

MULTIPLE ANTECEDENT AGREEMENT AS SEMANTIC OR SYNTACTIC AGREEMENT¹

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Abstract

In this paper, I challenge the argument put forth by Corbett (1991) that, within multiple antecedent agreement, the two possible agreement strategies, Resolution and Partial Agreement, can be viewed as semantic and syntactic agreement, respectively. Resolution, while semantically motivated and involving input from all of the agreement controllers, is not the same as semantic agreement in single-antecedent contexts. Partial Agreement, which relies on the morphological features of only one of the antecedents, still requires reference to the semantic features of both antecedents, as this strategy is more likely when the controllers are inanimate. Instead, I propose that the distribution of the two strategies – which nonetheless reflects the Agreement Hierarchy (Corbett 1979) and the Predicate Hierarchy (Comrie 1975) – is a product of the cognitive difficulty multiple antecedent agreement contexts pose for the speaker, such that the rules for this context are really part of broader principles within and across languages.

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1. Introduction

Agreement with multiple antecedents provides surprising and interesting data for theories of syntax and agreement (Corbett 1991:261). In instances of multiple antecedent agreement, it is not immediately obvious from the features of the controllers alone what the features of the target should be. Unlike agreement with a single antecedent, where the controller and the target almost always share the same agreement features, agreement with multiple antecedents produces what Corbett (1991) refers to as an agreement mismatch between the controllers and the target(s).

Compare the following two examples from Latin. In example (1), agreement with a single antecedent, the controller is *Scipio*, a masculine singular noun. As expected, the targets share the same features as the controller: the verb *sit* agrees for the correct number, singular, and the adjective *clarus* agrees for both gender and number, masculine singular.

(1) Single Antecedent Agreement

sit Scipio clarus
 be-3.SG Scipio.M.SG illustrious.M.SG
 ‘Let Scipio be illustrious.’ (Cicero, *Cat. iv.21*, from A&G)

On the other hand, in example (2), there are two antecedents (in the form of a conjoined noun phrase, *labor voluptasque* ‘labor and desire’) which control agreement on the target verb/past participle *esse iunctum*² ‘be-bound.INF’. Since the target cannot be masculine (following *labor*) and feminine (following *voluptas*) at the same time, we have the precise context for an agreement mismatch: the features of the target will never match both controllers at the same time, since only one set of feature values can be expressed by a target. What we find instead is a small range of possible feature combinations for the target, modeled on either just one of the antecedents or according to a set of semantically-based rules.

(2) Context for Multiple Antecedent Agreement

Labor voluptasque ESSE IUNCTUM
 labor.M.SG delight.F.SG.-and be bound
 ‘Labor and delight are bound’

In Latin, and across languages more broadly, these possible feature combinations result from two main strategies for approaching multiple antecedent agreement: Resolution (3a) and Partial Agreement (3b) (terminology from Corbett 1991 and Wechsler & Zlatić 2003). Resolution appears to be more semantically motivated: the target’s features are more or less “computed” by adding up the features of the controllers. As a result, the target is always plural (reflecting the semantic transparency of number agreement in this context) and the gender is determined according to language-specific

² This is not the usual citation form for Latin verbs (the first person singular present indicative is primarily used), but it represents a “neutral” form of the past passive verb: the auxiliary is in the infinitive (so as not to express gender) and the participle is in the neuter singular, the common citation form for adjectives.

rules, which often reference semantic features, e.g. animacy. Partial Agreement, on the other hand, does not display the same semantic motivation: rather than involving equal contribution of both of the controllers, the target’s features match those of only one of the controllers. In Latin, the controller that serves as the basis for agreement is usually the one closest to the target (and so Partial Agreement in Latin is referred to as “Nearest Antecedent Agreement”).

(3) Agreement Strategies

a. *Resolution*

formosi sunt verris et scrofa
 handsome.M.PL are boar.M.SG and sow.F.SG
 ‘The boar and the sow are handsome.’ (Varro, *RR II.4.4*)

b. *Nearest Antecedent Agreement*

ut maxime **amicum** **cytium** et medica
 while very beneficial.N.SG snail-clover.N.SG and alfalfa.F.SG
 ‘while snail-clover and alfalfa [are] very beneficial’ (Varro, *RR II.2.19*)

One of the primary goals in investigating multiple antecedent agreement is to model the distribution of the strategies: within and across languages, in what contexts do we find Resolution and Partial Agreement? Corbett (1991) has proposed that the distribution of these strategies conforms to the Agreement Hierarchy (4a, Corbett 1979) and the Predicate Hierarchy (4b, Comrie 1975), if we view Resolution as semantic agreement and Partial Agreement as syntactic agreement.

