The Grammars of Conjunction Agreement in Slovenian

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Abstract: In this paper we report on the results of five experiments documenting the existence of three distinct grammars of conjunct agreement in Slovenian, found both within and across individuals: agreement with the highest conjunct, agreement with the closest conjunct, or agreement with the Boolean Phrase itself. We show that this variation is constrained, and that certain of these mechanisms can be blocked and/or forced depending on the properties of the conjuncts themselves. Finally, we offer the suggestion that the presence of intra-individual variation arises due to ambiguous properties of the primary linguistic data.

Keywords: Experimental syntax, conjunction, intra-individual variation, Closest-Conjunct agreement, First-Conjunct agreement, Slavic numerally quantified NPs

1 Introduction

Agreement has taken on an increasingly important role in shaping grammatical theory, providing evidence about constraints on structural, morphosyntactic and other relations (e.g. interactions between agreement and case; anti-agreement; and the syntactic locality and scope of agreement operations), about the functional properties/projections of phrasal heads (e.g., Baker, 2008), and about the interface between syntax and morphology (e.g., whether agreement is confined to syntactic or to morphological components, or is distributed across multiple components of the grammar; e.g., Bobaljik, 2008).

In this paper we address three issues that are of fundamental interest to the theory of agreement, including 1) What role do syntactic hierarchy, phonological contiguity, and argument status play in the calculation of agreement (either in general, or in the special circumstances that conjoined phrases create)? 2) How does Agree function with regard to the unity vs. independence of inflectional features (e.g., do the mechanisms that probe arguments for number and gender features operate jointly or independently, and are these alternatives mutually exclusive for a language; Béjar, 2003) 3) To what degree is syntactic variability attributable to how grammars strike a balance between competing grammatical mechanisms? The data we focus on derives from a controlled, experimental study of the morphosyntax of agreement between conjoined subjects and participles in Slovenian.

We focus on what Slovenian speakers do when confronted with scenarios such as computing participial agreement given a conjunction that mixes feminine plural and neuter plural:

(1) Radirke in peresa so se prodajal-? najbolje.
erasers$_{\text{FEM-PL}}$ and pens$_{\text{NEU-PL}}$ aux$_{\text{PL}}$ refl sold ? best
'Erasers and pens were the best sold items.'

Languages in which verbs and/or participles agree with their subjects in both gender and number vary somewhat in how they calculate the agreement properties of conjoined phrases. Notably, this variation occurs both across languages and within (Aoun, Benmamoun & Sportiche, 1991, 1994; Corbett, 1991, 2000). While prescriptive grammars of Slovenian (e.g. Multiple authors 1947: p 270., Remic-Jager 1980: p.122) list particular 'resolution rules' for such constructions (e.g. default masculine agreement), it has been noted since Bajec (1955) and Corbett (1983) that Slovenian speakers may opt for *partial agreement* – whereby only a single element of the conjunction -- say the feminine noun phrase 'erasers' in (1) -- controls participial agreement. Quite often, one and the same speaker allows multiple options (as noted also in Bajec 1955). In corpus studies conducted by Marušič, Saksida, and Nevins (2006), it was noted that partial agreement – both in preverbal and postverbal position – is a well attested option in Slovenian grammars:

(2) a. Radirke in peresa so se prodajal-**e** najbolje. (Slovenian)
erasers$_{\text{FEM-PL}}$ and pens$_{\text{NEU-PL}}$ aux$_{\text{PL}}$ refl sold-**FEM.PL** the best
b. Radirke in peresa so se prodajal-**a** najbolje.
erasers$_{\text{FEM-PL}}$ and **pens**$_{\text{NEU-PL}}$ **aux**$_{\text{PL}}$ refl sold-**NEUT.PL** the best
'Erasers and pens were the best sold items.'

In this paper we report the results of our attempts to understand variability in elicited production, by conducting experimental syntax with Slovenian adults. Our methodology includes the following elements (cf. Schütze 1996, Cowart 1998, Featherston 2007, Goodall 2008):

(3) a. Nonlinguist subjects
b. A clearly defined task
c. Factorial design for the construction of stimuli
d. Quantitative Results

We report on five experiments conducted in Nova Gorica, Slovenia, that were designed in order to understand the possible and impossible options when speakers engage in elicited production. The dependent variable in all of our studies was the form of agreement on verbal participles, which we focus on since finite verbs or finite auxiliaries do not show gender distinctions, while participles agree in Gender and Number. Slovenian has three genders and three numbers, of which the morphological endings are shown below:

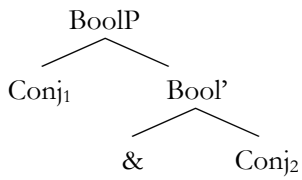
(4) Participle endings and the 3rd person auxiliaries:

	Masc	Fem	Neut		3rd person auxiliary
Singular	*ø*	*-a*	*-o*		*je*
Dual	*-a*	*-i*	*-i*		*sta*
Plural	*-i*	*-e*	*-a*		*so*

In addition to the 3-way number distinction, shown in (4), auxiliaries also show person, but since we were only looking at agreement with nouns, first and second person auxiliaries are not important for the present purpose. Given its nine possible morphosyntactic combinations of gender and number categories, Slovenian is a rich language to study conjunct agreement in which one can compute the combinations of two conjoined noun phrases. Moreover, the existence of three genders allows one to study conjoined genders while avoiding mixed conjuncts that already contain the 'default' gender. As virtually all languages that display agreement with conjuncts have a 'default' or resolution strategy involving picking a particular gender, Slovenian allows one to conjoin neuter and feminine and observe the results on particial agreement while being sure that any masculine that arises is truly due to a resolution strategy and not to the presence of any masculine DP within the conjunction.

The prescriptive tradition in Slovenian grammars dictates that whenever the gender of conjuncts is mixed, the default is to resort to masculine. However, in reality this is far from what speakers actually do. Like many other Slavic languages with relatively free word order, Slovenian allows the subject to either precede or follow the participle. Given this freedom, we will find it useful to speak in terms of two types of partial agreement strategies that are employed. *Closest-conjunct agreement* means agreement with the first conjunct when the subject is postverbal, and agreement with the last conjunct when the subject is preverbal. *Highest-conjunct agreement*, on the other hand, means agreement with the first conjunct, regardless of the relative placement of the conjunct with respect to the verb.

In what follows, we adopt the following structure of conjunctions (Munn 1993, among others), which are X-bar structures headed by a Boolean phrase, which can be either $Conj^0$ or $Disj^0$ (in the case or disjunctions headed by *or*). In these X' structures, the first conjunct asymmetrically c-commands the second conjunct, and the phrase as a whole is headed by the Boolean operator (e.g. $Conj^0$):

(5)


We argue that in Slovenian, a verbal participle seeking an agreement controller can choose from three logically possible feature-bearing XPs: $Conj_1$, $Conj_2$, or BoolP. In what follows we will report on the results of experiments demonstrating that all three options may be found in Slovenian. Before proceeding any further, we

must point out that studies of partial agreement within conjunctions must take care to demonstrate that the language in question is not one in which such agreement is uniquely the result of conjunction reduction or clausal ellipsis. Marušič, Nevins, & Saksida (2006) and Marušič and Nevins (to appear), using diagnostics discussed in Munn (1999), demonstrate that Slovenian partial agreement can occur when such elliptical operations would clearly not be at play:

(6) Krava in njena teleta so trčila druga ob drugo.
cow$_{FEM-SG}$ and her calves$_{NEUT-PL}$ aux$_{PL}$ collided$_{NEUT-PL}$ other into another
'A cow and her calves collided into each other.'

