

Morphosyntactic Aspects of Adjectival and Verbal First-Conjunct Agreement*

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Abstract: The paper defines and analyzes the morphosyntactic properties of first-conjunct agreement, which arises when an adjective or verb agrees with the highest/first conjunct of a coordinate noun phrase. This agreement pattern is derived by means of the syntactic operation Agree and a new postsyntactic mechanism which acts as a filter on Vocabulary Insertion within the framework of Distributed Morphology. The proposed filter is called Vocabulary Item Feature Harmony, and roughly consists of (phi-)feature identity between Vocabulary Items. The biaspectual analysis, and especially feature harmony, is used to understand and account for gradable and variable acceptability of first-conjunct agreement, as well as the distribution of this agreement pattern in relation to another agreement pattern, namely, masculine plural agreement (with the coordinate phrase as a whole). The investigation is focused on Bosnian/Croatian/Serbian first-conjunct agreement, but the findings could be extrapolated to similar cases in other languages.

1. Introduction

We use the term first-conjunct agreement (FCA) to refer to an agreement pattern where an agreeing element is related syntactically and semantically to a coordination of two noun phrases but agrees, in the morphosyntactic sense, with the first (i.e., leftmost or highest) conjunct of the coordinate noun phrase. The Conjunction-phrase (ConjP) structure we adopt is shown in Diagram 1, and the agreement pattern is illustrated in examples (1a–b). Agreement with ConjP (in masculine plural) will be referred to as plural agreement (or PIA; cf. Corbett's 1983 resolution-agreement rules). We follow Munn (1993, 1999), Marušić, Nevins, and Saksida (2007), Bošković (2009b), Benmamoun, Bhatia,

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and Polinsky (2010), Marušič and Nevins (2010), Demonte and Pérez-Jiménes (2012), Linde-Usiekniewicz and Rutkowski (2007), Willim (2012), Marušič, Nevins, and Badecker (2015), among others, in adopting the view that coordinate structures involved in FCA are X-bar structures headed by the Conj^0 *and*, in which the first conjunct asymmetrically c-commands the second.

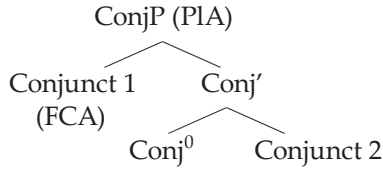


Diagram 1. Conjunction phrase ConjP

We call verbal FCA a case where a verb agrees with Conjunct 1 of a ConjP in Diagram 1, shown in (1a). By adjectival FCA we mean a configuration with an attributive adjective agreeing with Conjunct 1, and being “shared” (semantically and syntactically) by the two conjuncts; see Diagram 2 and example (1b) below.

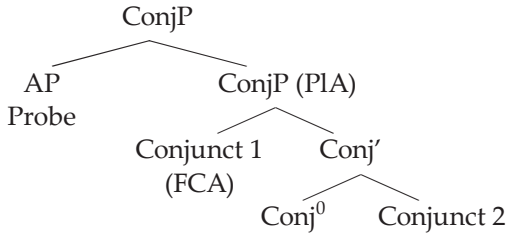


Diagram 2. Adjectival FCA

- (1) a. U šumi živi [lisica i vuk].
 in forest live_{3SG.PRES} fox_{F.SG} and wolf_{M.SG}
 ‘The/a fox and wolf live in the forest.’
- b. bolesna lisica i zec
 sick_{F.SG} fox_{F.SG} and hare_{M.SG}
 ‘the/a sick fox and hare’

FCA patterns, as well as similar partial agreement patterns, raise important theoretical issues and pose challenges for existing formal devices used in accounts of agreement phenomena. In this paper we address issues about the locality and scope of agreement operations, as well as the syntax-morphology interface and the roles syntax and morphology play in deriving agreement patterns, primarily FCA. We are also concerned with accounting

for inter- and intraspeaker variation and the gradient acceptability of FCA in Bosnian/Croatian/Serbian (BCS). In our investigation of FCA in BCS, we rely upon judgments provided by native speakers about the acceptability of the structures illustrated in (1a) above and about the interpretation of the structures illustrated in (1b). We collected responses from 16 speakers about the acceptability of FCA with a postverbal ConjP subject composed of two singular nouns with different gender features. The responses showed that the pattern in (1a) is possible, along with plural agreement (masc. pl.). We also tested whether speakers accept the interpretation whereby a singular agreeing attributive adjective in structures parallel to (1b) is semantically shared by both nouns, i.e., scopes over both conjuncts (we call this reading the FCA interpretation). The responses collected from 24 native speakers indicate that this interpretation is available, but also that it is subject to much inter- and intraspeaker variation. The conjunct nouns in our tests were singular feminine, neuter, or masculine (we avoided a masculine noun in the first conjunct whenever the agreement exponent on the adjective was syncretic between masc. sg. and masc. pl., as in *koji miris* ‘which_{M.SG} odor_{M.SG}’ and *koji mirisi* ‘which_{M.PL} odors_{M.PL}’); we did not mix animate with inanimate within a single ConjP, although we had pairs of both animate and inanimate nouns in our questionnaires.¹

On the basis of the data gathered, we argue that an adjective or a verb preceding and agreeing with a ConjP composed of two singular nouns can appear in two agreement patterns: first-conjunct agreement or (masculine) plural agreement. We proceed in section 2 to provide arguments that support the structures in Diagram 1 and 2 and arguments against an ellipsis analysis of FCA in BCS. In section 3 we introduce data organized in sets (subsections) according to the distribution of FCA and PlA. In section 4 we first provide a quick survey of several existing accounts of FCA, all of which are incapable of accounting for the intricacies observed in the BCS data, and then propose a morphosyntactic account of FCA which derives both agreement patterns in syntax through the operation of Agree (Chomsky 2000, 2001) and uses an additional mechanism operating as a postsyntactic filter on agreement exponents (but not morphosyntactic feature bundles created by Agree). We call this mechanism Vocabulary Item Feature Harmony, which consists of identi-

¹ We asked our informants to judge pairs of sentences like the following: *U šumi živi lisica i vuk* ‘In the forest lives a fox and a wolf’, *U šumi žive lisica i vuk* ‘In the forest live a fox and a wolf’. The second questionnaire (testing adjectival FCA) consisted of sentences with preverbal ConjP subjects (80%) and ConjP objects (20%); the responses show a general tendency for greater availability of the FCA interpretation in ConjP objects (i.e., informants hesitated with or rejected the FCA interpretation in subjects but accepted it more readily in object ConjPs). At this point, we cannot provide any information about speakers’ preferences in choosing either agreement pattern in production, since we did not run any production tests.

fying whether Vocabulary Items within a domain of morphological case are in (phi-)feature harmony or not. Section 5 tackles the difference in verbal and adjectival FCA patterns. We establish a correlation between morphological case and the different behavior of adjectives and verbs, but will leave a more complete account of this phenomenon for future research.

2. Ellipsis Does Not Underlie FCA

In this section we examine BCS data which we argue support the structures in Diagrams 1 and 2, because an ellipsis account of FCA would fail to predict certain grammatical and ungrammatical agreement patterns, as well as certain interpretive properties of ConjPs. We begin by arguing that verbal FCA does not result from clausal ellipsis.² Given the properties and behavior of collective predicates and expressions, i.e., their requirement for plural controllers, we show that ConjPs involved in FCA structures behave as semantic plurals, which would be unexpected if they resulted from the conjunction of two clauses and the ellipsis of the relevant parts in one of the clauses.³ The collective expression *zajedno* ‘together’ is illicit in clauses with singular subjects unless they are semantically plural, as shown by (2b) vs. (2c); the well-formedness of (2a) suggests that its ConjP subject is able to satisfy the semantic requirement of *zajedno* because it is a phrasal conjunction and semantically plural.

- (2) a. *Negdje u šumi zajedno živi lisica i lav.*⁴
 somewhere in forest together live_{3SG.PRES} fox_{F.SG} and lion_{M.SG}
 ‘Somewhere in the forest, live together the/a fox and lion.’
- b. **Negdje u šumi zajedno živi lisica i negdje u šumi zajedno živi lav.*

² This is actually independent of whether ConjP precedes or follows the verbal predicate. However, in our examples we use VS order since only in this order can FCA arise when the subject ConjP is composed of singular nouns. As shown by Willer-Gold et al. (this volume), productive and acceptable agreement patterns occurring with conjoined plural nouns range from PIA and FCA in both SV and VS orders, and last-conjunct agreement in SV orders.

³ Here we follow the argumentation used for other languages in Munn 1999, Marušič, Nevins, and Saksida 2007, Marušič and Nevins 2010, Demonte and Pérez-Jiménes 2012, Willim 2012, and Marušič, Nevins, and Badecker 2015.

⁴ The verb here can agree in plural as well (*Negdje u šumi zajedno žive lisica i lav* ‘Somewhere in the forest live_{PL} together a fox and a lion’). The availability of PIA in verbal contexts is shown below in examples (10c–d), (15c), (16c), (17a–b), and (18a–b) and discussed in more detail in section 5.