(4) Typological Generalizations

a. *The Agreement Hierarchy*

attributive		predicate		relative pronoun		personal pronoun
← syntactic agreement						semantic agreement →
Nearest Antecedent Agreement						Resolution

b. *The Predicate Hierarchy*

verb		participle		adjective		noun
← syntactic agreement						semantic agreement →
Nearest Antecedent Agreement						Resolution

These hierarchies provide a basic typology of agreement: the more noun-like the target, the more likely we are to find agreement with the semantic features of the controller(s); the more verb-like the target, the more likely we are to find agreement with the syntactic (i.e. grammatical) features of the target.

Corbett’s proposal, while supported by cross-linguistic research and single antecedent agreement structures, raises an important theoretical question: is Resolution really semantic agreement and is Partial Agreement really syntactic agreement? Is there independent evidence for viewing the strategies in this way, and should we expect multiple antecedent agreement to operate in the same way as the straightforward single antecedent agreement in (1)? In what follows, I provide a critique of Corbett’s proposal

using data from Latin and suggest an alternative solution: one that takes into consideration linguistic performance. In sections 2 and 3, I discuss Resolution and semantic agreement, and Partial Agreement and syntactic agreement. In section 4, I present my performance-based view of agreement, which accounts for the distribution of strategies with reference to broader principles and rules within and across languages.

2. Resolution and semantic agreement

In Latin, there are two patterns of Resolution: in some instances, masculine is the resolved gender (5, repeated from (3a) above), but in other instances, neuter is the resolved gender (6).

- (5) formosi sunt verris et scrofa
 handsome.M.PL are boar.M.SG and sow.F.SG
 ‘The boar and the sow are handsome.’ (Varro, *RR II.4.4*)
- (6) labor voluptasque ... sunt iuncta
 labor.M.SG delight.F.SG.-and are bound.N.PL
 ‘labor and delight are bound...’ (Livy. *AVC*, from A&G)

In both examples, there is a masculine singular antecedent and a feminine singular antecedent, i.e. the same grammatical features are present for both examples. The Resolution rules must therefore refer to a feature other than the grammatical gender of the antecedents to determine the resolved gender for each sentence.

The relevant feature is animacy, as discussed by the grammar handbooks (e.g. Allen & Greenough 1888) and previous literature (e.g. Corbett 1991), and supported by the data in my own corpus study (Johnson 2011). Animate antecedents use masculine as the resolved gender, while inanimate antecedents use neuter as the resolved gender. Given this connection between animacy and resolved gender, there is a clear semantic basis to these Resolution rules: at the very least, there is a connection between neuter grammatical gender and lacking biological gender and, perhaps to extend this connection, between masculine grammatical gender and having biological gender.

We have established that Resolution is semantically motivated, involving contribution of the semantic features of both antecedents, but is this actually semantic agreement? This would imply that the resolved gender follows naturally from the “adding up” of the controllers’ gender features. Consider example (7) of semantic agreement in a **single** antecedent context.

- (7) pars certare parati
 part.F.SG to contend ready.M.PL
 ‘a part [group of men] ready to contend’³ (Vergil, *Aen.* v. 108)

³The larger context (7): laeto complerant litora coetu / uisuri Aeneadas, pars et certare parati.
 ‘They filled the shores with a happy crowd / [some] to see the men of Aeneas,
 and a part ready to contend [in the games].’ (Aeneid, v. 107-8)

In this example, the target *parati* is masculine plural, even though the controller, *pars*, is grammatically feminine singular. This is because *pars* refers to a group of men out in the world: the grammatical features of *parati* are modeled on the plurality and male-ness of the group of men that is the referent of *pars*.

The question we should consider is whether Resolution works in the same way: do the features of the target follow naturally from the “adding up” of the semantic features of the controllers? There are at least two problems here: first, there is necessarily a stipulated component to these rules. Resolution rules vary across languages: in Old Icelandic, for example, we find that all instances of Resolution are to the neuter gender, regardless of the semantic properties of the antecedents (Corbett 1991:80-3). If the gender of the group follows naturally from the semantics of the controllers, we would not expect to see this kind of variation. Additionally, the process of “adding up” genders to produce masculine or neuter gender is not semantically transparent. How does masculine and feminine combine to “equal” masculine or neuter gender? There is no transparent connection between the semantic genders of the controllers and the resulting resolved gender⁴.

While Resolution is unquestionably semantically *motivated*, it is not the same kind of semantic agreement found in single antecedent agreement. Our explanation for the distribution of the two strategies should therefore reflect this fundamental difference between single antecedent agreement and multiple antecedent agreement.

