On labeling of DP coordinations and the lack of ϕ-feature resolution in syntactic Agree
Ivona Kučerová (McMaster University)

Current theories of Agree (Chomsky 2001) assume that if there is no structurally accessible ϕ-complete goal, then unvalued ϕ-features, instead of being matched and valued, may be set to a default (e.g., agreement with quirky subjects; cf. Failed Agree of Preminger 2009). Less is known about Agree in structures with more than one accessible goal. According to Hiraiwa (2005), one chain cannot contain two distinct values of the same feature. Yet, most (if not all) theories of agreement with a DP coordination (henceforth, COORD) assume some form of feature resolution within the COORD whenever the ϕ-features of the conjuncts do not match (Farkaş & Zec 1995, King & Dalrymple 2004, Heycock & Zamparelli 2005, Marušič et al. 2015). I provide novel evidence that syntactic Agree *cannot* resolve ϕ-feature mismatch. Rather, ϕ-feature agreement with a COORD is possible only if the COORD has been spelled-out and in the process got uniquely labeled by PERSON via minimal search by CI (Narita 2011, Chomsky 2013). The illusion of ϕ-feature resolution comes from morphological realization of agreement with PERSON. The evidence comes from that only probes with an unvalued PERSON feature may agree with a COORD that contains non-matching ϕ-features. Probes that lack a PERSON feature may agree only if ϕ-features match. The core empirical data come from Czech.

The puzzle: Standard Czech distinguishes three grammatical genders (masculine, M; feminine, F; neuter, N) and two numbers (SG, PL). In addition, M is marked for animacy (masculine animate, MA, and inanimate, MI). Plural agreement of all categories is partially syncretic, in that it collapses F and MI, and preserves MA and N. According to existing descriptive generalizations (e.g., Panevová & Petkevič 1997), if conjuncts in a COORD differ in gender, postverbal predicate agreement always resolves the mismatch along a markedness hierarchy: animacy (MA) $\succ$ gender ({MI/F}), as in (1).

(1)   a.   Kočka/kotě/dobytek   a   pes   jedli   ze   stejné misky.
             cat.F.SG/kitten.N.SG/cattle.MI.SG and dog.MA ate.PP.MA.PL from same bowl
             'The cat/kitten and the dog ate from the same bowl.'   **F/N/MI + MA = MA (ANIMATE)**

        b.   Kotě   a   kočka/dobytek   jedly   ze   stejné misky.
             kitten.N.SG and cat.F.SG/cattle.MI.SG ate.PP.{MI/F}.PL from same bowl
             'The kitten and the cat/cattle ate from the same bowl.'   **N + F/MI = {F/MI} (GENDER)**

The basic pattern is complicated by the fact that although a DP in N.PL triggers N.PL agreement, a COORD triggers N.PL only if *all* conjuncts are in N.PL, as in (2).

(2)   a.   Kotě   a   štěně   *jedla/jedly   ze   stejné misky.
             kitten.N.SG and puppy.N.SG ate.*PP.N.PL/PP.{MI/F}.PL from same bowl
             'The kitten and the puppy ate from the same bowl.'   **N.SG + N.SG = {F/MI} (GENDER)**

        b.   Koťata   a   štěně   *jedla/jedly   ze   stejné misky.
             kittens.N.PL and puppy.N.SG ate.*PP.N.PL/PP.{MI/F}.PL from same bowl
             'The kitten and the puppy ate from the same bowl.'   **N.PL + N.SG = {F/MI} (GENDER)**

        c.   Koťata   a   štěňata   jedla   ze   stejné misky.
              kittens.N.PL and puppies.N.PL ate.PP.N.PL from same bowl
             'The kittens and thepuppies ate from the same bowl.'   **N.PL + N.PL = N.PL**

Crucially, the descriptive generalization does not extend beyond agreement with verbal predicates (here, past participle; PP). With other categories, e.g., adjectival predicates and passive participles, agreement plays out rather differently: As can be seen in (3-a), if the gender features of the conjuncts do not match, agreement is grammatical only if one conjunct is MA and the other one is semantically animate F. Combinations that would otherwise trigger GENDER agreement are strongly degraded (marked as ??), as in (3-b). If one of the conjuncts is MA and the other one is N, then speakers avoid agreement altogether (marked as ⊛), as in (3-c)–(3-d). Syncretism cannot explain the difference between verbal agreement and adjectival agreement as both paradigms are syncretic and the cut does not match the agreement patterns.