- (2) c. Jedan nevjencani par živi zajedno pet godina.
 one unmarried couple_{M.SG} lives_{3SG.PRES} together five years
 ‘An unmarried couple has been living together for five years.’

It is worth noting that *zajedno* is a collective predicate whose requirement (one which must be met at LF) to have a plural controller can be satisfied with semantic plurality and not necessarily with syntactic plurality in BCS. As shown in (2c) the subject is a singular NP which is semantically plural and capable of licensing *zajedno*. Thus, the well-formedness of (2a) as well as the ill-formedness of (2b) implies that the former is not derived from the latter and consequently that FCA in (2a) is not the result of clausal ellipsis. In contrast, other collective predicates/expressions, such as the intransitive *sresti se* ‘meet’, require a controller which is both semantically and syntactically plural. In (3a) we show that the ConjP is able to satisfy the semantic plurality requirement of *sresti se*; however, in (3b), with the FCA pattern on the verb, the syntactic plurality requirement of *sresti se* cannot be met. This behavior reveals an important fact about the FCA pattern: its origin must be syntactic and not postsyntactic. In other words, in order to understand the fact that FCA in (3b), based on ellipsis as in (3c), prevents the fulfilment of an LF requirement of the collective predicate *sresti se*, we have to postulate that FCA is established in narrow syntax by a mechanism that allows the verb to agree with the first conjunct.

- (3) a. U autobusu su se sreli Marija i njen šef.
 in bus AUX_{3PL} RECIP met_{M.PL} Maria and her boss
 ‘Maria and her boss met on the bus.’
- b. *U autobusu se srela Marija i njen šef.
 in bus RECIP met_{F.SG} Maria and her boss
- c. *U autobusu se srela Marija i ~~u autobusu~~ se
 in bus RECIP met_{F.SG} Maria and in bus RECIP
sreo njen šef.
 met_{M.SG} her boss

We now turn to adjectival FCA. We argue that the two conjunctions in (4a–b) are not syntactically identical, although their interpretations are synonymous. In other words, we claim that (4a) is not derived from (4b) by adjectival ellipsis.

- (4) a. bolesna lisica i zec
 sick_{F.SG} fox_{F.SG} and hare_{M.SG}
 ‘the/a sick fox and hare’

- (4) b. bolesna lisica i bolesni zec
 sick_{F.SG} fox_{F.SG} and sick_{M.SG} hare_{M.SG}
 'the/a sick fox and the/a sick hare'

Our first argument relies on the analysis of the syntactic and semantic properties of DP-internal conjunction proposed in Heycock and Zamparelli (2000, 2005; henceforth H&Z). H&Z offer a model which is able to derive two interpretations of nominal conjunction structures by positing that one and the same structure of DP underlies both interpretations. One of the interpretations, termed the split reading, is illustrated in (4a) above, and obtains trivially in (4b). The other interpretation, which H&Z name the joint reading, is illustrated in (5a) below, where the conjunction refers to a single person. The joint reading is not available in (4a) for pragmatic reasons: the two nouns cannot refer to a single animal (under normal circumstances). However, the joint reading ceases to be available in (5b) below where two complete DPs are conjoined, even though there are no pragmatic factors which would prevent the joint reference of the two nouns. In fact, H&Z observe that every time there is a repetition of an identical structure within DP-internal conjunction, the joint reading is lost (cf. *My Italian friend and Italian colleague*, H&Z 2005: 113). In (5c–d) we introduce BCS conjunction phrases parallel to the English ones in (5a–b). Note that the joint reading is lost in (5d) for similar reasons as for those in (5b).

- (5) a. My friend and colleague was late. (H&Z 2000: 5)
 b. a friend and a colleague (split reading only)
 c. jedan prijatelj i kolega (joint reading possible)
 'one friend and colleague'
 d. jedan prijatelj i jedan kolega (split reading only)
 'one friend and one colleague'

Consider now the coordinated noun phrases in (6):

- (6) a. taj grad i metropola
 that_{M.SG} city_{M.SG} and metropolis_{F.SG}
 b. njihova akcija i napad
 their_{F.SG} action_{F.SG} and attack_{M.SG}
 c. svirepo ubistvo i zločin
 cruel_{N.SG} murder_{N.SG} and crime_{M.SG}

All the conjunction phrases in (6) allow both joint and split readings,⁵ all involve FCA on the pre-nominal adjective (demonstrative, possessive, descriptive), and all involve two nouns with different gender values. These interpretations could be viewed as resulting from structural ambiguity, with the joint readings and FCA (hypothetically) derived from structures like the one in Diagram 2 and the split readings resulting (hypothetically) from full NP conjunctions and ellipsis of the adjective in the second conjunct (as in *taj grad i ta metropola*, ‘that city and that metropolis’).⁶ However, this view raises questions immediately. For example, it implies that the structure in Diagram 2 can produce only the joint reading. In our view, it would be highly stipulative to claim that BCS is exceptional in this respect, given that in many other languages the same structure has been argued to underlie the split reading (see H&Z). Moreover, in order to account for cases where PIA replaces FCA in ConjPs with the split reading (the pattern shown in section 3.2, example (14)), only the structure in Diagram 2 (where the adjective is merged above ConjP and not inside the conjuncts) can account for the wide scope of the adjective and its plural agreement (with the whole ConjP). Such cases show that the split reading can thus be derived by the structure in Diagram 2. Given the initial hypothesis that Diagram 2 allows FCA to be interpreted as having the joint reading and the fact that it also allows the split reading, we would have to stipulate that the latter reading correlates only with PIA. In other words, we do not see what mechanism could prevent the split reading from co-occurring with the FCA pattern in Diagram 2. Therefore, on grounds of simplicity, we claim that the same structure underlies both readings independently of FCA or PIA patterns.

In Begović and Aljović 2015 we point to an obvious problem for ellipsis-based accounts of FCA—predicting when ellipsis would be impossible. In fact, allowing ellipsis for certain cases makes it very difficult to disallow it when it arises under very similar conditions elsewhere. Thus, variably unacceptable adjectival FCA cases are extremely difficult to account for in terms of the unavailability of ellipsis. In BCS, the unacceptability of adjectival FCA varies among speakers considerably. However, we isolated one variable contributing to the ill-formedness of FCA: the difference in phi-features of the conjoined nouns. The greater the mismatch in phi-features between the con-

⁵ All allow singular and plural agreement on their predicate verbs (e.g., *To svirepo ubistvo i zločin nikad nije bio kažnjen/misu bili kažnjeni* ‘The cruel murder and crime has never been punished_{M.SC}/have never been punished_{M.PL}’). In the case of singular agreement, ConjP has the joint reading and counts as singular, not plural, and the coordination is located low inside DP/NP, which allows the calculation of (singular) for the whole ConjP. See H&Z for more details about the calculation of singular for DPs containing internal conjunctions.

⁶ This idea was suggested to us by an anonymous reviewer.

turning now to the interspeaker variation illustrated in (7), we suppose that the resistance of some speakers to having the adjective-sharing interpretation in examples such as (7b) could be partially explained by their resistance to using the structure in Diagram 2 above.⁸ This view seems to be supported by the fact that these speakers generally accept the adjective-sharing interpretation with scope-taking adjectives, which we assume appear higher than other adjectival elements even in simple noun phrases (interrogatives and quantifiers such as *koji* ‘which/what’ and *svaki* ‘every’).⁹ However, this could not be a complete account of the variation in question since even those speakers who do not readily accept FCA and adjective sharing in (7b) judge it as being significantly better in (7e). In section 4.2 below we propose a morphological mechanism with which the contrasts between (7e, b) and (7c, d) can be accommodated.

Finally, the contrast between the correlative conjunction *i... i* ‘both... and’ and the simple conjunction *i* ‘and’ illustrated in (8) reveals another important problem for an ellipsis approach to FCA. As we see in (8a–b), only the simple conjunction allows the adjective to scope over both conjuncts.

- (8) a. *i uplašena lisica i zec*
 and frightened_{F.SG} fox_{F.SG} and hare_{M.SG}
 ‘both the frightened fox and the hare’ (no FCA interpretation)
- b. *uplašena lisica i zec*
 ‘the/a frightened fox and hare’ (FCA interpretation available)

Let’s suppose for a moment that (8b) is the result of ellipsis, as shown in (9b), and that the FCA interpretation is due to the presence of a silent adjective in the second conjunct. Parallel structures without adjectival ellipsis would be well formed (we illustrate this only for the correlative structure in (9c)). Given the well-formedness of nonelliptical structures such as (9c), we would expect ellipsis of the second adjective in (9a–b) to be possible and for both

⁸ See Willim 2012: 245, fn. 13 for a similar view regarding the interpretative properties of parallel structures in Polish.