(7) a. Nonet je sestavljalo pet moških in štiri ženske.
nonet aux$_{SG}$ composed$_{NEUT-SG}$ 5 men and 4 women
'A nonet is composed of five men and four women'

b. Štiri ženske in pet moških je sestavljalo nonet.
4 women and 5 men aux$_{SG}$ composed$_{NEUT-SG}$ nonet
'Four women and five men composed a nonet'

In examples like (6) and (7), collective predicates show partial agreement with one conjunct, but semantically they must be predicated of the entire conjunct. The cow collided with her calves in (6) and one obviously needs nine people to compose a nonet, (7). Nonetheless, the second conjunct controls agreement in both (6) and (7) (quantified noun phrases trigger Nsg agreement, as discussd further in Section 6). Having demonstrated that partial agreement is the result of the agreement process itself, rather than ellipsis operations, this raises a number of intriguing theoretical issues, listed in (8).

(8) Theoretical issues raised by conjunct agreement:
a. Tradeoff between Hierarchical, Linear, and Relativized Closeness
b. Markedness among Gender Features
c. Asymmetric Dependence of Gender Agreement on Number Agreement
d. How can grammars differ in their treatment of these factors?

We conducted five experimental studies, with the goal of first establishing the range of grammatical variation possible in mixed-gender conjuncts both pre- and post-verbally, and then successively manipulating the internal structure of the conjunctions in order to curtail certain grammatical options. The structure of the experiments to be described below is as follows:

(9) Summary of Experimental Investigation of Slovenian Conjunct Agreement
Experimental Study 1: Effects of Mixing Genders
Experimental Study 2: Effects of Directionality
Experimental Study 3: Effects of Mixing Numbers
Experimental Study 4: The Curious Case of 5&Ups
Experimental Study 5: Closest Conjunct Agreement vs. Attraction with Modified NPs

In Experiment 1, described in Section 3.1, we investigated the effects of mixing genders. Experiments 1a and 1b compare the results of two plural conjuncts when the two are of the same gender and when they are of different genders. The findings are that three patterns of responses are attested, which correspond to the grammatical options of choosing the first conjunct, the last conjunct, or the BoolP as a whole as an agreement controller. As Experiment 1 focuses only on preverbal conjoined subject DPs, in Experiment 2, described in Section 3.2 looks at the result of postverbal conjoined subjects, and at cases of conjoining more than two noun phrases.

Experiment 2a looks at postverbal BoolPs and finds no instances of true "furthest conjunct agreement", and Experiment 2b looks at preverbal BoolPs consisting of three conjoined DPs and finds no instances of 'medial conjunct agreement'. In Section 4, we develop a model of the results of Experiments 1 and 2 in terms of choosing agreement controllers. We establish that there are three grammatical options whose main loci of variability involve tradeoffs between agreement with a DP that has a lexically specified gender and a separate derivational pressure to agree with a single XP for both number and gender. As the BoolP is hierarchically highest, and can compute its number semantically (though a DisjP could not), it will have a number value to furnish for the participle. But it will have no gender feature. We thus develop a model in which there are two

grammatical strategies: agreement with BoolP or agreement with a conjunct.

In Experiments 3 and 4 we find ways to block one of these strategies. Experiment 3, described in Section 5, introduces singular conjuncts. We posit a Consistency principle that renders agreement with an individual conjunct impossible when the number of BoolP as a whole is not matched. Experiment 4, described in Section 6, employs numerically-quantified noun phrases, which are phi-defective. We argue that the presence of phi-defective conjuncts renders BoolP unable to compute its own number, thereby forcing closest-conjunct agreement. Before concluding, Experiment 5 establishes that this is not an 'attraction' phenomenon, patterning differently from results of production studies involving linear agreement with an NP-modifier (Section 7). Section 8 then offers a suggestion of what other language-internal properties may give rise to closest-conjunct agreement, while Section 9 concludes.

2. Methodology and Overview of the Experiments

We conducted two types of studies: written elicitation and spoken elicitation, in five experiments. In this section, we provide the details of the methodology and experimental design, necessary preliminaries before turning to the theoretical model developed successively in each section below.

All participants in the experiment were native speakers of Slovenian, approximately 90 % of which were from the wider Nova Gorica region of Slovenia. The participants in the written elicitation study were high school students with no background in linguistics, and the participants in the spoken elicitation study were first-year university students with limited to no background in linguistics.

The studies involving written elicitation of participial agreement (Experiments 1a, 1b, 2a) were conducted using a fill-in-the-blanks style questionnaire, administered in parallel to a large group of high school students (n=31). There were three versions of the questionnaire, and for each participant, the order of sentences was randomized. The questionnaire consisted of 224 examples (144 test examples in each of the three questionnaires, composed of 72 examples with preverbal conjoined noun phrases and 72 examples with postverbal conjoined noun phrases). These 72 examples were composed by 4 examples for each condition, where the 18 conditions were: 9 conjoined singulars and 9 conjoined plurals, with all 3 genders crossed. In total, the factors were: 3 genders of first conjunct * 3 genders of second conjunct * 2 possibilities (both singular or both plural) * 2 possibilities (preverbal or postverbal) * 4 items = 144 test items. The 80 fillers had simple nonconjoined subjects of all genders and all numbers.

The studies involving elicited production of spoken agreement (Experiments 2b, 3b, 3a, 4, 5) involved the following procedure. On each trial, the participant sees a model sentence on the screen, with a masculine singular noun phrase as the subject. The participant then sees a new replacement noun phrase at bottom of screen, and their task is to produce an utterance in which they replace the subject of model sentence with a new noun phrase. Conditions (i.e. different combinations of conjuncts) are randomized, and the experiment contains irrelevant fillers with no conjunction in the replacement noun phrase. Responses were digitally recorded and tabulated afterwards according to their agreement endings.

Experiments 2b -- designed to test the effects of three conjuncts, and Experiment 3b -- designed to test the effects of mixed-number conjunctions, the results of both of which are reported separately below, were tested together, involving a total of 10 conditions, with 6 items per condition, yielding 60 test examples, alongside 60 fillers of all genders and all numbers, yielding a total of 120 sentences. The conditions for Experiment 2b involved four different combinations of three conjuncts, which were Npl+Fpl+Npl, Fpl+Npl+Npl, Npl+Mpl+Npl, Fpl+Fpl+Npl, while the conditions for Experiment 3b involved six different conjunctions of mixed number (e.g. one singular and one plural), and were Msg+Fpl, Msg+Npl, Npl+Msg, Fpl+Msg, Nsg+Fpl, Fpl+Nsg. Participants were tested individually (n=19).

Experiment 3a -- designed to investigate the effects of conjunction of two singular conjuncts -- involved 48 test examples, based on 4 examples per condition, with 12 different conditions. These 12 conditions were: 3 uniform gender conjunction of singulars (e.g. Fsg+Fsg), 3 uniform gender conjunction of plurals (e.g. Fpl+Fpl), and 6 mixed gender conjunction of singulars. They were randomized, along with 64 fillers of all genders and numbers, all of which were nonconjoined. This yielded a total of 112 sentences. Participants were tested individually (n = 12).

Experiment 4 -- designed to test the effects of conjunction of numerically-quantified noun phrases, involved 60 test examples and 66 fillers, yielding a total of 126 sentences. There were six examples for 10 conditions, where the conditions all compared numerically-quantified noun phrases ('5&Up') with lexical neuter singulars. The conditions were: conjunction with a Mpl or Fpl in either first or second conjunct position (e.g. Mpl+5Up, Nsg+Fpl), yielding 8 conditions (5Up or Nsg in one position, Mpl or Fpl in other position, and

relative position), plus two cases of self-conjunction (5Up+5Up, Nsg+Nsg). Fillers were all genders and all numbers plus 5&ups pre and postverbally, plus cases of QNPs. Participants were tested individually (n = 10).

