTRODUCTION

The present study examines the relationship between agreement relations and case assignment in aphasia.

- ***Both structural case and agreement are morphological manifestations of φ-feature matching and both are linked via a single syntactic process, called Agree*** (Chomsky, 2001).

The evidence for the ability of agrammatic speakers to comprehend structural case and agreement relations in nominal complements is contradictory.

With respect to structural case:

In languages with overt case-marking, case is either correctly computed (Lamers & Ruigendijk, 2008; De Bleser et al., 1988; Heeschen, 1980) or is less accessible to agrammatic speakers at sentence level (Burchert et al., 2003; De Bleser et al., 2005; Friedman & Shapiro, 2003; Hanne et al., 2014).

- Evidence from Greek suggests that morphological case does not facilitate agrammatic speakers' comprehension of non-canonical sentences (Varlokosta et al., 2014).

With respect to agreement:

In the verbal domain, subject-verb agreement violations can be easily detected by agrammatic speakers (Friedmann & Grodzinsky, 1997; Wenzlaff & Clahsen, 2004; Varlokosta et al., 2006; but see Haarmann & Kolk, 1994), although most studies suggest that agrammatic performance is determined by structural complexity (Garaffa, 2008).

Recently, Hanne et al. (2014) showed that agrammatic speakers rely more on agreement (e.g., gender, person or number-agreement) than on case cues (see also De Bleser & Bayer, 1988) while establishing clause-level relations, suggesting that these two operations might differ.

Against this background, and given that the nominal φ-features of both agreement and case are non-interpretable (Pesetsky & Torrego, 2001), we would predict similar performance across tasks for the agrammatic participants. Alternatively, a difference across tasks would be in line with accounts that do not treat case as a by-product of φ-feature agreement (e.g., Marantz, 1991).

METHOD

PARTICIPANTS

Eight Greek-speaking non-fluent agrammatic individuals (mean age: 57.5, SD: 12.3), and eight age-matched control speakers participated in the study. All agrammatic participants had suffered a single left CVA at least 16 months prior testing.

MATERIALS

3 off-line comprehension tasks were developed; two accessed the comprehension of structural case (a grammaticality judgment (CGJT) and a truth-value judgment task (CTVJT)), while one grammaticality judgment task (AGJT) was used to investigate speakers' ability to comprehend agreement relations.

With respect to structural case:

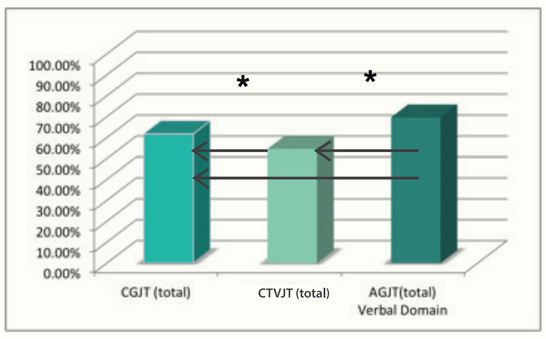
- CGJT: 96 semantically reversible sentences, half ungrammatical, all of which included a transitive two-place verb in active voice.
  In the grammatical sentences, the external argument was marked for nominative and the internal for accusative case.
  (e.g., grammatical: *Sprohni_3SG i_NOM/FEM fititria_NOM/FEM ton_ACC/MASC kurea_ACC/MASC* [The student is pushing the hairdresser])
  In the ungrammatical sentences, both arguments were either marked for nominative or for accusative case.
  (e.g., ungrammatical: *Sprohni_3SG tin_ACC/FEM fititria_ACC/FEM ton_ACC/MASC kurea_ACC/MASC*)
  Participants were auditorily presented with the sentences and were instructed to judge their grammaticality.
- CTVJT: 40 semantically reversible, non-canonical sentences with a transitive two-place verb in active voice, accompanied by pictures. In half of the sentences the picture didn't match the given sentence.
  (e.g., false: *Fotoγrafizi_3SG ton_ACC/MASC maθiti_ACC/MASC o_NOM/MASC papus_NOM/MASC* [The grandpa is photographing the student])
  (e.g., true: *Fotoγrafizi_3SG ton_ACC/MASC papu_ACC/MASC o_NOM/MASC maθitis_NOM/MASC* [The student is photographing the grandpa])
  Participants were instructed to judge whether the sentence matched the picture.