⁹ In connection with this, we note a similar variation observed by H&Z (2005) in languages that do not generally allow adjective sharing structures (i.e., the split interpretation in H&Z’s terminology) with singular conjuncts: the French or Italian equivalent of English *this boy and girl* is unacceptable. Even in these languages, some speakers seem to accept adjective sharing with singular conjuncts when the conjunction is preceded by interrogatives or quantifiers: ... *qualsiasi genitore e insegnante* ‘any parent and teacher’ (H&Z 2005: 28c). At this point we do not know whether the availability of FCA improves in plural for BCS speakers who reject (7b) as it does in languages like Italian and French, e.g., *Ces marins et soldats sont souvent ensemble* ‘These sailors and soldiers are often together’ (H&Z 2005: 11).

structures to have the adjective-sharing interpretation. However, as shown in (8a) above, the correlative structure lacks this interpretation. In short, an ellipsis account of FCA would have to allow ellipsis in (9b) and disallow it in (9a), which in our view cannot be done without ad hoc solutions. We admit that we still do not understand why the correlative *i* is not compatible with the structure in (9d) (based on Diagram 2), which could derive the adjective-sharing interpretation. However, what is of relevance here is the nonexistence of the elliptical structure in (9a), as signalled by the interpretation of (8a), which is unexpected given the well-formedness of (9c).

- (9) a. **i* uplašena lisica i ~~uplašeni~~ zec (cf. (8a), correlative conjunction)
 b. uplašena lisica i ~~uplašeni~~ zec (cf. (8b), simple conjunction)
 c. [i [ConjP [uplašena lisica] i [uplašeni zec]]
 and frightened_{F.SG} fox_{F.SG} and frightened_{M.SG} hare_{M.SG}
 ‘both the frightened fox and the frightened hare’
 d. *[i [uplašena [ConjP lisica i zec]]]

In conclusion, we continue to maintain that there is a single structure of ConjP capable of triggering first-conjunct agreement on a preceding verb and a preceding attributive adjective. FCA does not result from ellipsis but arises through grammatical (syntactic) mechanisms that target the first conjunct of ConjP as a source for agreement features. In the remainder of this paper we discuss the nature of these grammatical mechanisms.

3. FCA Puzzles

On the basis of the rather extensive literature on partial agreement phenomena,¹⁰ we make three descriptive cross-linguistic generalizations about agreement with the highest conjunct of a ConjP as recorded for a number of languages.

- (i) There is cross-linguistic variation with respect to the possibility of having a DP/NP-internal FCA in the context of singular conjuncts. Languages fall into two groups depending on whether they allow coordi-

¹⁰ See Munn 1999 and the references therein for Arabic dialects (in Standard and Saudi Arabic, where FCA occurs on verbs agreeing with post-verbal subjects, Munn observes that FCA cannot be freely replaced by PLA.); H&Z 2000 for English, Italian, French; Marušič, Nevins, and Saksida 2007, Marušič, Nevins, and Badecker 2015 for Slovenian; Willer-Gold et al. this volume for Slovenian and BCS; Bošković 2009b, Begović and Aljović 2015 for BCS; Kazana 2011 for Greek; Demonte and Pérez-Jiménez 2012 for Spanish; Linde-Usiekiewicz and Rutkowski 2007, Willim 2012 for Polish.

nation under a common determiner/adjective of singular nouns and agreement of the scoping determiner/adjective with the first conjunct. Languages like Italian and French do not allow such structures, while languages like English and Dutch do (cf. H&Z 2000).

- (ii) FCA has different distributional properties in various languages, and languages vary in the way they restrict DP/NP internal FCA. For example FCA in Dutch seems to be dependent on the choice of the determiner: it is acceptable with definites and demonstratives but marginal with indefinites (see H&Z 2000: 343, fn. 2). Other languages impose semantic restrictions on FCA (nouns in so-called accidental coordination allow FCA, while PIA appears with conjoined nouns that form natural coordination, i.e., denote a conceptual unit, as in *husband and wife*; see Dalrymple and Nikolaeva 2006 for Finnish, Willim 2012 for Polish). Still other languages impose further morphosyntactic conditions on FCA: in French and Italian only plural conjuncts allow FCA.
- (iii) In general, the two agreement patterns, FCA and PIA, show different distributional properties depending on the contexts (verbal vs. DP/NP-internal) in which they occur. When a verb agrees with a post-verbal subject, very often the two patterns are in free variation. In the nominal domain, however, the two patterns are most often in complementary distribution, or PIA seems generally unavailable.

In BCS, FCA and PIA show some of the properties observed in other languages: BCS belongs to the group of languages which allow DP/NP-internal (or adjectival) FCA both with singular and plural conjuncts; verbal FCA arises in VS order and is in free variation with PIA; adjectival FCA and PIA are in complementary distribution in the sense that when one pattern is acceptable, the other is not. We will focus on some properties of FCA in BCS which have not been previously discussed for other languages, namely (i) FCA may become ungrammatical without the possibility of a rescue strategy; (ii) ungrammatical FCA is in fact a case of ineffability; and (iii) morphological syncretism can save such ineffability (syntactic inputs without valid morphological outputs; Pesetsky 1997). These generalizations support the analysis we develop in section 4.

3.1. Distribution of FCA and PIA

The central puzzle of agreement with singular-conjunct phrases is that it can show two patterns (across languages, speakers, and constructions). In BCS, the FCA pattern occurs obligatorily on prenominal adjectives within ConjP, as shown by the contrast in (10a–b). The examples in (10c–d) show that FCA and PIA are in free variation when occurring on a verb in the VS order, while FCA

is not a grammatical option when the subject ConjP is preverbal. PIA becomes obligatory even with prenominal adjectives if required by a collective expression inside AP, as shown by the contrast in (10e–f). The conjunction phrases are given in brackets for clarity.

- (10) a. Koja [djevojka i mladić] dolaze? FCA
 which_{F.SG} girl_{F.SG} and boy_{M.SG} come_{3PRES.PL}
 ‘Which boy and girl are coming?’
- b. *Koji [djevojka i mladić] ... *PIA
 which_{M.PL} girl_{F.SG} and boy_{M.SG}
- c. U šumi žive/ živi [lisica i vuk]. PIA/FCA
 in forest live_{3PRES.PL}/lives_{3PRES.SG} fox_{F.SG} and wolf_{M.SG}
- d. [Lisica i vuk] žive/ *živi u šumi. PIA/*FCA
 fox_{F.SG} and wolf_{M.SG} live_{3PRES.PL}/lives_{3PRES.SG} in forest
 ‘The/a fox and wolf live in the forest.’
- e. jedno drugim očarani [princeza i vitez] PIA
 each-other_{INST} enchanted_{M.PL} princess_{F.SG} and knight_{M.SG}
 ‘the princess and knight enchanted with each other’
- f. *jedno drugim očarana [princeza i vitez] *FCA
 each-other_{INST} enchanted_{F.SG} princess_{F.SG} and knight_{M.SG}

Focusing on the distributional properties of the two agreement patterns and on their (un)acceptability, we classify the data that support our analysis into four sets:

Set I: ✓FCA, *PIA

Set II: *FCA, ✓PIA

Set III: both patterns are ill-formed

Set IV: verbal vs. adjectival FCA/PIA

3.2. Set I: ✓FCA, *PIA

Set I introduces adjectival FCA and PIA when in complementary distribution. The set is divided into three subsets: Ia, Ib, and Ic. In subset Ia, ConjP contains two singular nouns of different gender values (here fem. and masc., (11a–d)). The prenominal element in (11a–b) is an interrogative adjective, and its FCA agreement has been judged acceptable by all our informants. The acceptability of (11c) with a descriptive adjective is degraded for some speakers (marked

with %). Note that PIA would be unacceptable even for so-called natural pairs here, as shown in (11c).¹¹

Set Ia

- (11) a. Koja [djevojka i mladić] ... FCA
 which_{F.SG} girl_{F.SG} and boy_{M.SG}
- b. *Koji [djevojka i mladić] ... *PIA
 which_{M.PL} girl_{F.SG} and boy_{M.SG}
- c. %lijepa/ *lijepi [djevojka i mladić] %FCA/*PIA
 nice_{F.SG}/ nice_{M.PL} girl_{F.SG} and boy_{M.SG}
- d. *koi žena i muž *PIA
 which_{M.PL} wife_{F.SG} and husband_{M.SG}

In set Ib, ConjP has no gender mismatches: both nouns in (12) are feminine, so FCA is the only grammatical option. In set Ic, ConjP contains two nouns with different gender and number values, with a syncretic agreement exponent on the adjective in (13a). Again, FCA is the only grammatical pattern.