Experiment 5 -- designed to compare closest-conjunct agreement with attraction effects, involved 42 test examples and 68 fillers, yielding a total of 110 sentences. The 42 test examples were composed of the following conditions: Nsg+Fpl (6 items), Msg+Fpl (6 items), Fpl+5up (6 items), Fpl+Npl (4 items), Mdu+Fdu (4 items), Msg+Npl (4 items), Msg+ Fpl with possessor (4 items), and Msg+ 5up with possessor (4 items), 5up+Fpl with possessor (4 items). This wide range of condition types was designed to elicit attraction using nouns syncretic for nominative and oblique case, as will be discussed in Section 7. Each condition had half of its items as attraction configurations and half as conjunction configurations. There were version of the experiment, with the same items appearing in conjunction in one list and as PP modifiers in the other list or as conjuncts followed by a possessive pronoun. Five subjects were tested individually for each list (total n=10).

We emphasize the importance of elicited production in exploring intra-individual variation. A speaker of a language may have certain preferences when judging a sentence metalinguistically that can be more sharply defined when presented with a clearly-defined task of producing a sentence himself, under controlled conditions. Nonetheless, like all experimental tasks with written or spoken production of over 100 sentences, fatigue effects may arise. In what follows, we report on the results of the studies with a specific focus on their theoretical implications, step-by-step, steering a particular eye towards accounting for the existence of inter- and intra-individual variation and alongside the cases in which this grammatical variability is greatly reduced or non-existent. As experimental noise in production tasks is part of the course, we henceforth only focus on response types that constitute ~10% or more for that condition. We affirm that this is a principled choice in experimentally-informed theory construction, as one does not want to 'overfit' the data by designing a theory that can easily handle the weakly attested response patterns. In what follows, we present the results visually with bar graphs, in order to faciliate ease of comparison between response patterns.

3. Initial experiments: The basic cases

3.1 Conjuncts with mixed genders

Recall example (1), in which a Npl and Fpl noun phrase were conjoined, and the question was which possibilities for gender agreement are actually found on the participle. Before we can proceed to an investigation of participial agreement of *mixed gender* conjunctions, however, we must first understand the possible patterns with *uniform gender* conjuncts. In what follows, we focus on conjunctions in which both conjuncts are plural.

Experiment 1a contained sentences such as (10)-(12), in which participants' written productions of the auxiliary and participial endings were elicited for uniform gender conjuncts occurring preverbally.

(10) Zvezki in učbeniki __ se podražil-__ že drugič letos.
Notebooks$_{M.PL}$ and textbooks$_{M.PL}$ __ refl raised-price-__ already second-time this year
'Notebooks and textbooks became more expensive already for the second time this year.'

(11) Gledališča in plesišča __ se zaprl-__ ob devetih zvečer.
Theather$_{N.PL}$ and dance-hall$_{N.PL}$ __ refl closed-__ at nine evening
'The theaters and dancehalls have closed their doors at nine in the evening.'

(12) Nedelje in srede __ namenjen-__ spanju.
Sundays$_{F.PL}$ and Wednesday$_{F.PL}$ __ meant-__ sleeping.
'Sundays and Wednesday are meant for sleeping.'

The results of this experiment are presented in Figure 1, where each bar represents a total of 124 responses (31 participants x 4 items per condition).

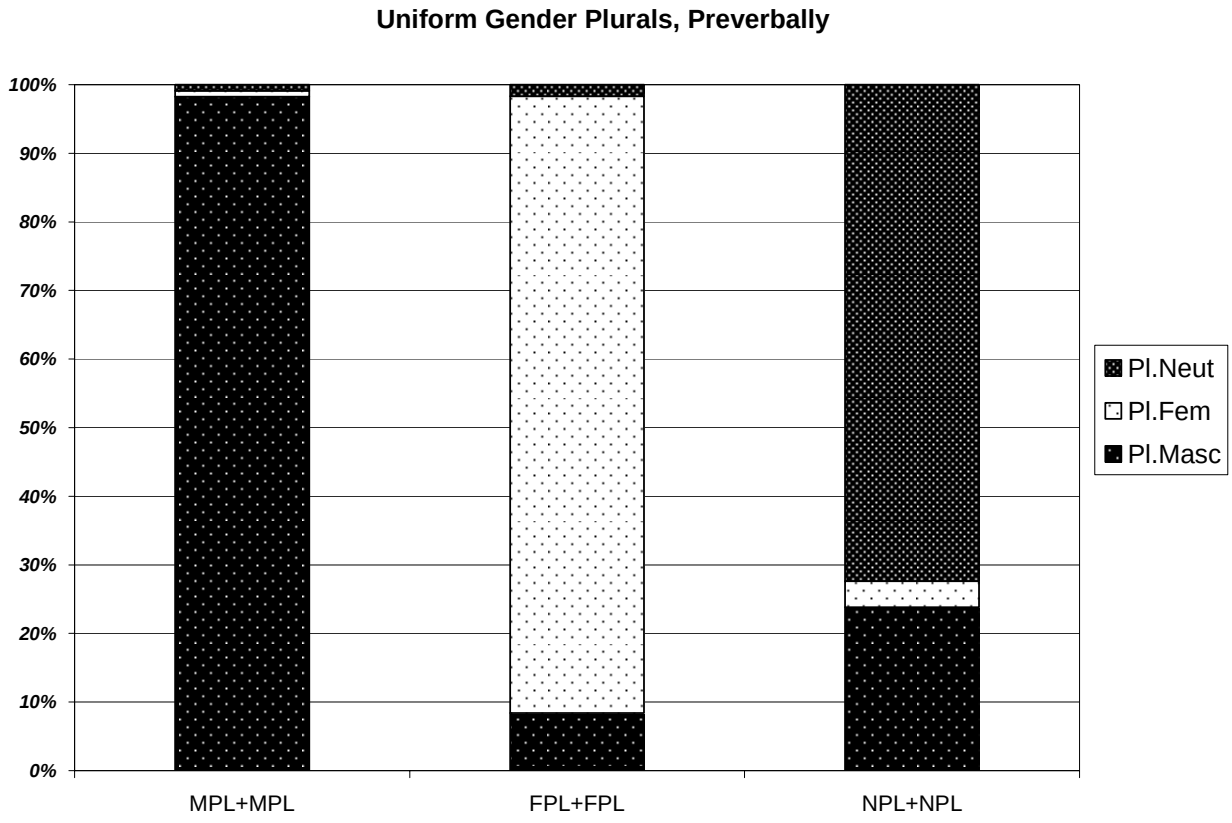


Figure 1: Experiment 1a results for participial agreement. Uniform genders conjoined preverbally, e.g. [[neuter plural + neuter plural]$_{BoolP}$ ... V]. Responses were collected using written elicitation. n = 31. Examples for the three conditions presented with the vertical bars are shown in (10)-(12).

As expected, Figure 1 shows that uniform gender conjuncts largely elicit participial agreement that corresponds to the gender of the two conjuncts, e.g. Fem in the case of Fpl+Fpl. However, these results also demonstrate where gender Agreement with BoolP Rears its Head. In particular, default masculine agreement occurs even when both conjuncts are same gender (much more strongly in the case of Npl+Npl), demonstrating that the 'resolution rule' of masculine agreement for all conjunctions is attested even in uniform gender conjunctions. Anticipating our theoretical model in Section 4, we take the case of default agreement to be the result of establishing agreement with the BoolP node itself, rather than with one of the individual conjuncts.

Having established that resolution to default masculine is a live option in even uniform gender conjunctions, we then examined the effects of mixed gender conjunctions, which have 6 possible combinations, given the three genders of Slovenian. To test the range of possible participial agreement productions with mixed-gender conjuncts, Experiment 1b presented example stimuli such as those in (13)-(18), in which both conjuncts were plural and the conjunction occurred preverbally.

