Partial agreement in German: A processing issue?

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1 Introduction

While agreement between a plural subject and a verb is straightforward, resulting in a plural verb, the situation with conjoined subjects is not that clear. When the subject consists of two conjoined DPs, agreement with only one DP is sometimes possible. (1) is an example in German.

(1)   a. *Dort stehen$_{PL}$ / steht$_{SG}$ ein Mann$_{SG}$ und eine Frau$_{SG}$.*
          There stand$_{PL}$ / stands$_{SG}$ a man$_{SG}$ and a woman$_{SG}$.

       b. *Ein Mann$_{SG}$ und eine Frau$_{SG}$ stehen$_{PL}$ / *steht$_{SG}$ dort.*
          A man$_{SG}$ and a woman$_{SG}$ stand$_{PL}$ / *stands$_{SG}$ there.

Interestingly, agreement with one conjunct (partial agreement) is only possible if the subject is preceded by the verb as in (1a). Moreover, partial agreement in V-S word order is optional in German. This pattern also arises in many other languages, as reported, e.g., for Moroccan and Lebanese Arabic, Russian, Swahili and Polish (see, e.g., Marten (2005), Lorimor (2007)). Syntactic accounts of single conjunct agreement generally have the problem that different mechanisms have to be postulated depending on the position of the subject. The optionality of partial agreement is an additional difficulty for syntactic accounts.

Alternatively, partial agreement can also be explained by a processing account proposing that the word order asymmetry results from incremental language processing from left to right. The relevant factor is the information available when the finite verb is processed (see also Marten (2005) for a similar account). If the subject is in preverbal position, the plurality of the subject is already computed when the verb is processed (resulting in full agreement). In V-S word order, information about the subject is not yet available at the verb. We assume that in language production, agreement with postverbal subjects depends on whether both conjuncts are already planned when the finite verb is processed. During comprehension the processing of agreement depends on how easy it is to retrieve verb information when the postverbal subject is processed, which can be influenced, e.g., by the distance between verb and subject. The preference for partial or full agreement in V-S

constructions should therefore be strongly influenced by processing load (along the lines of Gibson (2000)). The higher the processing load the more locally the language system operates, i.e., partial agreement should occur more frequently. Partial agreement should also be more acceptable in data sources that directly reflect processing mechanisms, as, e.g., in spoken language or in reading times (online data), than in written texts or judgements (offline data). We derive the following hypotheses.

H1: Partial agreement should occur more frequently (or be processed more easily) in online data sources than in offline data.

H2: Partial agreement should occur more frequently (or be processed more easily) when the subject is in postverbal position.

H3: Partial agreement should occur more frequently (or be processed more easily) when the distance between the verb and a postverbal subject is increased (higher processing load).

In order to test these hypotheses, we compare four different types of linguistic evidence: spoken and written corpus data in German (language production), as well as an incremental grammaticality judgement task and a self-paced reading experiment (comprehension). Spoken corpora and self-paced reading experiments are online data sources, while written corpora and grammaticality judgements can be regarded as offline data. Especially the comparison of online and offline data provides an important piece of evidence (see H1).

2 Corpora

We searched for conjoined singular subjects in German newspaper texts (TüBa-DZ) and in spoken dialogs (TüBa-DS). We only considered those cases where the agreement with one conjunct results in a singular verb form and the agreement with both conjuncts in a plural verb form. The corpus results show a significant difference between the agreement with preverbal and postverbal subjects in both written and spoken data. In the newspaper corpus 1.5% of the preverbal constructions (S-V word order) exhibit partial agreement compared to 15% in the V-S word order. In the spoken corpus 59% of the S-V constructions show partial agreement compared to 94% in the V-S word order. We furthermore found that partial agreement occurs significantly more frequently in spoken data than in written texts ($\chi^2(1) = 85.6$; $p < 0.001$). Overall, the corpus data confirm hypotheses H1 and H2.

Experiments

The processing of partial agreement was investigated using an incremental grammaticality judgement task and a self-paced reading experiment. We used the

same test material for both experiments consisting of verb second statements with three different word orders: a. subject in preverbal position (2a), b. subject postverbal (2b), c. subject postverbal with increased distance between verb and subject (2c). Word order was crossed with two agreement types: partial and full agreement.

(2)   a. [*Eine gutmütige Lehrerin*]$_{SG}$ *und* [*eine unerfahrene Referendarin*]$_{SG}$ **gehen**$_{PL}$/**geht**$_{SG}$ *nach dem Unterricht frustriert aus dem Klassenzimmer.*

        [A good-natured teacher]$_{SG}$ and [an unexperienced student teacher]$_{SG}$ **go**$_{PL}$/**goes**$_{SG}$ after the class frustrated out_of the classroom.

    b. *Frustriert* **gehen**$_{PL}$/**geht**$_{SG}$ [*eine gutmütige Lehrerin*]$_{SG}$ *und* [*eine unerfahrene Referendarin*]$_{SG}$ *nach dem Unterricht aus demKlassenzimmer.*

        Frustrated **go**$_{PL}$/**goes**$_{SG}$ [a good-natured teacher]$_{SG}$ and [an unexperienced student teacher]$_{SG}$ after the class out_of the classroom.

    c. *Frustriert* **gehen**$_{PL}$/**geht**$_{SG}$ *nach dem Unterricht* [*eine gutmütige Lehrerin*]$_{SG}$ *und* [*eine unerfahrene Referendarin*]$_{SG}$ *aus demKlassenzimmer.*

        Frustrated **go**$_{PL}$/**goes**$_{SG}$ after the class [a good-natured teacher]$_{SG}$ and [an unexperienced student teacher]$_{SG}$ out_of the classroom.

The grammaticality judgements show that partial agreement is significantly more acceptable with postverbal subjects than with preverbal ones. Nevertheless, most participants rated partial agreement as ungrammatical (90% with preverbal subjects (2a), 76% with postverbal subjects (2b) and 72% with distant postverbal subjects (2c)).

In the self-paced reading experiment partial agreement was processed more easily with postverbal subjects than with preverbal ones. We found significantly longer reading times for partial agreement in preverbal constructions compared to full agreement. Partial agreement in postverbal constructions was processed as easily as full agreement. If the postverbal subject is more distant from the verb as in (2c), partial agreement was processed even faster than full agreement which indicates that the higher processing load switches the preference to partial agreement. While the postverbal constructions were rated as ungrammatical in the judgement task, the same sentences were processed very easily or were even preferred in the reading time experiment. The results of both experiments confirm hypotheses H1, H2 and H3.

To summarize, in offline data (written texts, judgements) partial agreement is very rare and is mostly judged to be ungrammatical. In online data types (spoken data, reading times) partial agreement occurs frequently and is even preferred over full agreement. The comparison of offline and online data sources provides evidence that partial agreement is strongly influenced by processing mechanisms and processing load. In addition, these results clearly show how important it is to take into account online and offline aspects of the data sources in contrasting data types.

References

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