Set Ib

- (12) a. stara [kuća i štala] FCA
 old_{F.SG} house_{F.SG} and barn_{F.SG}
 'the/an old house and barn'
- b. *stare [kuća i štala] *PIA
 old_{F.PL} [house_{F.SG} and barn_{F.SG}]

Set Ic

- (13) a. kineska [vaza i klatna] FCA
 Chinese_{F.SG/N.PL} vase_{F.SG} and pendulums_{N.PL}
 'Chinese vase and pendulums'
- b. *kieski vaza i klatna *PIA
 Chinese_{M.PL} vase_{F.SG} and pendulums_{N.PL}

¹¹ Some such natural pairs can be modified by a plural adjective, but these cases are not productive and their occurrence and use vary among speakers, e.g., *moji/moja mama i tata* (my_{M.PL}/my_{F.SG} mom_{F.SG} and dad_{M.SG}). Interestingly, FCA is always available, PIA being only an alternative. This contrasts with the situation in Finnish where natural pairs induce plural agreement of the preceding adjective. See Dalrymple and Nikolaeva 2006 on natural and accidental coordination and agreement patterns in Finnish and three other languages.

3.3. Set II: *FCA, ✓PIA

As can be seen in (14) below, when the adjective phrase contains a collective expression which requires licensing from a syntactic and semantic plural expression, the only grammatical pattern is PIA. The distribution of adjectival FCA and PIA in the Set I and Set II data shows that whenever one pattern is acceptable, the other is not.

- (14) a. jedno drugim očarani [princeza i vitez] PIA
 each-other_{INST} enchanted_{M.PL} princess_{F.SG} and knight_{M.SG}
- b. *jedno drugim očarana [princeza i vitez] *FCA
 each-other_{INST} enchanted_{F.SG} princess_{F.SG} and knight_{M.SG}
 ‘the princess and knight enchanted with each other’
- c. međusobno zavađeni [dekanesa i
 with-each-other quarrelling_{M.PL} dean_{F.SG} and
 professor] PIA
 professor_{M.SG}
 ‘the dean and professor in conflict with each other’
- d. *međusobno zavađena [dekanesa i
 with-each-other quarrelling_{F.SG} dean_{F.SG} and
 professor] *FCA
 professor_{M.SG}

3.4. Set III: *FCA, *PIA

The data in (15a–c) below show that in some configurations neither pattern of adjectival agreement is grammatical. The behavior of PIA in (15b) is not surprising given its behavior in Sets I and II above (it requires independent motivation). Our primary concern is to understand why FCA fails and why PIA cannot “rescue” it in (15a–b). It is worth noting that ConjPs in Set III contain combinations of nouns with both gender and number mismatches.

- (15) a. *Velika/ *veliki [torba i koferi] nisu
 big_{F.SG}/ big_{M.PL} bags_{F.SG} and suitcases_{M.PL} NEG-AUX_{3PL}
 bili prodati. *FCA/*PIA
 been_{M.PL} sold_{M.PL}
 ‘A/The big bag and *(the) suitcases were not sold.’
- b. *Vesela/ *veseli [balerina i poštari]
 joyful_{F.SG}/ joyful_{M.PL} ballerina_{F.SG} and postmen_{M.PL}

- | | | | |
|------------------------|----------------------|-------------------------|-----------|
| nisu | bili | pozvani. | *FCA/*PIA |
| NEG-AUX _{3PL} | been _{M.PL} | invited _{M.PL} | |
- 'The joyful ballerina and *(the) postmen were not invited.'

3.5. Set IV: Verbal/Adjectival FCA Contrast

Finally, in Set IV we contrast adjectival and verbal FCA/PIA. As observed earlier for Sets I–III, when one agreement pattern on attributive adjectives is grammatical, the other is not, as shown in (16a–b). However, on verbs the two patterns are in free variation, as shown in (16c).¹²

- | | | |
|---------|---|----------------|
| (16) a. | Koja [djevojka i mladić] dolaze? | FCA (=10a) |
| | which _{F.SG} girl _{F.SG} and boy _{M.SG} are-coming | |
| b. | *Koji [djevojka i mladić] dolaze? | *PIA (=10b) |
| | which _{M.PL} girl _{F.SG} and boy _{M.SG} are-coming | |
| c. | U šumi žive/ živi [lisica i vuk]. | |
| | in forest live _{3PRES.PL} /lives _{3PRES.SG} [fox _{F.SG} and wolf _{M.SG}] | |
| | 'In the forest live/lives the/a fox and wolf.' | PIA/FCA (=10c) |

Furthermore, the same factor which degrades the acceptability of adjectival FCA in (15a–b) above, i.e., a number mismatch between the conjuncts, degrades verbal FCA too, as shown by the contrast in (17a–b).

- | | | |
|---------|--|------|
| (17) a. | *Kroz rupu je prošao jazavac i mačke. | |
| | through hole AUX _{3SG} passed _{M.SG} badger _{M.SG} and cats _{F.PL} | |
| | 'Through the hole passed a badger and some cats.' | *FCA |
| b. | Kroz rupu su prošli jazavac i mačke. | |
| | through hole AUX _{3PL} passed _{M.PL} badger _{M.SG} and cats _{F.PL} | |
| | 'Through the hole passed a badger and some cats.' | PIA |

The data in Sets I, II, III, and IV support the following generalizations: (i) both agreement patterns are grammatical in BCS, which has (morphosyntactic) mechanisms for producing both patterns; (ii) in the context of number mismatches no agreement pattern yields an acceptable structure on attributive

¹² We idealize the picture of verbal FCA/PIA somewhat, since we would like to understand the origin of the contrast shown in (16a–b) vs. (16c); in fact, there seems to be variation across speakers, with some having the two patterns in free variation and others in complementary distribution; the latter would thus prefer FCA in (16c) as well. See also fn. 13.

adjectives: there is no output for the input, i.e., the structure is ineffable; (iii) the two agreement patterns are in free variation only with verbs.¹³

4. Analysis

The discussion above has shown that FCA and PIA can arise in the conjunction configurations represented in Diagrams 3a–b. The key constituents of ConjP are the two conjuncts, which stand in a hierarchical relation with NP1 asymmetrically c-commanding NP2.¹⁴ We assume that an agreeing attributive adjective or verb c-commands ConjP from the position marked Probe. Our account is independent of the exact analysis of adjective placement within a noun phrase (adjunction per Bošković 2009a, or specifiers of functional projections per Cinque 2010).

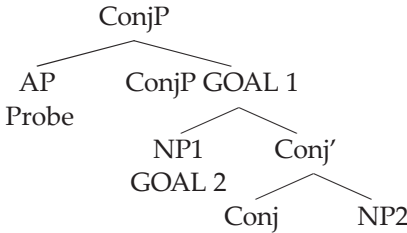


Diagram 3a. Adjectival Probe

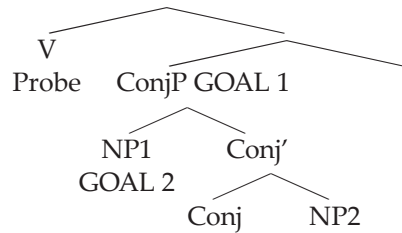


Diagram 3b. Verbal Probe

Before proceeding, we briefly summarize agreement properties with conjunction phrases in BCS. In this language adjectives agree in number (*sg.*, *pl.*), gender (*fem.*, *masc.*, *neut.*) and case, finite verbs agree in person and number, and participles (used in complex active and passive tenses) behave like adjectives and agree in number and gender. Mixed-person-and-number conjunctions have conflicting agreement requirements, whereby agreement obeys Corbett's (1983) resolution rules: if one of the conjuncts is first person,

¹³ We have not closely examined all aspects of verbal FCA, but we have observed variation among speakers and their use of verbal FCA/PIA, i.e., in (16) we observed that two of our informants have the two patterns in complementary distribution, just like with attributive adjectives. This variation requires further investigation.

¹⁴ The hierarchical relation of the conjuncts is easily shown by the fact that a variable in the second conjunct can be bound by a quantifier in the first conjunct, as in (i). See, however, Progovac 1999 for an opposing view on c-command between the conjuncts in a ConjP.

- (i) Svaka majka i njena beba su vakcinisane.
 every mother_{F.SG} and her_{F.SG} baby_{F.SG} AUX_{3PL} vaccinated_{F.PL}
 'Every mother and her baby have been vaccinated.'

son agreement must be used; if one of the conjuncts is second person, second-person agreement must be used. The rule for second-person agreement applies only if the first-person agreement rule is not applicable. Elsewhere, third-person agreement is used. As for number resolution, the application of Corbett's rule to BCS is simple: ConjP triggers plural agreement. However, as observed by Corbett and as witnessed by FCA patterns highlighted in this paper as well as by FCA in other languages, under certain circumstances number resolution rules can be disobeyed.¹⁵ BCS distinguishes three genders in singular as well as in plural, and when gender mismatches occur they call for resolution agreement in masculine. Gender resolution rules can also be disobeyed, as shown by the FCA data in this paper.