(13) Steklenice in vrči __ se razbil-__ med pranjem.
bottles$_{F.PL}$ and jugs$_{M.PL}$ __ refl broken-__ during washing
'Bottles and jugs broke during washing.'

(14) Društva in zbori __ se pritožil-__ predsedniku.
societies$_{N.PL}$ and choruses$_{M.PL}$ __ refl complained-__ president
'Societies and choruses complained to the president.'

(15) Čolni in ladje __ se gnetl-__ v pristanišču.
boats$_{M.PL}$ and ships$_{F.PL}$ __ refl crowded-__ in port
'Boats and ships were crowding the port.'

(16) Prebivalci in okrožja __ sklenil-__ dogovor.
Residents$_{M.PL}$ and counties$_{N.PL}$ __ made-__ agreement
'Residents and counties made the agreement.'

(17) Drevesa in cvetlice __ zacvetel-__ petega maja.
trees$_{N.PL}$ and flowers$_{F.PL}$ __ bloomed-__ fifth May
'Trees and flowers bloomed on the fifth of May.'

(18) Sadike in zrna __ pognal-__ le v črni zemlji.
Seedlings$_{F.PL}$ and grain$_{N.PL}$ __ sprouted-__ only in black soil
'Seedlings and grains sprouted only in black soil.'

The results of this experiment are presented in Figure 2, where each bar represents a total of 124 responses (31 participants x 4 items per condition).

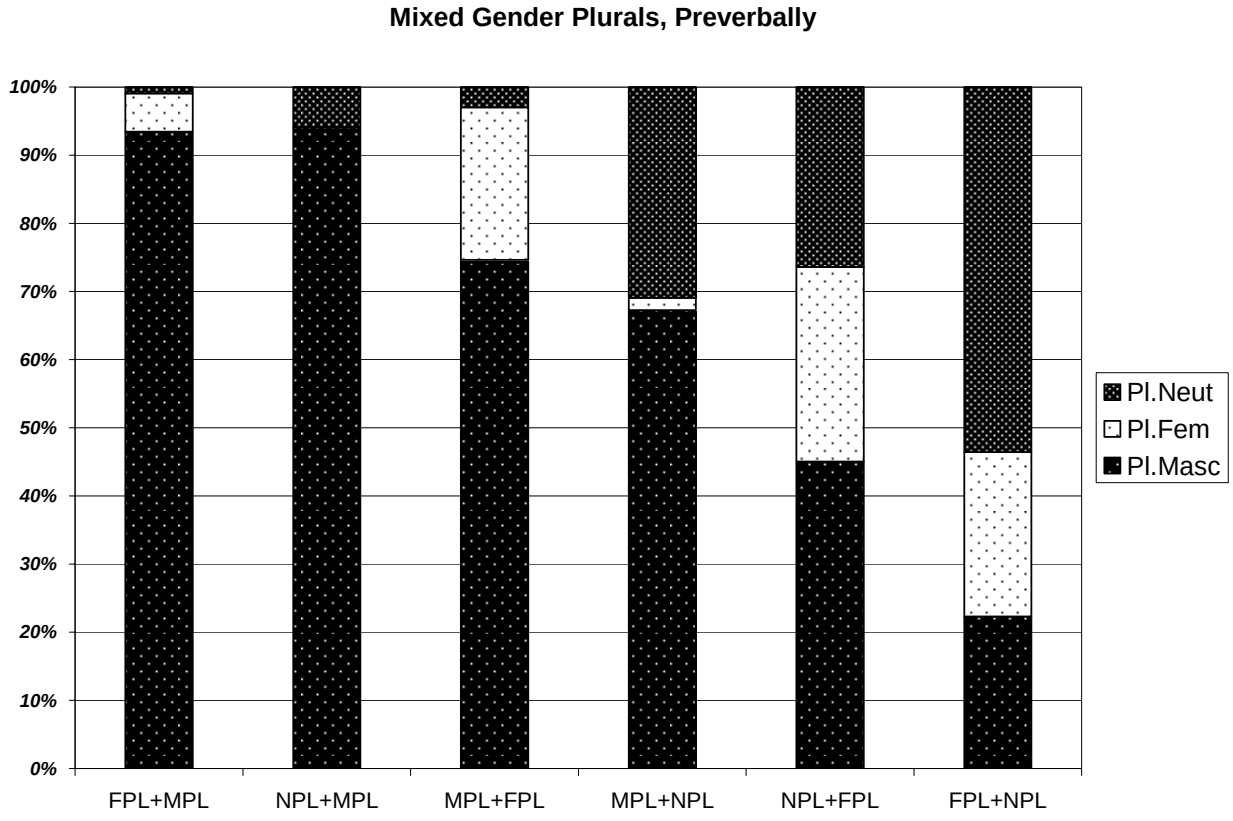


Figure 2: Experiment 1b results for participial agreement. Mixed genders conjoined preverbally, e.g. [[neuter.plural & feminine plural]$_{BoolP}$ ... V]. Responses were collected using written elicitation. n=31. Examples for the six conditions presented with the vertical bars are shown in (13)-(18)

The four leftmost columns in Figure 2 all contain a masculine plural conjunct. These cases, therefore, potentially involve both partial agreement (agreement with the masculine conjunct itself) or default agreement (masculine agreement as a result of agreement with BoolP). However, as shown in particular by looking at the rightmost two columns in Figure 2, we found three robustly attested patterns of agreement: Mpl agreement, Npl agreement, and Fpl agreement.

Once we note that masculine agreement with a [Masc + NonMasc] conjunction is ambiguous, as it could be either default agreement or first conjunct agreement, it becomes apparent that taken in tandem with the results of the [Neut + Fem] and [Fem + Neut] conditions there are three distinct response types:

(19) Three Ways of Computing Conjunct Agreement
a. Maximal-Projectionly: Default Agreement
b. Hierarchically: First Conjunct
c. Linearly: Closest Conjunct

In other words, in (18), targetting the BoolP itself yields Mpl participle agreement, targetting the highest conjunct leads to Fpl agreement, and targetting the linearly closest conjunct yields Npl agreement. As the rightmost two columns of Figure 2 show, these are all robustly attested.

These results speak against the analysis in Bošković (2009). Bošković claims that agreement with the last conjunct in preverbal position is derived because of the two following factors. Once agreement is established in the subject's base position, the uninterpretable features (i.e. gender) are deleted on the conjunct that entered into the agreement relation -- actually after they are matched. Secondly, because of an ambiguous targeting for the pied-piping movement (either only the first conjunct or the entire &P) the first valuation is cancelled, which results in a second instance of agreement this time with the second conjunct, which allows the entire BoolP to move to the preverbal position. In short, whenever the BoolP moves to the preverbal position, only last conjunct agreement is predicted to exist, which is as Bošković claims, true in SerboCroatian. Bearing in mind that Slovenian and SerboCroatian might differ in significant respects, we would still predict that the grammatical mechanisms allowing agreement with the last conjunct in the two languages are comparable if not identical. Thus contrary to the predictions made assuming Bošković (2009), we do find FCA in preverbal position in Slovenian.[1]

We adopt the position of Anttila (1997) that when there are multiple grammatical strategies that lead to the same surface result, that particular outcome may be greater numerically represented, as there are two distinct ways that essentially double the number of that outcome. For this reason, the four leftmost columns of Figure 2 have an overwhelming proportion of Mpl responses, as there are two distinct grammatical mechanisms in (17) that result in the same surface agreement.