(3)   a.   Petr/Pes   a   Pavla/kočka   byli   unavení.
             Petr/dog.MA.SG and Pavla/cat.F.SG were.PP.MA.PL tired.PP.MA.PL
             'A/the dog and a/the cat were tired.'   **MA + F = MA (ANIMATE)**

b. ??Kočka/dobytek   a kotě   byly   unavené.
   cat.F.SG/cattle.MI.SG and kitten.N.SG were.PP.F.PL tired.PP.F.PL
   '{Petr and Pavla}/{A/the cat and a/the kitten} were tired.'   F/MI + N = **??{MI/F}** (GENDER)

c. ⊛ Pes   a kotě   byli   ??unavené/   ??unavení/   ??unavená.
   dog.MA.SG and kitten.N.SG were.PP.MA.PL tired.PP.MI/F.PL/ tired.PP.MA.PL/ tired.PP.N.PL
   Intended: 'A/the dog and a/the kitten were tired.'   MA.SG + N = ⊛

d. ⊛ Psi   a koťata   byli   ??unavené/   ??unavení/   ??unavená.
   dogs.MA.PL and kitten.N.SG were.PP.MA.PL tired.PP.MI/F.PL/ tired.PP.MA.PL/ tired.PP.N.PL
   Intended: 'The dogs and the kittens were tired.'   MA.PL + N.PL = ⊛

The proposal: I argue that the difference lies in the unvalued features of the probes. While verbal predicates probe for PERSON, the adjectival part of the predicate does not. I argue that the feature resolution never arises via syntactic Agree. Instead, Agree with COORD targets 'semantic' features created by labeling of the COORD by PERSON feature at Spell-Out. Thus, instead of matching and valuation of features present from the lexicon, Agree is based on modulated features in the label in a manner familiar—though poorly understood—from anaphoric agreement. Technically, I follow Munn (1993), Bošković (2009), Bhatt & Walkow (2013) in that COORD creates semantic plurality. I model semantic plurality as a conjunction of PERSON features that arises during labeling of the COORD via minimal search by CI (Narita 2011, Chomsky 2013). Since PERSON provides a formal connection to a referential index (Longobardi 2008, Sudo 2012, Landau 2010, a.o.), semantic plurality corresponds to a conjunction of non-matching indices based on PERSON features. Crucially, PERSON feature modeled as ±PARTICIPANT (Nevins 2007, a.o.) also intrinsically marks animacy: I argue that only animate DPs are +PARTICIPANT (1st: [+SPKR, −HR]; 2nd: [−SPKR, +HR]; 3rd anim: [−SPKR, −HR]). In contrast, inanimate DPs are [−PARTICIPANT]. If COORD is marked as [PL, +PARTICIPANT], morphology treats predicate agreement as animate (∼MA), as in (1-a). If COORD is marked as [−PARTICIPANT], agreement is realized as −animate (∼{MI/F}), as in (1-b). I argue that neuter is different in that it lacks a PERSON-feature specification: in turn, N fails to combine with a +PERSON feature (+PARTICIPANT), as in (3-c)–(3-d), and N.PL only arises by post-syntactic agreement with both conjuncts (Bhatt & Walkow 2013), as in (2-c). If the probe lacks an unvalued PERSON feature, agreement is possible only if grammatical gender is specified for animacy (MA in (3-a)) or if ϕ-features match.