The data above show that ConjPs are semantically plural. We follow the proposal by Marušič, Nevins, and Badecker (2015) according to which the conjunction head *i* 'and', Conj⁰, calculates its number deterministically on the basis of the number values of its two arguments (conjuncts). This is a formalization of Corbett's number resolution rules. Conj⁰ then projects its feature values to ConjP, the number feature of which is valued as [plural] in this way. As suggested by the participial agreement in (18) below (feminine plural), Conj⁰ can compute a gender value if there is no conflict in gender between the two conjuncts (here fem. sg.). In contrast, when the two conjuncts have mismatching gender features, there will be a conflict which we believe can be resolved in two ways: in syntax, by allowing Conj⁰ to resolve the conflict per Corbett by calculating [masculine], or in the post-syntactic component, which implies that Conj⁰ is not able to do the gender calculation in conflict configurations and that the value for gender on ConjP is left unspecified. When the bundle [plural, no-value-for-gender] arrives in Morphology (PF), rules for Vocabulary Insertion can take care of it by selecting the most specified item for such a feature bundle, i.e., the one that best fits the feature specification produced in syntax. In this case it will be a plural-masculine exponent, since masculine is the unmarked gender value (see Halle's [2007] Subset Principle for Vocabulary Insertion). We are not committing ourselves to one or the other solution, since nothing in the present analysis hinges on the morphological scenario rather than the syntactic one.

- (18) Majka i njena beba su vakcinisane.
 mother_{F,SG} and her_{F,SG} baby_{F,SG} AUX_{3PL} vaccinated_{F,PL}
 'The mother and her baby have been vaccinated.'

¹⁵ We abstract away from numeral agreement, which can also disobey number resolution rules. See Marušič and Nevins 2010 for an account of agreement with conjoined numeral phrases in Slovenian.

We turn now to several accounts of FCA that illustrate approaches which place the greatest (if not all the) burden of deriving FCA on syntactic mechanisms. Thus, Marušič, Nevins, and Badecker (2015) and Bošković (2009b) focus on deriving verbal agreement with the closest conjunct in plural environments.¹⁶ The mechanisms that these authors use include standard assumptions about Agree (Chomsky 2000, 2001), adjusted so as to allow a second search for a matching Goal when the Probe cannot value all its (uninterpretable/unvalued) features. A verb with unvalued [number, gender] probes for a matching Goal in Diagram 3b above. It finds ConjP (in its c-command domain) with the value [plural], but this Goal has no value for gender. A second search is triggered for the unvalued gender of the verb to be able to find a valued gender. The second Probe finds another Goal, namely, NP1 in Diagram 3, which of course has a gender value. This is how FCA is derived in (19).¹⁷

- (19) Jučer su vakcinisane majke i djeca.
 yesterday AUX_{3PL} vaccinated_{F,PL} mothers_{F,PL} and children_{N,PL}
 'Yesterday the mothers and children were vaccinated.'

With singular conjuncts, however, the picture becomes radically different (a point recognized by Marušič, Nevins, and Badecker [2015]) since the agreeing verb (or adjective) does not show split agreement of this kind, but agrees with the first conjunct or with ConjP. These models are thus unable to produce singular FCA and have no way of explaining why the plural adjective in (12b), repeated in (20a), is unacceptable, while the plural verb is acceptable in (20b). We propose that both the adjective and the verb agree with the first conjunct in both number and gender (we assume no splitting/second Probe), and that an additional postsyntactic condition rules out otherwise grammatical plural adjectival agreement in (20a), while the same condition does not act on the participle in (20b).

- (20) a. *stare [kuća i štala] *PIA (=12b)
 old_{F,PL} house_{F,SG} and barn_{F,SG}
 b. Jučer su izgorile kuća i štala. PIA
 yesterday AUX_{3PL} burnt_{F,PL} house_{F,SG} and barn_{F,SG}
 'The/a house and barn burned down yesterday.'

¹⁶ Marušič, Nevins, and Badecker (2015) treat FCA and LCA in SV and VS orders in Slovenian, while Bošković (2009b) treats FCA in VS order in BCS.

¹⁷ Marušič, Nevins, and Badecker (2015) employ a split second Probe (with only one feature probing the second time). They also allow for an optional grammar according to which the Probe can stop and not launch a second search, thus getting the default masculine from ConjP.

We will mention briefly three more accounts based on the relation of Agree and one based on the preminimalist notion of government. Munn (1999) correlates FCA with the configuration of government and implicitly predicts that agreement under government will produce FCA if the target is a ConjP. As we have seen, BCS allows plural agreement as well as FCA with verbs in VS orders. Also, not all of the morphological aspects of FCA that we observed in BCS would be accounted for if only a syntactic mechanism were responsible for this pattern. Demonte and Pérez-Jiménez (2012) also rely exclusively on syntax to account for the distribution of FCA in Spanish (they discuss adjectival FCA). They use the main assumptions of the Agree relation as proposed by Pesetsky and Torrego (2007) and a modified model of phi-features that distinguishes index and concord phi-features on syntactic nodes and categories. They derive FCA in the following way: adjectives have concord phi-features, nouns have both index and concord phi-features, while ConjP has only index phi-features. FCA on adjectives in Spanish is obligatory because an adjective will find a Goal with matching concord features, and this Goal cannot be ConjP in Diagram 3a since this category is assumed not to have concord features. The adjective will search until it finds NP1 in Diagram 3a and will agree with it. Without going into further details of their analysis, we point out the problems this approach would face when accounting for BCS FCA: since adjectives have only concord features (presumably also in BCS; see Wechsler and Zlatić 2003), they are predictably unable to agree with ConjP. We showed that BCS adjectives can agree with ConjP (the PLA pattern). Willim's (2012) minimalist analysis in terms of the Agree relation for both adjectival and verbal FCA assumes there are two types of the conjunction *i* 'and' in Polish, one with inherent plural feature inherited by ConjP which appears in natural coordination, the other without feature values which appears in accidental coordination. The latter conjunction needs an outside trigger to compute its number features. Willim exploits the difference between adjectives and verbs, namely, the fact that only the latter have the person feature, in order to trigger the computation of a plural number on the "accidental" conjunction. Only verbs are able to do this, since adjectives have no person feature. This model predicts that adjectives will always agree with the first conjunct, since ConjP will never have any features and cannot count as a matching Goal for the probing adjective. In this model, PLA agreement of adjectives, recorded in accidental coordination in BCS, is not predicted.¹⁸ Finally, the last two models predict

¹⁸ Besides, agreement with natural-coordination ConjPs in BCS does not motivate the postulation of two different *i* conjunctions, since even such ConjPs have FCA patterns, as shown in (ia–b):

- (i) a. Njemu teče/ teku med i mlijeko.
 for-him flows_{SG}/flows_{PL} honey_{M,SG} and milk_{N,SG}
 'He's living a life of milk and honey.'

FCA to be acceptable in (15a–c) above, contrary to fact. In the following section we develop an account based on the relation of Agree and the possibility for a Probe to select among two equally available Goals.

Building on the analyses of agreement with conjunction phrases in Munn 1999, Marušič, Nevins, and Saksida 2007, Bošković 2009b, Demonte and Pérez-Jiménez 2012, Willim 2012, and Marušič, Nevins, and Badecker 2015, we argue on the basis of BCS data that a syntactic mechanism alone cannot explain all the distributional properties of FCA and PIA in BCS. We base our argument on the following two facts about FCA in BCS: (i) FCA and PIA exist in parallel (with the distributional properties summarized in section 3.5 above); and (ii) FCA failure looks like a case of ineffability, which can be saved by morphological syncretism. Therefore, the syntax must be allowed to produce both FCA and PIA in the configuration of Diagrams 3a–b, while an additional postsyntactic (morphological) condition governs FCA.

4.1. Goal 1, Goal 2, or Both?

Our account relies on standard assumptions about the minimalist relation of Agree as defined in Chomsky 2000, 2001. We chose the Agree model after considering the two fundamental issues regarding FCA and PIA in general: What component of the grammar decides which constituents determine the agreeing morphology of an adjective or a verb and how this decision is made. The data presented above suggest that two constituents can determine this agreement: ConjP as a whole and its first conjunct. As will become evident below, it is crucial that the mechanism of agreement be a syntactic one and that the choice of the Goal be made in syntax.

As standardly assumed, Agree is established by an unvalued feature, i.e., a Probe, which selects another instance of a matching and valued feature, i.e., a Goal, to agree with. The Goal selected is the most local Goal available in the Probe's c-command domain. Sometimes it is possible for syntax to provide a configuration where two Goals are equally available for one and the same Probe. Van Koppen (2005) exploits the idea of two equally local Goals in accounting for complementizer agreement in some varieties of Dutch. These complementizers are able to agree with both Goals in a configuration similar to that depicted in Diagram 3b above; i.e., they can enter FCA with Goal 2 or PIA with Goal 1. As pointed out by van Koppen (2005: 14), it follows from the definition of Agree in Chomsky 2000 that two Goals are equally local

-
- (i) b. Oni su prava slika i prilika njihovog
 they AUX_{3PL} true_{F,SG} image_{F,SG} and figure_{F,SG} his_{M,SG,GEN}
 oca.
 father_{M,SG,GEN}
 'They are the spitting image of their father.'