Having demonstrated that Slovenian speakers literally show three different options for agreement in the case of mixed-gender conjunctions, the immediate question that arises is whether a *single individual* possesses all three grammars. That is, in the case of conjoined Fpl and Npl (in either order), does a single speaker literally allow (and produce) all three options? Figure 3 shows the results by participant for Experiment 1b, where each row represents a participant's 8 responses. As can be seen from Figure 3, only three of 31 subjects have a 'single grammar': most of them show intra-individual variation between two or three of the options in (19).

[1] The Slovenian data present at least two other problems for Bošković's (2009) analysis. Bošković claims that uninterpretable gender features are deleted on the NP, while the interpretable number features remain present even after valuation. He further claims that unlike gender on inanimate nouns, gender on animate nouns is an interpretable feature that doesn't delete at Match/valuation but remains in the derivation and even blocks agreement with the last conjunct. This prediction was not borne out. In case of the condition Fpl+Npl, tested in experiments 1b and 2b, the ratio between First and Last CA was 23% : 52% with inanimate conjuncts and 25% : 36% when the first conjunct was a [+animate] noun. In both cases LCA was more frequent than FCA.

Further, Marušič, Nevins, and Saksida (2007) report that examples where the coordinated subject is sandwiched between two verbal elements can trigger different agreement on the two probes, where the verbal element preceeding the conjunction agrees with the first conjunct, while the verb following conjunction agrees with the last conjunct, as in (i). Bošković (2009) cannot derive this. Last CA is a consequence of feature deletion on the first conjunct. But if the first conjunct has no features, it could not trigger agreement on the higher verbal element.

(i) Včeraj so **bile** [krave in teleta] **prodana**.
yesterday aux been$_{\text{FEM-PL}}$ [cow$_{\text{FEM-PL}}$ and calf$_{\text{NEU-PL}}$] sold$_{\text{NEUT-PL}}$
'Yesterday cows and calves were sold.'

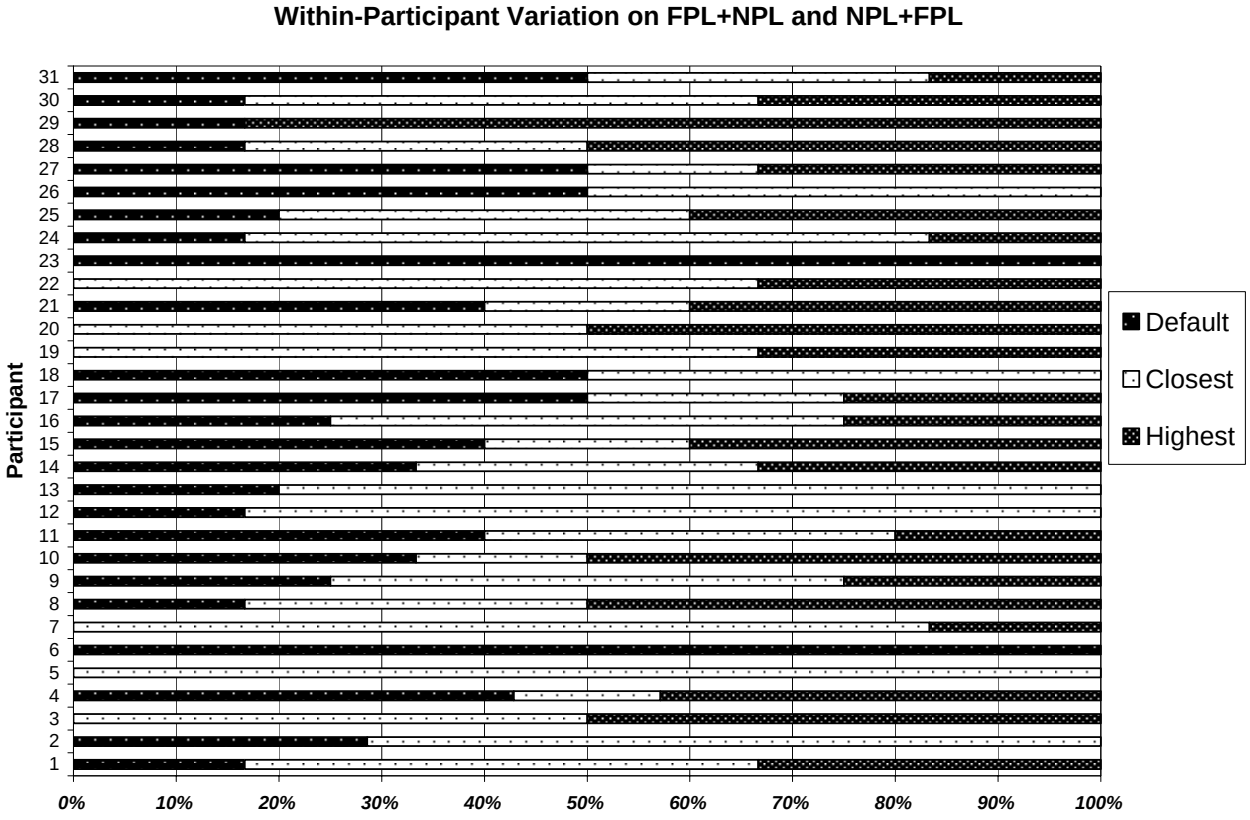


Figure 3: Exp1b results of mixed feminine and neuter plurals, by participant (n=31). Each row represents a participant and the proportion of three possible agreement endings produced.

Having established these three strategies both across and within speakers, we wish to show that there are only 3, and only these three. In other words, we wish to show that although syntactic optionality clearly exists in this domain, it is not unconstrained, and certain logically imaginable options are simply unattested in speakers' productions. In Experiment 2, we turn to the effects of directionality, investigating both postverbal conjunctions and conjunctions with three noun phrases.

3.2 Experiment 2: Effects of Directionality

We argued above that while there is highest conjunct agreement and closest conjunct agreement. Importantly, the latter of these converge in postverbal contexts: the highest conjunct *is* the closest conjunct. The particular statement of these grammatical possibilities, therefore, rules out two other mechanisms of agreement-controller choice: literal last conjunct agreement, and literal second conjunct agreement. If highest conjunct agreement and closest conjunct agreement are the only possibilities, then a postverbal conjunction will not allow agreement with the second/last/farthest conjunct. In other words, preverbal conjunction has richer possibilities than postverbal conjunction, due to the fact that two strategies converge in the latter. The three options are represented in (20)-(23), where (20-21) show that three possibilities exist when the conjunction is preverbal, but that only two possibilities exist when the conjunction is postverbal (22-23).

(20) [Krave in teleta] so odšla / odšle / odšli na pašo.
[cow$_{F.PL}$ and calf$_{N.PL}$] aux$_{PL}$ went$_{N.PL}$ / went$_{F.PL}$ / went$_{M.PL}$ on graze
'Calves and cows went grazing.'

(21) [Teleta in krave] so odšla / odšle / odšli na pašo.
[calf$_{N.PL}$ and cow$_{F.PL}$] aux$_{PL}$ went$_{N.PL}$ / went$_{F.PL}$ / went$_{M.PL}$ on graze
'Calves and cows went grazing.'

(22) Včeraj so odšla / * odšle / odšli [teleta in krave] na pašo.
yesterday aux$_{PL}$ went$_{N.PL}$ / went$_{F.PL}$ / went$_{M.PL}$ [calf$_{N.PL}$ and cow$_{F.PL}$] on graze
'Yesterday calves and cows went grazing.

(23) Včeraj so *odšla / odšle / odšli [krave in teleta] na pašo
yesterday aux$_{PL}$ went$_{N.PL}$ / went$_{F.PL}$ / went$_{M.PL}$ [cow$_{F.PL}$ and calf$_{N.PL}$] on graze
'Yesterday cows and calves went grazing.'

