Phi-feature resolution under coordination is extra-grammatical

Paulina Lyskawa
University of Maryland, College Park

It is commonly assumed that the person/number/gender (ϕ) features of a coordinate structure are computed grammar-internally from the ϕ of its conjuncts. This paper argues that the mechanism behind ϕ-resolution in coordination is not grammar-internal. First, using data from multiple languages, I show that the variation in resolution under coordination is attested for person, number and gender/noun class features alike. While the degree of variation seems the largest in cases of gender resolution, all feature resolution may be influenced (but not determined) by the same factors, e.g. morphological syncretism, lexical choice, and mismatch of form and interpretation. Given this parallelism, I argue that the underlying mechanism behind all ϕ-resolution is the same. Because the factors that influence the variation are not deterministic, I argue that the ϕ-resolution is based on extra-grammatical strategy that governs both the cases of speaker's variability and certainty. Unlike many familiar cases of variation, this variation is not the result of performance factors obscuring an otherwise deterministic underlying competence. Instead, both variation and certainty of speaker's ϕ-resolution is a direct result of the extra-grammatical, non-deterministic nature of the underlying computation.

Empirical background: Descriptively, some aspects of ϕ-resolution under coordination tends to adhere to a cross-linguistic Agreement Hierarchy (Corbett 1979) and other aspects of ϕ-resolution tend to follow language-specific rules. Despite the apparent systematicity of linguistic behavior with respect to ϕ-resolution under coordination, we also observe examples of unexpected inter- and intra-speaker variability in linguistic behavior.

Gender/noun class: In many languages for which gender or noun class resolution rules have been proposed, we unexpectedly find exceptions (Corbett & Mtenje 1979 for Chichewa, Carstens 2019 for Xhosa, Croitor & Giurgea 2009 for Romanian, Ruda 2011 a.o. for Polish):

(1) Matka   i   niemowlę   patrzy-**ły/-li**   na   siebie   nawzajem.
     mother(F)   & newborn(N) look-**PST.NVIR/-PST.VIR** on   self   each.other
     'A mother and a newborn baby were looking at each other.' (Zieniukowa 1979)

Given the genders of the conjuncts in (1), proposed Polish rules predict non-virile *-ły* to be the only acceptable form of agreement on a verb (Willim 2012). The availability of the second variant, virile *-li,* is not predicted by any formulation of a deterministic rule. Furthermore, changing the lexical items may reduce the relative acceptability of the unexpected virile agreement variant:

(2) Matka   i   dziecko leż-**ały/?-eli**   na   piasku.
     mother(F)   & baby(N)   lie-**PST.NVIR/-PST.VIR** on   sand
     'A mother and a baby were lying on the sand.'

The difference between (1) and (2) is in the lexical choice of a noun (keeping the gender feature the same) and predicate. Further, changing one of the conjuncts to inanimate (without any interpretable gender features) further reduces the acceptability of the unexpected virile variant:

(3) Matka   i   futro   leż-**ały/??-eli**   na   piasku.
     mother(F)   & coat(N)   lie-**PST.NVIR/-PST.VIR** on   sand
     'A mother and a coat were lying on the sand.'

Finally, the virile variant becomes unacceptable when the feminine conjunct is replaced by a neuter conjunct – this fact is left unexplained by any rule that would otherwise account for (1)-(3):

(4) Dziecko i futro leż-**ały/*-eli**   na piasku.
    baby(N)   & coat(N) lie-**PST.NVIR/-PST.VIR** on sand
    'A baby and a coat were lying on the sand.'

Number: Number resolution displays cases of variability, despite seemingly robust rules of φ-resolution (Sobin 1997, Heycock & Zamparelli 2005 a.o. for English). Consider Lebanese Arabic:

(5) ?Mina w Paulina ra ħ-**∅/-o**   ʕal   maʔal.
    Mina & Paulina   went-**3SG/-3PL** to.the store
    'Mina and Paulina went to the store.'

For some speakers of LA neither the SG nor the PL form of agreement on the verb is fully acceptable. However, this ineffability does not occur when the DP$_{sg}$&DP$_{sg}$ coordination is replaced by a plural pronoun referring to a pair of individuals – then φ-resolution is necessarily plural.

Person: Person resolution also displays exceptions to proposed deterministic rules (e.g. Fanselow & Féry 2002, Timmermans et al. 2004, Reis 2017 in German). Consider Russian:

(6) My i lojal'nye čitateli   ne ispytyvaj-**em/-ut** ničego   krome vostorga.
    1PL & loyal   readers.NOM not feel-**1PL/-3PL**   nothing except excitement.GEN
    'We and the loyal readers feel awe and only awe.'

Speakers of Russians vary in acceptability of either variant – sometimes they accept both, sometimes only 1PL or only 3PL and finally, sometimes they accept neither.

Proposal: The empirical data suggests that φ are accessible to the external syntax but there is no formal, deterministic resolution algorithm. Given the lack of syntax-readable specification of &P, speakers employ surface repair strategies when forced to produce agreement morphology. The repair strategies take different guises – speaker's uncertainty and ineffability. However, either of these guises may be turned to certainty upon manipulation of factors like morphological syncretism, lexical choice and mismatch of form and interpretation. While these factors in principle could be built into a grammar-internal mechanism, their addition would still not provide a deterministic resolution algorithm. Therefore, I propose that φ-resolution with all its behavioral guises is a grammar-external strategy that is not completely *ad hoc*. This mechanism is similar in nature to the mechanism behind the selection of form for an addressee (e.g. in Spanish polite *Usted* vs. *tú*) or agreement with honorifics in some languages. Both the φ-resolution and selection of addressee forms are governed by rules that constrain their usage-conditions.

The need for extra-grammatical strategy in coordination is not completely unexpected. Much work on coordination concludes that coordinate structures constitute a unique grammatical object (Goodall 1987, Lasnik & Uriagereka, in prep). In particular, Goodall argues that at the stage of structure building, phrase markers within a coordination are a simple union, i.e. they are not sisters and they do not precede or dominate each other. Only later in the grammatical derivation they are restructured to allow for their integration with some other operations in syntax such as gapping or interpretative ambiguity (collective vs. 'respective' readings). I argue that the need for extra-grammatical φ-resolution is a result of this unusual status of coordination in syntax.

Against alternative proposals: Abandoning the view that φ-resolution is syntactic has the advantage of stream-lining syntax. Some proposals argue for more elaborate featural representations that involve both syntax and semantics (e.g. Prażmowska 2016), however, I show that such resolution algorithms on one hand overgenerate (e.g. conjuncts are 'eligible' for a particular resolution, but do not determine it) and on the other hand they undergenerate (e.g. no account of animal denoting nouns). A fully semantic approach to resolution by Wechsler & Zlatić (2003) requires assuming a derivational model where semantics can feed morphophonological agreement. In sum, current accounts make either syntax or the entire model of grammar very baroque (or both) and still do not account for the entire empirical landscape. Attributing this variation to a non-syntactic computation (by filling grammatical gaps (Reis 2017) or overriding grammatical instructions (Sobin 1997)) explains the lack of determinism in a more elegant way than building overly-complex mechanisms into syntax.