Given their LF impact, we conclude that in BCS neither pattern results from a choice made by morphology after narrow syntax. Instead, we adopt the null hypothesis that the Probe can indiscriminately choose either (matching) Goal to agree with and that its unvalued phi-features act together. This view is consistent with the free variation of verbal-agreement patterns and is capable of deriving all acceptable FCA and PIA patterns we have seen in Sets I–IV. However, it seems to run into problems with adjectival FCA, which cannot be freely replaced by PIA, as shown by the ill-formed examples in the Set I and Set III data. We now turn to accounting for unacceptable agreement patterns.

4.2. Accounting for Agreement Failure

The one-Probe-two-Goals approach adopted above predicts that all cases of FCA and PIA should be well formed. However, the data in Sets I and III contain cases of ill-formed FCA and PIA. If not semantically motivated, adjectival PIA is judged as unacceptable (22a–b)—the question is what makes FCA better than PIA in (22a). Nevertheless, FCA failure in (22b) is unexpected given that it cannot be correlated with a semantic requirement, as in (21b). Given that the number mismatch of the conjuncts in (22b) can be correlated with the degradation of FCA, while at the same time the second conjunct in Diagrams 3a and 3b cannot participate in the Agree relation since it cannot be reached by the Probe, we conclude that FCA failure in (22b) is not caused by Agree, i.e., in syntax.

- (22) a. *Koja/* **koji* *djevojka* *i* *mladić...* FCA/*PIA
 *which*_{F.SG}/ *which*_{M.SG} *girl*_{F.SG} *and* *boy*_{M.SG} (11a, b)
- b. **Vesela/* **veseli* *balerina* *i* *poštari...* *FCA/*PIA
 *joyful*_{F.SG}/ *joyful*_{M.PL} *ballerina*_{F.SG} *and* *postmen*_{M.PL} (15b)

We claim that the failure of FCA in (22b) is determined by morphological factors. The degraded status of FCA in (22b) is a matter of gradience: our informants were not equally sensitive to the difference in number of the two conjuncts while using FCA (most reject it, and a few judge it marginally acceptable). FCA is an agreement pattern that implies not respecting number resolution rules. Remember that the number resolution rule for BCS imposes plural agreement with all conjunction phrases, Sg+Sg, Sg+Pl/Pl+Sg, and Pl+Pl combinations. Our data show that the number-resolution rules can be disobeyed in Sg+Sg combinations (✓FCA in the data) and that speakers become less tolerant of the disobeyed rules in Sg+Pl combinations (degraded FCA in

the data).¹⁹ In contrast, PIA (resolution agreement) on adjectives when they agree with Sg+Sg and Sg+Pl ConjPs is equally degraded. These observations raise the following question: What makes speakers (of BCS) more tolerant of the disobeyed number resolution with adjectival agreement (i.e., of adjectival FCA) with Sg+Sg conjuncts than with Sg+Pl conjuncts? We believe that the answer to this question lies in the morphology and the features of Vocabulary Items representing agreement morphemes. Begović and Aljović (2015) account for FCA failure in terms of the lack of morphological harmony between Vocabulary Items within a given (morphological) domain. We propose to account for both degraded FCA and PIA on adjectives in terms of the same idea, using a more precise definition based on the concept of Vocabulary Insertion (in the sense of Distributed Morphology, Halle 1997, Halle and Marantz 1994, Harley and Noyer 1999) as well as the concept of feature instances linked by Agree (Pesetsky and Torrego 2007).

(23) Vocabulary Items Feature Harmony (VIFH)

- I Harmony holds between features of Vocabulary Items realizing a feature's multiple instances which appear in a link of case-feature instances.
- II Features are harmonious when their values are identical.

In the model of Agree proposed by Pesetsky and Torrego (2007), Agree creates a permanent link between a Probe and a Goal (their features), which "remains accessible to subsequent processes," i.e., the Probe-Goal relation is not forgotten after being created by syntax but remains visible. Furthermore, an Agree relation results in a feature (value) which is shared in two positions (the Probe's position and the Goal's position); such a feature-position pair is referred to as a feature *instance*. A feature *occurrence* is a feature that has not undergone Agree. We assume that a feature link (i.e., instances of a shared feature) is accessible for Vocabulary Insertion (i.e., visible on Vocabulary Items) and plays a crucial role in making feature harmony relevant. The definition in (23) states that the Vocabulary Items realizing instances of a shared phi-feature are expected to be in harmony and that they are in harmony when they have identical feature values. VIFH also states that Vocabulary Items (VI) are expected to be in harmony when they are marked for the same morphological

¹⁹ Number-resolution agreement in plural is obligatory for the Pl+Sg orders, too. We were focused on testing singular FCA and did not test agreement with this order, but it seems that FCA (this time in plural, since the first conjunct is plural) is not degraded, at least with nonanimate nouns (*Čije knjige i kompas nisu pronađeni?* 'Whose_{F,PL} books_{F,PL} and compass_{M,SG} have not been found_{M,PL}?'). A plausible explanation of this would be that the plural FCA and the plural resolution agreement overlap in this case.

case. This is necessary to exclude the possibility of nouns embedded within the conjuncts (and constituents agreeing with them) to be affected by VIFH. The configuration in (24) illustrates a configuration of features and Vocabulary Items involved in VIFH. Instances of a shared feature are shown within brackets (fem. sg. on *stara* and *kuća*, and Nominative on all VIs). If a feature does not have instances, it has not been shared (is not agreeing), i.e., it is a feature occurrence (fem. sg. on *štala*). The nominative-case feature is assumed to be shared on all the elements present in this ConjP (noun heads and the agreeing adjective).

(24)	star-a	kuć -a	i	štal -a	(=12a)
phi-features	[Fsg	Fsg]		[Fsg]	
Case	[Nom	Nom		Nom]	

The instances of fem. sg. shared by the adjective and the first conjunct are recognized as a link created in the syntax and accessible to the morphology. VIFH is triggered by this link. The feature occurrence [fem. sg.] on *štal-a* is treated as a feature instance, i.e., it is included in feature harmony since it is marked for the same morphological case. To put it intuitively, the definition of VIFH in terms of feature instances reflects the fact that there is nothing problematic about coordinating nouns with all imaginable mismatches in phi-features, but problems may arise if the coordination is preceded by an agreeing adjective. This is when feature harmony becomes relevant. Crucially, the harmony requirement affects the adjectival exponent and the exponent of the noun with which the adjective agrees but not the exponents on the two coordinated nouns, which do not agree. VIFH is trivially satisfied inside a noun phrase with an attributive adjective which agrees with a single noun, where the adjectival VI will be in harmony with the nominal VI (e.g., *crveni šalovi* 'red_{M.PL} scarves_{M.PL}'). What may cause problems is the presence in the noun phrase of another noun marked for the same morphological case but not in an agreement relation with the adjective-noun sequence preceding it. It is quite possible that the adjectival exponent will not be in harmony with the exponent on the second conjunct. Similarly, a plural-agreeing attributive adjective will also degrade feature harmony according to VIFH. Since the filter recognizes VIs only, it will recognize nonharmonious number values on the adjective and the first conjunct (although the adjective agrees with ConjP). VIFH is an attempt to formalize an intuition about the degraded patterns of adjectival FCA and PIA in Set III, that these are in fact cases of ineffable structures. It works as a filter. A sequence of VIs may happen to be feature harmonious, but there is no mechanism to repair them if they are not. In Table 1, opposite, we illustrate four configurations of harmony between VIs and their variable acceptability. The example in line 3 represents the Set III data.

Table 1. Harmonious and Nonharmonious Sequences

	Adjective (Probe)		NP1 (Goal2)		NP2	
1.	F } sg. } Nom }	Harmonious	{ F sg. Nom }	Harmonious	{ F sg. Nom }	✓
(12a)	star-a		kuć-a		štal-a	
2.	F } sg. } Nom }	Harmonious	{ F sg. Nom }	X	{ M sg. Nom }	%
(11c)	%lijepa-a		djevojk-a		mladić-Ø	
3.	F } sg. } Nom }	Harmonious	{ F sg. Nom }	X	{ M pl. Nom }	?*
(15b)	*vesel-a		balerin-a		poštar-i	
4.	F } pl. } Nom }	X	{ F sg. Nom }	X	{ F sg. Nom }	*
(12b)	*star-e		kuć-a		štal-a	

Cases of perfect harmony, as in (12a), are accepted without hesitation. Many of our informants judged the harmony in line 2 satisfactory no matter what the prenominal adjective is and even though the harmony is not perfect (due to a gender mismatch between the conjuncts). Most informants judged the harmony in line 3 unsatisfactory (a few judged it marginal with nonanimate nouns, while all judged it unsatisfactory with animate nouns).²⁰ The difference between lines 2 and 3 is in the number feature of the second conjunct. This is where we observed a sharp decline in FCA's acceptability. The contrast between line 2 and line 3 leads us to conclude that a nonharmonious number feature gives rise to greater unacceptability than the absence of harmony in

²⁰ A couple of our informants judged the harmony of the elements in line 2 as satisfactory only with certain adjectival elements (e.g., *koji* 'which', *svaki* 'every'). We are aware that many factors, among them the type of adjective in the shared position, animacy, or the Pl+Sg order of conjuncts (see fn. 19), can additionally influence the acceptability of agreement patterns. Experimental testing of speakers' judgments with a greater number of informants could shed more light on the intricate nature of various factors of intra- and interspeaker variation in FCA acceptability.

gender alone.²¹ In line 4 we illustrate the clearest case of unacceptable agreement (for all our informants) where harmony is absent between the first two VIs. Technically, these two VIs do not stand for instances of a shared feature, i.e., the plural-agreeing adjective agrees with ConjP not with the first conjunct. Still, we claim that VIFH is able to identify the adjectival VI and the VIs of the conjuncts as feature instances (as if involved in an agreement relation in syntax), given that they are all linked by morphological case and given that at the point of Vocabulary Insertion the feature instance corresponding to ConjP has not materialized as a VI, while the features of both conjuncts have.