In Experiment 2a, we compared the 6 mixed gender condtions of Experiment 1b (in which they were preverbal) with their corresponding postverbal positions, as shown in (24)-(29).

(24) Pred leti __ se močno postaral-__ babice in dedki.
before years __ refl highly aged-__ grandmothers$_{F.PL}$ and grandfathers$_{M.PL}$
'Years ago, grandmothers and grandfathers aged quickly.'

(25) Zagnojil-__ __ se očesa in zobje.
fester-__ __ refl eyes$_{N.PL}$ and teeth$_{M.PL}$
'Eyes and teeth became festering.'

(26) Zadnjo večerjo __ predstavljal-__ piščanci in ribe.
last supper __ presented-__ chicken$_{M.PL}$ and fish$_{F.PL}$
'Chicken and fish were served for the last supper.'

(27) Zaradi vlage __ se pokvaril-__ avtomobili in kolesa.
because humidity __ refl broke-__ cars$_{M.PL}$ and bikes$_{N.PL}$
'Cars and bikes broke down because of humidity.'

(28) Najbolj __ bolel-__ prekletstva in rane.
most __ hurted-__ curses$_{N.PL}$ and wounds$_{F.PL}$
'Curses and wounds hurt most.'

(29) Lansko leto __ se zgradil-__ igralnice in igrišča.
last year __ refl built-__ casinos$_{F.PL}$ and playgrounds$_{N.PL}$
'Casinos and playgrounds were built last year.'

The results of this experiment are presented in Figure 4, where each bar represents a total of 124 responses (31 participants x 4 items per condition).

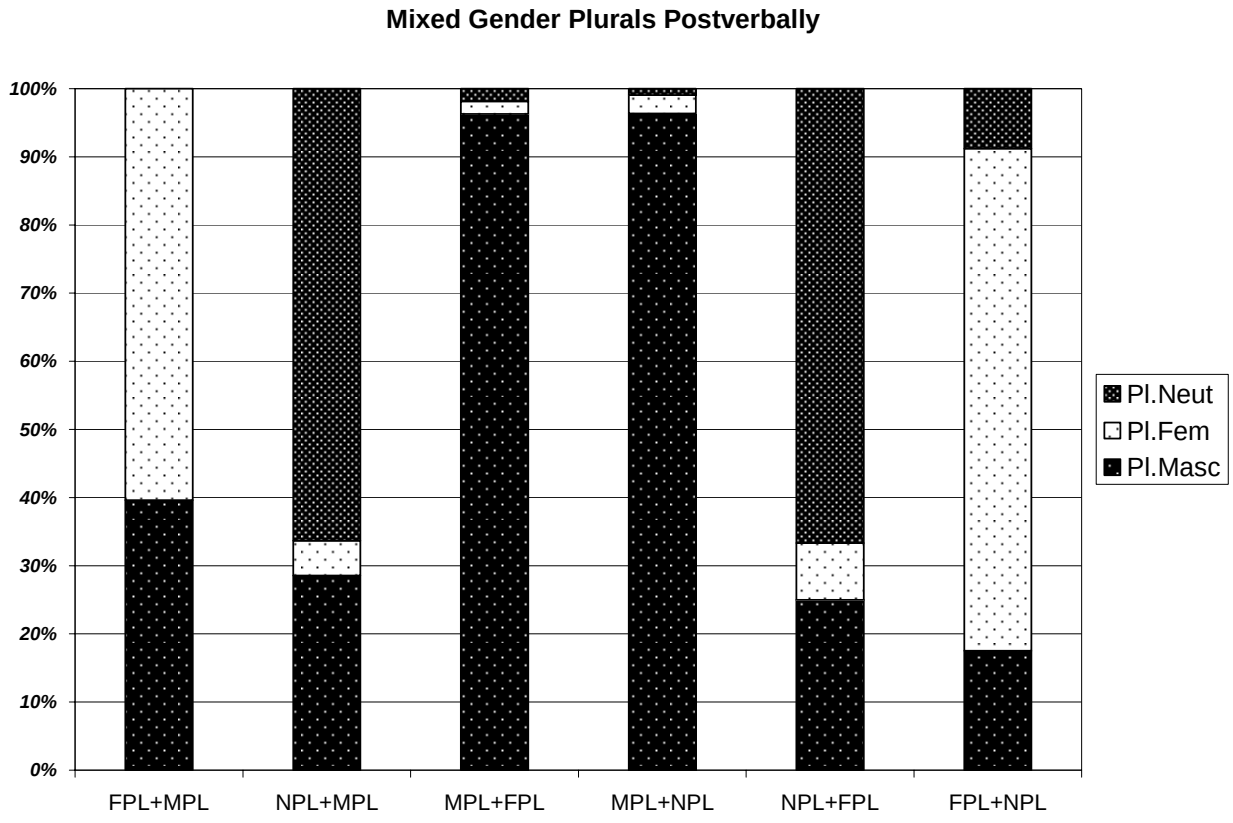


Figure 4: Experiment 2a results results for participial agreement. Mixed genders conjoined postverbally, e.g. [V ... [neuter plural & feminine plural]$_{BoolP}$]. Responses were collected using written elicitation. n=31. Examples for the six conditions presented with the vertical bars are shown in (24)-(29).

As shown in Figure 4, the existence of three possibilities in neuter + feminine combinations (in either order) suddenly decreases drastically, to the point where agreement with the farthest conjunct (i.e. the second conjunct in a postverbal conjunction) borders on being negligible. These results demonstrate that while (19) appears to let in a lot of options, there is no mechanism of 'context-free' last-conjunct agreement: agreement with the rightmost conjunct can only occur when it is linearly closest to the verb.

If highest and closest are indeed the only accessible conjuncts, then in preverbal contexts with three conjuncts (assuming a recursive Boolean Phrase Structure), the medial conjunct, being neither highest nor closest to the verb, will be inaccessible for agreement. Therefore, what about true 'second conjunct agreement'? To test this, we conjoined three noun phrases, and used the spoken elicitation procedure described in Section 2. To remind the reader, in this procedure, a model sentence appears with a masculine singular subject noun phrase (and hence no overt ending on the participle). Thereafter, a replacement noun phrase containing a coordination appears, and the participant must produce aloud the sentence as a whole containing the new subject noun phrase (and thereby having to adjust the verbal agreement).

To give medial conjunct agreement its best chance, we wanted to compare cases with no masculine noun phrases in the conjunction, thereby avoiding the influence of the default. In addition, as feminine agreement shows a slight tendency to be more robust in partial agreement than neuter based on Experiment 1, we wanted to make the putative medial conjunct controlling agreement a feminine noun phrase, flanked by two neuters. We thus compared sentences such as (30), where the replacement noun phrase is [Npl + Fpl + Npl], with cases in which a feminine plural noun phrase was actually found in the highest conjunct (31-32), and with a case in which no feminine plural conjunct at all was contained (33), to see if the rate of feminine plural agreement in (30) was really negligible.

(30) a. model sentence: Grad je pogorel po koncu vojne.
castle$_{M.SG}$ aux$_{SG}$ burned-down$_{M.SG}$ after end war.
'The castle burned down after the end of the war.'

b. target coordination: Naselja, graščine in mesta

villages$_{N.PL}$ villas$_{F.PL}$ and cities$_{N.PL}$

(31) a. model sentence: Čaj mu je olajšal bolečine.
tea him aux$_{SG}$ milded$_{M.SG}$ pains
'Tea made his pains milder.'

b. target coordination: Tablete, injekcije in zdravila
pills$_{F.PL}$ injections$_{F.PL}$ and medications$_{N.PL}$

(32) a. model sentence: Supermarket je počasi propadal.
supermarket$_{M.SG}$ aux$_{SG}$ slowly declined
'The supermarket was slowly falling apart.'

b. target coordination: Trgovine, podjetja in društva
shops$_{F.PL}$ companies$_{N.PL}$ and societies$_{N.PL}$

(33) a. model sentence: Travnik se je počasi izsušil.
lawn$_{M.SG}$ refl aux slowly dried
'The lawn slowly dried out.'

b. target coordination: Polja, travniki in močvirja
fields$_{N.PL}$ lawns$_{M.PL}$ and swamps$_{N.PL}$

The results are shown in Figure 5, where each bar represents a total of 114 responses (19 participants x 6 items per condition).