3. Partial Agreement and syntactic agreement

The other multiple antecedent agreement strategy in Latin, Nearest Antecedent Agreement, occurs when the target shares the same feature values with only the closest controller, regardless of if the target follows (8a) or precedes (8b, repeated from (3b) above) the controllers. In cases where there is more than one agreement target, each target agrees with its closest controller (8c).

- (8) a. Ibi Orgetorigis filia atque **unus** e filiis
 There of-Orgetorix daughter.F.SG and one.M.SG from sons

captus est
 was-captured.M.SG
 ‘There the daughter and one of the sons of Orgetorix were captured.’
 (Caesar, *BG* 1.26)

- b. ut maxime **amicum** **cytisum** et medica
 while very beneficial.N.SG snail-clover.N.SG and alfalfa.F.SG
 ‘while snail-clover and alfalfa [are] very beneficial’ (Varro, *RR* II.2.19)

⁴ It was suggested (Corbett, p.c.) that the key to the semantics might lie in the Latin word(s) for ‘group’; however, all three genders are represented by the various Latin ‘group’ words: *coetus* ‘assembly’ (m.), *classis* ‘group, division’ (f.), *decuria* ‘gang, class’ (f.), *conjectus* ‘throwing together, i.e. collection’ (m.), *collectio* ‘collection’ (f.), *corpus* ‘body’ (n.).

- c. **non eadem alacritate ac studio quo**
 not same.F.SG ardor.F.SG and zeal.N.SG which.N.SG
 ‘[did not employ] the same ardor and zeal which [they had used to employ
 in land combat]’ (Caesar BG. 4.24)

Again, we can ask a similar question: is Nearest Antecedent Agreement syntactic agreement? Syntactic agreement is defined as agreement consistent with the morphological features of the controller(s), without reference to the semantic features (Corbett 2006:156). In Nearest Antecedent Agreement, the target’s features are only consistent with the morphological features of *one* of the controllers – and it is the controller that is nearer to the target. This local and linear dimension to Nearest Antecedent Agreement should not be ignored; as discussed below, Nearest Antecedent Agreement resembles a typical “ungrammatical” outcome of difficult long distance dependencies, i.e. attraction errors.

Additionally, while syntactic agreement implies no reference to the semantic features of the controllers, Corbett (1991) has stated that Resolution is more likely when the controllers are animate, i.e. there is some reference to a semantic feature when “choosing” which strategy to use.

Viewing Nearest Antecedent Agreement as syntactic agreement works only if this strategy is completely divorced from the semantics. In a broad sense, this is appropriate: there is no semantic rule that conditions the form of the target; it is only the proximity of one of the controllers that determines the features. However, we still need to explain why such a strategy does not involve input from all of the controllers (there could just as easily be a syntactic rule that computes the gender of the target from the morphological features of the controllers). Likewise, the semantic features of the controllers still influence the choice of strategy, even though the actual agreement process of Nearest Antecedent Agreement does not make reference to any semantic feature. This aspect of the distribution also requires explanation, as it is not explained by the hierarchies above.

4. Performance-based agreement: Gender assignment and Avoidance

If, on the basis of these facts, Resolution is not quite semantic agreement and Partial Agreement is not quite syntactic agreement, we need to explain why the hierarchies in (4) are still observed in Latin. In fact, even if Resolution **is** semantic agreement and Partial Agreement **is** syntactic agreement, such patterns still require explanation: the hierarchies in (4) are only typological tools that model common cross-linguistic patterns; by themselves, they offer no explanation as to why such patterns frequently occur. The solution I propose is one that takes into consideration linguistic performance, as evidenced in particular by the existence and acceptability of a strategy like Nearest Antecedent Agreement.

Unlike Resolution, Nearest Antecedent Agreement relies on linear and local relationships between the controllers and the target(s). As mentioned above, this strategy

– at least superficially – resembles what are typically referred to as attraction errors in other languages, e.g. the examples in (9) below.

- (9) a. *Number Attraction*
 The time for fun and games **are** over. (Bock & Miller 1991)
- b. *Gender Attraction*
 Stanze che sono anni e anni che sono
 rooms.F.PL that be.3.PL years.M.PL and years.M.PL that be.3.PL.

 chiusi
 closed. M.PL
 ‘Rooms that have been closed for years and years’ (Vigliocco & Franck 1999)

Along the same lines, Corbett (2006:170) has argued that, with respect to this agreement strategy, we should “perhaps be looking to psychologists, who have demonstrated the importance of first and last positions in lists in other domains.”