Summarizing the analysis so far, we are able to derive FCA and PIA in syntax and with the definition of morphological harmony in (23) we are able to account for the unacceptable FCA and PIA (in Sets I and III). This is caused by the absence of feature harmony between agreement exponents. The only possibility for adjectival PIA to override VIFH is when it is required semantically (see (21a–b) and the Set II data).

We now turn to the examples in Set Ic, repeated in (25a–b), which provide additional evidence for a post-syntactic mechanism governing the acceptability of FCA and PIA patterns.

- | | | | | | | |
|------|----|------------------------------|----------------------|-----|---------------------------|------------|
| (25) | a. | kineska | vaza | i | klatna | FCA (13a) |
| | | Chinese _{F.SG/N.PL} | vase _{F.SG} | and | pendulums _{N.PL} | |
| | b. | *kineski | vaza | i | klatna | *PIA (13b) |
| | | Chinese _{M.SG} | vase _{F.SG} | and | pendulums _{N.PL} | |

The pair in (25a–b) supports VIFH by showing that Vocabulary Items themselves are involved in it. The well-formed FCA in (25a) is unexpected knowing that the structure of this example is identical to the ill-formed FCA in (21b), (15b), and Line 3 in Table 1 above: ConjP involves a singular and a plural noun. It would be impossible to account for FCA in (25a), (21b), and (15b) if syntactic agreement were the only mechanism for this agreement pattern. It is not even sufficient to propose that terminal nodes/feature bundles created by syntactic (agreement) operations are subject to feature harmony. Clearly, Vocabulary Items themselves are involved. FCA in (25a) is acceptable because the adjectival exponent (-a) is syncretic for [fem. sg. nom.] and [neut. pl. nom.] feature combinations, and as such it is in harmony with both nominal exponents at the same time.

Having developed our proposal for dealing with the data in Sets I, II, and III, we turn now to the contrast between verbal and adjectival FCA/PIA illustrated in Set IV.

²¹ This difference in the status of the two features seems to reflect the feature hierarchy proposed by Noyer (1992), according to which gender is ranked lower than number.

5. Adjectival vs. Verbal Probe

Concerning verbal agreement with a ConjP, a violation of VIFH occurs only when a verb agrees in singular (FCA) with a Sg+Pl ConjP (compare the acceptable agreement patterns in (26a–c) with the ungrammatical one in (28a)). As for attributive-adjective agreement, VIFH is violated (i) when an adjective agrees in plural with Sg+Sg and Sg+Pl ConjP, and (ii) when an adjective agrees in singular (FCA) with a Sg+Pl ConjP (compare the only acceptable pattern in (27b) with the unacceptable ones in (27a, c) and (28b)).

- (26) a. Kroz rupu **su** prošli jazavac i mačka.
 through hole AUX_{3PL} passed_{M.PL} badger_{M.SG} and cat_{F.SG}
 PIA, Sg+Sg
- b. Kroz rupu **je** prošao jazavac i mačka.
 through hole AUX_{3SG} passed_{M.SG} badger_{M.SG} and cat_{F.SG}
 FCA, Sg+Sg
- c. Kroz rupu **su** prošli jazavac i mačke.
 through hole AUX_{3PL} passed_{M.PL} badger_{M.SG} and cats_{F.PL}
 PIA, Sg+Pl (17b)
- (27) a. *koji djevojka i mladić *PIA, Sg+Sg (16b)
 which_{M.PL} girl_{F.SG} and boy_{M.SG}
- b. koja djevojka i mladić FCA, Sg+Sg (16a)
 which_{F.SG} girl_{F.SG} and boy_{M.SG}
- c. *veliki torba i koferi *PIA, Sg+Pl (15a)
 big_{M.PL} bags_{F.SG} and suitcases_{M.PL}
- (28) a. *Kroz rupu **je** prošao jazavac i mačke.
 through hole AUX_{3SG} passed_{M.SG} badger_{M.SG} and cats_{F.PL}
 *FCA, Sg+Pl (17a)
- b. ?*velika torba i koferi *FCA, Sg+Pl (15a)
 big_{F.SG} bags_{F.SG} and suitcases_{M.PL}

This difference between verbs and adjectives does not seem to be a categorial one. This is suggested by the behavior of participles used as NP modifiers, which behave exactly like other adjectives. Compare (29a) and (29b).

- (29) a. uplašena djevojčica i dječak FCA
 frightened_{F.SG} girl_{F.SG} and boy_{M.SG}
- b. *uplašeni djevojčica i dječak *PIA
 frightened_{M.PL} girl_{F.SG} and boy_{M.SG}

The contrast in the behavior of the participles in (29b) and (26a) reveals that a nominal environment makes the participle behave differently. Interestingly, ordinary adjectives behave like verbs when used predicatively, as shown in (30a–b).

- (30) a. Vidljiva je Evropa i Sredozemlje, a
 visible_{F.SG} is Europe_{F.SG} and Mediterranean_{N.SG} but
 nevidljiva Azija i Sjeverni pol.
 invisible_{F.SG} Asia_{F.SG} and North pole_{M.SG}
- b. Vidljivi su Evropa i Sredozemlje, a
 visible_{M.PL} are Europe_{F.SG} and Mediterranean_{N.SG} but
 nevidljivi Azija i Sjeverni pol.
 invisible_{M.PL} Asia_{F.SG} and North pole_{M.SG}
- ‘Europe and the Mediterranean are visible, but Asia and the North Pole are not.’

An element which defines the difference between NP-external and NP-internal environments is morphological case (at least in languages like BCS), to which we refer in the definition of VIFH in (23). We assume that items like the head noun and any agreeing head within its NP (adjectival, in principle) have a morphological case feature. All case features of adjectives/participles inside NP, together with the case feature of the head noun (which presumably percolates to the topmost maximal projection of NP) will become instances of a single shared morphological case feature (in the sense of Pesetsky and Torrego 2007) as the result of an Agree relation and valuation. The implications for VIFH and both patterns of agreement if a phi-Probe (i.e., the corresponding VI) is inside or outside a morphological case domain are represented schematically in Table 2, opposite.

The morphological-case domain is indicated by brackets. The difference between the verbal Probe in line 2 and the adjectival Probe in line 4 is in their position with respect to the morphological-case domain. The first is outside, the second is inside. When these Probes agree in plural, VIFH is not applicable to the former, only to the latter. In other words, PIA on a predicate is not subject to VIFH; PIA on an attributive adjective is. This is the core difference between the two Probes and the VIs realizing their features. We are aware that we are merely stating a correlation between the possibility of having PIA on predicates and attributive adjectives and the morphological-case domain. The correlation is supported by the data, although we do not quite understand why the correlation should hold. However, it seems useful for predicting variation across speakers of a single language and possibly between languages. For example, as we pointed out in fns. 12–13, some of our informants treat the verbal VI in line 2 of Table 2 in the same way as the adjectival VI in line

Table 2. NP-External and NP-Internal Agreement Patterns

	Probe		NP1	NP2	VIFH	Pattern
phi-Features	1. F.SG (verb)	a.	[F.SG]	M.SG]	✓	FCA (Goal2=NP1)
		b.	[F.SG]	M.PL]	*	FCA (Goal2=NP1)
	2. M.PL (verb)		[F.SG]	M.SG/PL]	NA	PIA (Goal1=ConjP)
MORPH. CASE			[]		
phi-Features	3. F.SG (adj.)	a.	[F.SG]	M.SG]	✓	FCA (Goal2=NP1)
		b.	[F.SG]	M.PL]	*	FCA (Goal2=NP1)
	4. M.PL (adj.)		[F.SG]	M.SG/PL]	*	PIA (Goal1=ConjP)
MORPH. CASE			[]		

4—namely, as subject to VIFH. For those speakers, the portion of VIFH’s definition that states “which appear in a link of case-feature instances” is not relevant. This variation suggests that instances of FCA, i.e., agreement patterns overriding resolution agreement rules in other languages, need not necessarily be subject to VIFH(-like) filters constrained or defined in the same way as the VIFH we propose for BCS. Similar morphological filters might be related to or even be a consequence of other morphological properties and features in a particular language.