With respect to agreement:

- AGJT: 160 sentences, half ungrammatical, in active voice. Ungrammatical sentences with pre- and post-verbal subjects were included, which differed in number or person features.
  (e.g., ungrammatical: *I_NOM/FEM jaja_NOM/FEM taizo_1SG to_ACC/NEUT moro_ACC/NEUT*)
  (e.g., ungrammatical: *I_NOM/FEM kopela_NOM/FEM trone_3PL salata_ACC/FEM*)
  Participants were auditorily presented with the sentences and were instructed to judge their grammaticality.

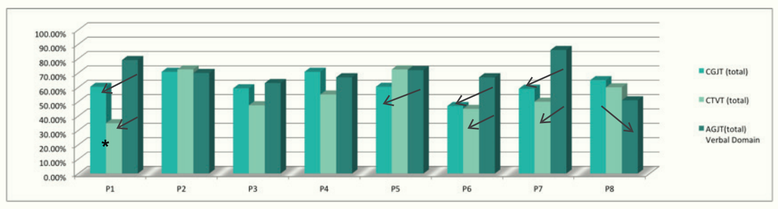
RESULTS

MEAN ACCURACY SCORES ACROSS TASKS (%)



The control participants performed at ceiling across tasks. The agrammatic participants (see Table 1) performed significantly better on the AGJT compared to both structural case tasks (for CGJT: x^2 =13.564, p=.000; for CTVJT: x^2 =26.224, p= .000), although a difference in performance was attested between the CGJT and the CTVJT as well (x^2 =4.817, p=.028) with the CTVJT to be the hardest.

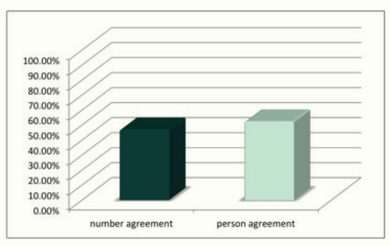
INDIVIDUAL DATA



P1 gramjudg vs truth value (x2 =7.321, p=.007)
P1 gramjudg vs agreem (x2 =10.760, p=.001)
P1 truth value vs agreem (x2 =30.298, p=.000)
P5 gramjudg vs agreem (x2 =4.024, p=.045)
P6 gramjudg vs agreem (x2 =9.600, p=.002)
P6 truth value vs agreem (x2 =6.950, p=.008)
P7 gramjudg vs agreem (x2 =23.876, p=.000)
P7 truth value vs agreem (x2 =25.347, p=.000)
P8 gramjudg vs agreem (x2 =5.048, p=.025)

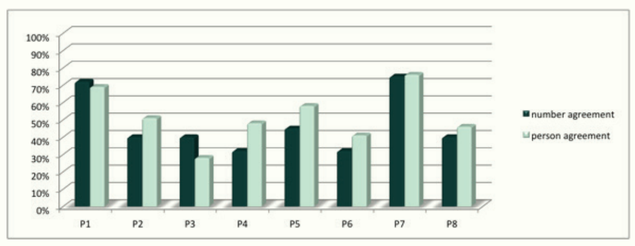
Our data from the AGJT revealed that agrammatic speakers had difficulties identifying agreement errors in the verbal domain.

MEAN ACCURACY SCORES (%)



No difference in agrammatic participants' ability to recognize number and person agreement errors (x^2 =1.827, p=.177).

INDIVIDUAL DATA



No significant differences were attested across participants

Additionally, to investigate the interaction between Agree(ment) and structural case, we compared the overall agrammatic performance on the AGJT with that on CGJT.
The difference between Agreement and ACC-ACC reached significance (x^2 =10.596, p=.001), while the difference between Agreement and NOM-NOM did not (x^2 =.046, p=.830), suggesting an interaction between the two.

DISCUSSION

Our data revealed impairments in the agrammatic speakers' ability to comprehend structural case and agreement relations, although a better performance was attested in the latter. This finding is thus more in line with Marantz's (1991) account, which suggest that case and agreement are differentially licensed and they are not similar manifestations of Agree. This implies that the errors in the two conditions do not have the same source. Additionally, within Marantz's approach, ACC case differs from NOM, since an interaction was attested between Agreement and NOM-NOM structures but not within Agreement and ACC-ACC structures.

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michaela.nerantzini@northwestern.edu

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