There is also an inherent difficulty present in multiple antecedent agreement contexts. First, as discussed earlier, both strategies produce an agreement mismatch: the target cannot share the same features as both of the controllers. This makes the task of selecting agreement features more complicated than in single antecedent agreement contexts. Second, the gender system in Latin may be another source of difficulty for speakers. For animate nouns, the grammatical gender of the noun overlaps with the biological gender of the referent. This creates a gender system in Latin that in some instances references the natural sex of the referent, but in other instances, e.g. for inanimate nouns, it does not—it is purely grammatical, and thus has no relationship with the actual semantic properties of the referent.

Finally, multiple antecedent agreement is relatively rare: in my 300,000-word corpus study (Johnson 2011), there were only 47 unambiguous tokens, which means that speakers encounter this context far less than they do single antecedent agreement contexts. All of these facts about multiple antecedent agreement and Nearest Antecedent Agreement indicate – at least indirectly – that such a construction causes the speaker cognitive difficulty. The resulting strategies are a product of this difficulty, such that the strategies are a result of agreement done “on the fly,” according to more general rules within and across languages.

4.1 Resolution as gender assignment

Resolution is simply gender assignment. Within Latin, both semantic and formal criteria are relevant for gender assignment: both the semantic features of the noun and the form of the ending are used for gender assignment, e.g. for borrowed words. In multiple antecedent agreement, the targets are all native words, so only the semantic criteria are used. In particular, it is the animacy value of the nouns that determines the assigned

gender. Wechsler & Zlatić (2003:182-3) have formalized this notion by proposing that coordinate noun phrases do not have an inherent lexical gender feature and so must be assigned a semantic gender based on a language-specific rule. In Latin, this rule – which operates not just in multiple antecedent contexts but elsewhere in the language – is one that simply correlates masculine grammatical gender with animacy and neuter grammatical gender with inanimacy. Since this rule applies in other feature assignment contexts, we are able to explain Resolution with reference to a broader rule within Latin.

4.2 Nearest Antecedent Agreement as Avoidance

Alternatively, rather than dealing with the complex problem of “adding up” genders via Resolution/gender assignment, the speaker can choose to avoid this problem altogether by simply agreeing with the closest antecedent. Nearest Antecedent Agreement is thus part of a larger category of what Hock (2007a) terms “Avoidance” strategies, whereby speakers employ a strategy that does not require them to produce a resolved form (where they must address the difficulty posed by the resulting agreement mismatch, the lack of semantic transparency in the gender marking, and the infrequency of the agreement context). Other Avoidance strategies found across languages include First Antecedent Agreement (e.g. in Slovene, Corbett 1991:266), restructuring the sentence completely (e.g. in Polish, Rothstein 1993), and gender neutralization (e.g. in German, Hock 2007b).

How does this performance-based view of multiple antecedent agreement fit with the hierarchies in (4) above? Rather than labeling Resolution as “semantic agreement” and Nearest Antecedent Agreement as “syntactic agreement,” I account for the distribution of Resolution vs. Nearest Antecedent Agreement as one that is the product of the relative difficulty of different multiple antecedent agreement contexts. Resolution occurs when the semantics of the antecedents are more concrete (when the controllers are animate) and/or more relevant (when the target is more noun-like, i.e. when we must conceive of the coordinate noun phrase as a group).

Nearest Antecedent Agreement, on the other hand, is a product of the cognitive difficulty such contexts create, especially when the semantic features are less transparent (when the controllers are inanimate) and/or less relevant (when the target is more verb-like). The hierarchies are therefore explained not with reference to semantic or syntactic agreement – a problematic notion given the facts above – but according to the difficulty posed by multiple antecedent agreement more generally.

5. Conclusion

The Agreement Hierarchy and the Predicate Hierarchy are useful typological tools: in single antecedent agreement contexts, they accurately describe how likely a speaker is to agree with the semantic or morphological features of the controller. In multiple antecedent agreement, the same patterns are observed, provided we put Resolution on the semantic agreement end of the hierarchy and Partial Agreement on the syntactic agreement end. However, this conceptualization of the agreement strategies is met with significant theoretical problems: Resolution is not quite semantic agreement as defined in

single antecedent agreement contexts, and Partial Agreement still involves some reference to the semantic features of the controllers.

In order to account for the observed distribution of strategies, I instead propose that the patterns are a result of the overall cognitive difficulty associated with such an infrequent structure – a structure that is further complicated by the nature of gender marking in Latin and the agreement mismatch that necessarily results from multiple antecedent agreement. In this way, the strategies can be explained by broader principles within and across languages: Resolution as gender assignment, and Partial Agreement as a kind of Avoidance strategy.

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