Lines 1b and 3b of Table 2 pose a potential problem for this view. Note that in line 1b feature harmony is taken to be violated (by the second conjunct’s VI not being in harmony with the adjectival VI), which explains the unacceptability of FCA, as in (28a). The same explanation holds for the unacceptable FCA in line 3b, as in (28b). If the verbal VIs in lines 1a–b and 2 are outside the morphological case domain, we do not expect violations of VIFH, contrary to the situation in line 1b. We explain this apparent contradiction between lines 1b and 2 by assuming that at the point of Vocabulary Insertion VIFH is able to recognize the sequence of fem.sg.(verb)–fem.sg.(noun1) as two feature instances being in harmony. Since feature harmony is identified, any following VI marked for the same morphological case is expected to be in harmony with the first two VIs. The sequence of VIs in line 2, masc.pl.(verb)–fem.sg.(noun1),

is not identified as being in harmony, which is not problematic in this case: VIFH does not apply since the VI corresponding to the Probe is outside the relevant morphological-case domain.

Conclusion

Adopting a Distributed Morphology perspective and standard minimalist assumptions about the Agree relation, we have proposed a morphosyntactic account of agreement arising in verbs and adjectives when agreeing with conjunct phrases. Two agreement patterns emerge in these configurations: first-conjunct agreement and (default) masculine plural agreement. We have shown that their distribution can result from the syntactic Agree relation combined with a morphological filter based on feature harmony between Vocabulary Items—VIFH. The crucial part of our syntactic mechanism is the one-Probe-two-Goals approach, which enables us to derive both the first-conjunct pattern and the plural (resolution) pattern in the syntax and thus to explain the fact that both agreement patterns produce effects at LF. We have also argued that the complete distribution of the two agreement patterns cannot be captured by a syntactic mechanism alone, which motivated us to propose VIFH. We have argued that in BCS this morphological filter is tightly related to morphological case in the sense that any agreement exponent on the Probe is sensitive to VIFH if inside a domain determined by morphological case. This view allows us to understand the distribution of plural agreement on attributive adjectives, which we argue is filtered out by VIFH as nonharmonious. Plural agreement on verbs (and predicates in general) is not filtered out in the same way since verbs are outside a morphological case domain. We have also used VIFH to explain why first-conjunct agreement fails when nothing in the syntactic derivation should prevent it. The reason is degraded feature harmony caused by the exponent of the second conjunct noun. Further confirmation of a morphological mechanism governing first-conjunct agreement is provided by syncretic morphological exponents which are able to save first-conjunct agreement from failure by their ability to be in harmony with the exponents on both conjunct nouns simultaneously, even if the nouns differ in their number features.

References

- Begović, Muamera and Nadira Aljović. (2015) "Accounting for agreement patterns in coordinate noun phrases with a shared modifier". Markéta Ziková, Pavel Caha, and Mojmir Dočekal, eds. *Slavic languages in the per-*

- spective of formal grammar: *Proceedings of FDSL 10.5*. Frankfurt am Main: Peter Lang, 39–58.
- Benmamoun, Elabbas, Archana Bhatia, and Maria Polinsky. (2010) “Closest conjunct agreement in head-final languages”. Jeroen van Craenenbroeck, ed. *Linguistic variation yearbook 2009*: 67–88.
- Bošković, Željko. (2009a) “More on the no-DP analysis of article-less languages”. *Studia linguistica* 63: 187–203.
- . (2009b) “Unifying first and last conjunct agreement”. *Natural language and linguistic theory* 27(3): 455–96.
- Chomsky, Noam. (2000) “Minimalist inquiries: The framework”. Martin Roger, David Michaels, and Juan Uriagereka, eds. *Step by step: Essays on minimalist syntax in honour of Howard Lasnik*. Cambridge, MA: MIT Press, 89–115.
- . (2001) “Derivation by phase”. Michael Kenstowicz, ed. *Ken Hale: A life in language*. Cambridge, MA: MIT Press, 1–52.
- Corbett, Greville. (1983) “Resolution rules: Agreement in person, number, and gender”. Gerald Gazdar, Ewan Klein, and Geoffrey K. Pullum, eds. *Order, concord, and constituency*. Dordrecht: Foris, 175–206.
- Dalrymple, Mary and Irena Nikolaeva. (2006) “Syntax of natural and accidental coordination: Evidence from agreement”. *Language* 82(4): 824–49.
- Demonte, Violeta and Isabel Pérez-Jiménez. (2012) “Closest-conjunct agreement in Spanish DPs: Syntax and beyond”. *Folia linguistica* 46(1): 21–73.
- Halle, Morris. (1997) “Distributed morphology: Impoverishment and fission”. Benjamin Bruening, Yoonjung Kang, and Martha McGinnis, eds. *Papers at the interface*. Cambridge, MA: MITWPL, 425–49. [MIT working papers in linguistics, 30.]
- Halle, Morris and Alec Marantz. (1994) “Some key features of distributed morphology”. Andrew Carnie and Heidi Harley, eds. *Papers on phonology and morphology*. Cambridge, MA: MITWPL, 275–88. [MIT working papers in linguistics, 21.]
- Harley, Heidi and Rolf Noyer. (1999) “State-of-the-article: Distributed morphology”. *Glott international* 4(4): 3–9.
- Heycock, Caroline and Roberto Zamparelli. (2000) “Friends and colleagues: Plurality and NP coordination”. Masako Hirotani, Andries Coetzee, Nancy Hall, and Ji-yung Kim, eds. *Proceedings of the Thirtieth Annual Meeting of the North East Linguistic Society*. Amherst: GSLA, 341–52.
- . (2005) “Friends and colleagues: Plurality, coordination, and the structure of DP”. *Natural language semantics* 13: 201–70.
- Kazana, Despina. (2011) *Agreement in Modern Greek noun phrases*. PhD dissertation, University of Oxford.

- Linde-Usiekniewicz, Jadwiga and Paweł Rutkowski. (2007) "NP coordination as a new argument in the debate on the DP analysis of Polish". *Proceedings of WIGL 2006*. Madison: University of Wisconsin, Madison Department of Linguistics 103–17. [LSO working papers in linguistics, 6.]
- Lobeck, Anne. (1995) *Ellipsis: Functional heads, licensing, and identification*. New York: Oxford University Press.
- Marušič, Franc and Andrew Nevins. (2010) "Two types of neuter: Closest-conjunct agreement in the presence of '5&Ups'". Wayles Browne, Adam Cooper, Alison Fisher, Esra Kesici, Nikola Predolac and Draga Zec, eds. *Formal approaches to Slavic linguistics: The second Cornell Meeting*. Ann Arbor: Michigan Slavic Publications, 301–17.
- Marušič, Franc, Andrew Nevins, and Bill Badecker. (2015) "The grammars of conjunction agreement in Slovenian". *Syntax* 18(1): 39–77.
- Marušič, Franc, Andrew Nevins, and Amanda Saksida. (2007) "Last-conjunct agreement in Slovenian". Robert Compton, Magda Goledzinowska, and Ulyana Savchenko, eds. *Formal approaches to Slavic linguistics: The Toronto meeting*. Ann Arbor: Michigan Slavic Publications, 210–27.
- Merchant, Jason. (2001) *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.
- Munn, Alan. (1993) *Topics in the syntax and semantics of coordinate structures*. PhD dissertation, University of Maryland, College Park.
- . (1999) "First-conjunct agreement: Against a clausal analysis". *Linguistic inquiry* 30: 643–68.
- Noyer, Rolf. (1992) *Features, positions, and affixes in autonomous morphological structure*. PhD dissertation, Massachusetts Institute of Technology.
- Pesetsky, David. (1997) "Syntax and optimality". Diana Archangeli and Terence Langendoen, eds. *Optimality theory*. London: Blackwell, 134–70.
- Pesetsky, David and Esther Torrego. (2007) "The syntax of valuation and the interpretability of features". Simin Karimi, Vida Samiiian, and Wendy Wilkins, eds. *Phrasal and clausal architecture: Syntactic derivation and interpretation, in honor of Joseph E. Emonds*. Amsterdam: John Benjamins, 262–94.
- Progovac, Ljiljana. (1999) "Events and economy of coordination". *Syntax* 2(2): 141–59.
- van Koppen, Marjo. (2005) *One probe—two goals: Aspects of agreement in Dutch dialects*. Leiden: LOT. [LOT Dissertation Publications, 105.]
- Wechsler, Stephen and Larisa Zlatić. (2003) *The many faces of agreement: Morphology, syntax, semantics, and discourse factors in Serbo-Croatian agreement*. Stanford, CA: CSLI Publications.
- Willer-Gold, Jana et al. (this volume) "Conjunct agreement and gender in South Slavic: From theory to experiments to theory". *Journal of Slavic linguistics* 24(1).

Willim, Ewa. (2012) "Concord in Polish coordinate NPs as Agree". Markéta Ziková and Mojmír Dočekal, eds. *Slavic languages in formal grammar: Proceedings of FDSL 8.5*. Frankfurt am Main: Peter Lang, 233–53.

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