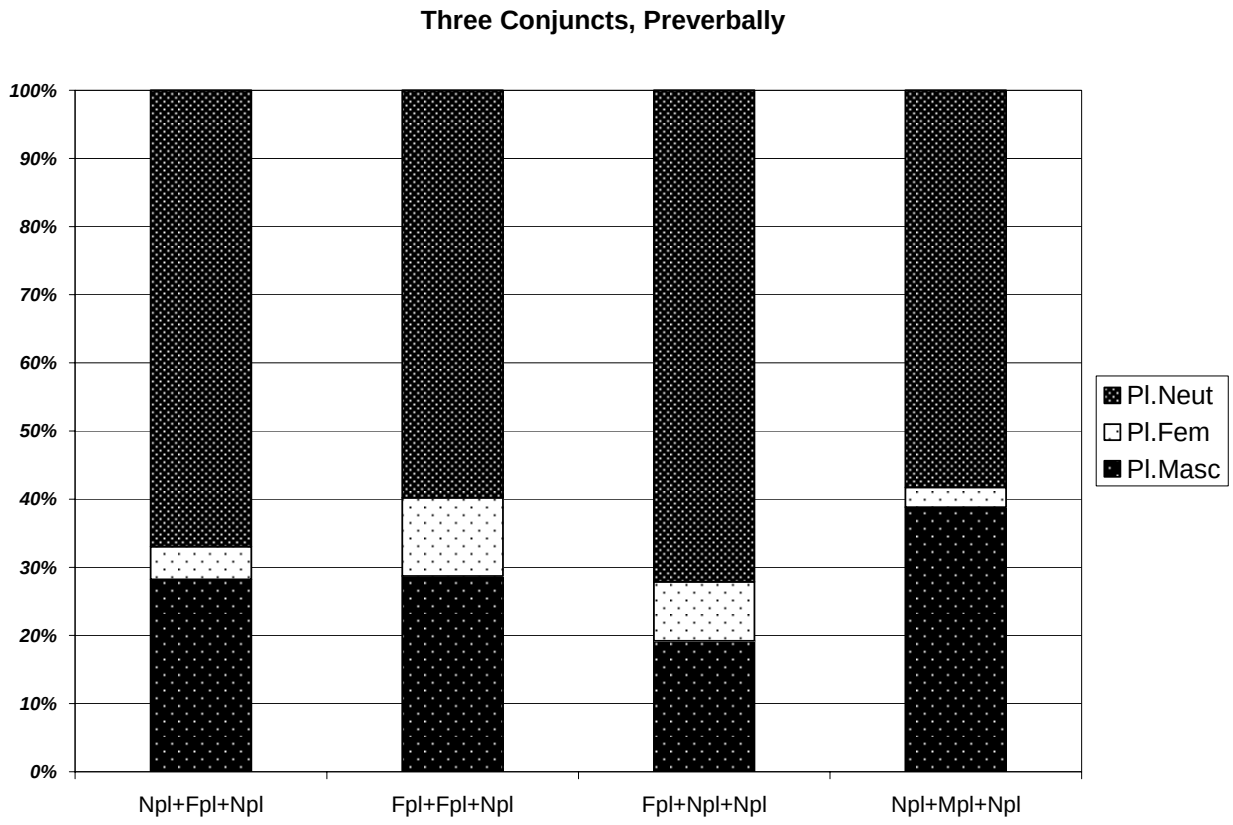


Figure 5: Experiment 2b results for participial agreement. Three Mixed genders conjoined preverbally, e.g. [[neuter plural and feminine plural and neuter plural]$_{BoolP}$ ... V]. Elicited spoken production experiment. n=19. Examples for the six conditions presented with the vertical bars are shown in (30)-(33).

As Figure 5 shows, there is virtually no medial conjunct agreement, even when we gave it the best chance possible, in the leftmost column (Npl+Fpl+Npl). The results in this leftmost column are undistinguishable from

the righmost column, which contains no feminine noun phrase at all. By contrast, when the feminine noun phrase is the highest conjunct, as in the middle two columns, it becomes accessible for agreement. This comparison demonstrates that, as (19) posited, there are three, but only three options for conjunct agreement in Slovenian, and 'second' conjunct, defined in absolute terms, is not one of them.

To summarize so far, Experiment 1b firmly established that Slovenian speakers do produce agreement with only one of the conjuncts within a noun phrase, but that it is not a random grab: only the hierarchically highest or linearly closest conjunct is available. Experiments 2a and 2b ruled out the possibility of stating this options in other logically possible grammatical terms, such as 'second' or 'last'. We now turn to a theoretical model of the mechanisms underlying this restricted variation.

4 Derivational model in terms of φ-Probes

Having firmly established the existence of intra-individual and inter-individual variation through experimental studies, we now turn to the question of the formal mechanisms underlying this variability. In particular, why should agreement with conjoined noun phrases be an area of the grammar that displays variation? We turn to a discussion of a theoretical model in terms of agreement, that crucially capitalizes on the fact that conjunctions are headed by a Boolean Phrase.

We assume that, as in all headed phrases, a Conj head projects its own values to BoolP, the maximal projection. A Conj head can deterministically compute its own number according to the number values of its two arguments. In particular, a Conj head is a function that requires inspecting the phi-features of both of its arguments. This function has the following specification in Slovenian:

(34) Computation-of-Number-Feature by Conj head in Slovenian:
If either one of its arguments is [-singular], its output is plural; otherwise, its output is dual.

In contrast to its number feature, however, a Conj head cannot compute its own gender feature on the basis of the individual conjuncts. We argue, therefore, that BoolP has a number value according to the function specified above, but literally lacks a gender feature, as shown in (35)

(35) No Computation-of-Gender-Feature by Conj head in Slovenian:
A Conj head in Slovenian cannot compute its own gender feature

As a consequence, when the Agreement process targets BoolP specifically, it will find a value for gender, but no value for number. The default masculine gender that is found on the participle in such cases reflects, we argue, default insertion of this feature into the matrix of phi-features of the participle, as discussed in more detail below.

We follow the two-step approach to agreement (Robinson 2008: Chapter 4; and Benmamoun, Bhatia, and Polinsky 2010; see, for a related but different approach, Bobaljik 2008), by which the *establishment* of an Agree relation between two XPs occurs in the syntax, but the actual *copying* of features from Goal to Probe takes place at a later step.[2] Call these two steps *Agree-Establishment* and *Agree-Copying.* Agree-Establishment takes place within the syntax (and occurs, in the cases at hand, between the participle and a nominative subject ConjP). We propose that Agree-Copying, however, can be delayed until PF (i.e. following linearization).

This variation in timing is the mechanism underlying the variation in terms of which of the two conjunct is targeted for agreement: when the grammar goes for a single conjunct, it can be either the highest or the closest conjunct. We propose that this variability is due to variation *in the timing of Agree-copying*. Specifically, when agreement-copying occurs *after* linearization, there is no way of knowing which of the conjuncts is the highest since after linearization there is no internal structure to the conjunct. In this case, the *closest* conjunct will be chosen. If, by contrast, agreement copying occurs before linearization, then the highest conjunct will be chosen. In both cases, verb probes the most accessible conjunct, which at the relevant point of the derivation is stated in terms of dominance but not precedence (before linearization) or precedence but not dominance (after linearization).