Predictions: If agreement gaps result from labeling, we expect to find them outside of canonical COORD agreement. This prediction is borne out in comitative and first-conjunct-agreement constructions. Although in comitative constructions only one conjunct is in nominative, agreement is with both conjuncts, i.e., it is based on the COORD label. In turn, the agreement pattern exhibits familiar agreement gaps [examples left out for space reasons]. Strikingly, even if the predicate morphologically agrees only with the first conjunct, adjectival agreement is ungrammatical if the COORD cannot be uniquely labeled, as in (4). This is expected if the morphological realization of agreement is post-syntactic but Agree targets the COORD label.

(4) *Byl   unaven   pes   a kotě.
     was.PP.M.SG tired.M.SG dog.NOM.MA.SG and kitten.N.SG
     Intended: 'A/the dog and a/the kitten were tired.'

Furthermore, we predict that only elements that probe after the Spell-Out of COORD can agree with both conjuncts. Consequently, elements merged within the COORD, such as adjectival adjuncts and determiners, cannot agree with both conjuncts. This prediction is borne out: adjectival adjuncts must be SG, as in (5-a), and determiners that refer to plurality of both conjuncts, such as *oba* 'both' in (5-b), are ungrammatical.

(5) a. *mladí/mladý   muž   a žena
        young.MA.PL/M.SG man.MA.SG and woman.F.SG
        'a young man and a young woman' or 'a young man and a woman'

     b. ⊛ *oba/   *obě   kočka a kotě
        both.MI/ both.F/N.PL cat.F.SG and kitten.N.SG
        Intended: 'both cat and kitten'

References

Bhatt, Rajesh, and Martin Walkow. 2013. Locating agreement in grammar: An argument from agreement in conjunctions. *Natural Language & Linguistic Theory* 31:951–1013.

Bošković, Željko. 2009. Unifying first and last conjunct agreement. *Natural Language & Linguistic Theory* 27:455–496.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. Michael Kenstowicz, 1–52. Cambridge, MA: MIT Press.

Chomsky, Noam. 2013. Problems of projection. *Lingua* 130:33–49.

Farkaş, Donka, and Draga Zec. 1995. Agreement and pronominal reference. In *Advances in Roumanian linguistics*, ed. Guglielmo Cinque and Guiliana Giusti, 83–102. John Benjamins Publishing.

Heycock, Caroline, and Roberto Zamparelli. 2005. Friends and colleagues: Plurality, coordination, and the structure of DP. *Natural language semantics* 13:201–270.

Hiraiwa, Ken. 2005. Dimensions of symmetry in syntax: Agreement and clausal architecture. Doctoral Dissertation, MIT.

King, Tracy Holloway, and Mary Dalrymple. 2004. Determiner agreement and noun conjunction. *Journal of Linguistics* 40:69–104.

Landau, Idan. 2010. *The locative syntax of experiencers*. Cambridge, Mass.: MIT Press.

Longobardi, Giuseppe. 2008. Reference to individuals, person, and the variety of mapping parameters. In *Essays on nominal determination: From morphology to discourse management*, ed. Henrik Høeg Müller and Alex Klinge, 189–211. Amsterdam–Philadelphia: John Benjamins Publishing Company.

Marušič, Franc, Andrew Ira Nevins, and William Badecker. 2015. The grammars of conjunction agreement in Slovenian. *Syntax* 18:39–77.

Munn, Alan Boag. 1993. Topics in the syntax and semantics of coordinate structures. Doctoral Dissertation, The University of Maryland, College Park, MD.

Narita, Hiroki. 2011. Phasing in full interpretation. Doctoral Dissertation, Harvard University, Cambridge, Massachusetts.

Preminger, Omer. 2009. Breaking agreements: Distinguishing agreement and clitic doubling by their failures. *Linguistic Inquiry* 40:619–666.

Sudo, Yasutada. 2012. On the semantics of phi features on pronouns. Doctoral Dissertation, Massachusetts Institute of Technology, Cambridge, Mass.