[2] This two-step procedure for agreement enables transitivity of feature-copying, e.g. *Q* establishes Agree with *R, R* establishes agree with *S*, and subsequently, copying of features from *S* to *R* and then from *R* to *Q* enable *Q* to 'indirectly' bear the features of *S*, as argued by Pesetsky & Torrego 2007, for example.

Recall above that when the Agree-Copy process targets BoolP specifically, it will find a value for gender, but no value for number. One way of 'avoiding' this last-resort, default insertion of phi-features that results from agreement with the BoolP itself – a projection that lacks gender features – is to instead carry out copying with one of the individual conjuncts, which of course do carry their own gender features. We propose that the ultimate source of variability within conjunction agreement therefore reflects an optionality between strategies of supplying gender features: either through default-value insertion, or by targetting one of the individual conjuncts within the BoolP. In other words, both options (BoolP or a conjunct) are grammatically possible. We turn to a description of these strategies in more formal detail.

As participles need to value their features for both number and gender, we argue that one of the key loci of variability is whether number and gender must probe together. As the work of Béjar (2003) argues quite convincingly, there are many languages in which these two features may be valued through separate instances of the *Agree* operation. Within Slovenian, when number and gender value are both valued together in a single step, the result may be (an attempt at) agreement with BoolP for both number and gender. By contrast, when they are valued separately, the result is agreement with BoolP for number, but with an individual conjunct for gender. The three separate agreement strategies in (19) are described in subsections 4.1, 4.2, and 4.3.

4.1 When Agreement Targets BoolP First (and Only)

One of the grammars of Slovenian conjunct agreement exhibits a preference for number and gender to probe together. The steps may be illustrated as follows. First, the participle initiates an *Agree* relationship with the subject noun phrase, which is headed by BoolP, attempting to copy both number and gender. It inspects the matrix of number and gender features on the maximal projection BoolP, and successfully copies the number value of BoolP, whatever that may be as a consequence of the function specified in (34). However, upon inspecting the matrix of phi-features on BoolP, it finds an empty value for gender, as there is no computation of gender by Conj (35). As a result, a value must be inserted by default on the participle. We propose that the default value for gender in Slovenian is context-sensitive, depending on the number feature already present on the same head. In cases of a [-singular] head, the default gender feature is [+masculine], and this is what must be inserted as a result of this sequence of steps:

(36) *Number and Gender Probe Together and Target BoolP*
a. Step 1a: Copy-Value: Participle, Number(BoolP)
b. Number is now Valued on the Participle
c. Step 2a: Copy-Value: Participle, Gender(BoolP)
d. No Value: Insert Masculine (Default [- singular → +masc]) on the Participle.

To help the reader view the 'tradeoffs' that are involved in this particular sequence of derivational steps, one may speak of different grammatical pressures that are in competition. In particular, assume two grammatical imperatives that force the choice in (36): SAME TARGET, which requires that Number and Gender probe together, and PROBE-HIERARCHICALLY, which requires that the maximal projection, BoolP, be targeted for agreement rather than any of the material contained within the specifier or complement of this XP. Clearly, as the result of choosing BoolP for both number and gender ultimately results in having to do last-resort insertion on the participle (as BoolP has no gender to supply), this grammatical strategy is exempt of pressure from a constraint against using default feature values, call it NO DEFAULT.

Summarizing, there are two mechanisms of choice that result in the strategy of agreement with BoolP: number and gender probing being bundled together in a single instance of *Agree*, and the target of *Agree* being chosen hierarchically, i.e. with the maximal projection of the subject noun phrase.

4.2 Agreement Targets BoolP First, and then a Conjunct

The second grammatical strategy occurs when Number and Gender do not probe together. In this case, the participle probes for Number in one step, and copies it from the participle, but then probes for Gender in a second step, exhibiting a preference for gender to be valued by a real source, and thus entering into the conjunction phrase to choose one of the individual conjuncts for gender agreement. We propose that the choice of which conjunct to copy gender from can be determined by two types of locality considerations: either hierarchically (choose the highest conjunct within BoolP) or linearly (choose the conjunct that is linearly closest to the verb), and that there is true optionality between these two. The set of steps is depicted in (37):

(37) *Number targets BoolP first, and Gender initiates Copy Separately*
a. Step 1a: Copy-Value: Participle, Number(BoolP)
b. Number is now Valued on the Participle

Choose the most accessible conjunct Cj (if before linearization, highest; if after linearization, closest)
c. Step 2b: Copy-Value: Participle, Gender(Cj)
d. Gender is now Valued on the Participle.

Clearly, this grammar of Slovenian conjunct agreement is one in which the SAME TARGET imperative of Béjar (2003) is parametrically set to 'off', and Number and Gender can probe separately. Number probes first, successfully finding BoolP's value for number within its feature-matrix, and subsequently, Gender probes on its own, skipping the maximal projection BoolP and choosing, with grammatical variability, either the highest conjunct or the closest conjunct for Gender. Speaking in terms of the factors that motivate and constrain the derivational steps in (37), this grammatical strategy exhibits a pressure of NO DEFAULT, thereby the participle's Gender probe persists into the internal structure of the BoolP looking for an eligible conjunct with lexical gender. The Number probe, however, respects PROBE-HIERARCHICALLY, and copies its feature from the BoolP maximal projection.

4.3 Agreement Goes Straight for a Conjunct

The third strategy is similar to 4.1. Number and Gender both probe together, but they go straight for a single conjunct, avoiding agreement with BoolP altogether. The individual conjunct bears features for both number and gender and these are unproblematically copied together in a single instance of *Agree*.

(38) *Number and Gender Copy from an Individual Conjunct Together*
Choose the most accessible conjunct Cj (if before linearization, highest; if after linearization, closest)
a. Step 1b: Copy-Value: Participle, Number(Cj)
b. Step 2b: Copy-Value: Participle, Gender(Cj)

In this strategy, PROBE-HIERARCHICALLY exerts no effect, and SAME TARGET results in Number and Gender probing a single conunct together, a result that leads to NO DEFAULT.

4.4 The default status of Masculine gender

Before concluding this section, we would like to discuss further the claim that masculine is the default gender in the plural, as can be observed also with the following facts. In Slovenian, there are both femine and masculine plural pronouns as shown in (39), which trigger feminine and masculine verb agreement. Since Slovenian is a pro-drop language, the pronouns in (39) are not obligatory, but without the pronouns, the auxilliary clitic, being a second position clitic, would have to follow the verb (see Golden and Sheppard 2000 and Marušič 2008 for more details on Slovenian clitics). Importantly, feminine pronouns and feminine agreement can be used only for groups that consist of exclusively women. As soon as there is one single male in the group masculine pronouns and masculine agreement have to be used.

(39)	a.	i.	Mi	smo	prišli.	ii.	Vi	ste	prišli.	iii.	Oni	so	prišli.
			we$_{M}$	aux$_{PL}$	came$_{M.PL}$		you$_{M}$	aux$_{PL}$	came$_{M.PL}$		they$_{M}$	aux$_{PL}$	came$_{M.PL}$
			'We came.'				'You came.'				'They came.'		
	b.	i.	Me	smo	prišle.	ii.	Ve	ste	prišle.	iii.	One	so	prišle.
			we$_{F}$	aux$_{PL}$	came$_{F.PL}$		you$_{F}$	aux$_{PL}$	came$_{F.PL}$		they$_{F}$	aux$_{PL}$	came$_{F.PL}$
			'We came.'				'You came.'				'They came.'		
	c.	i.	* Me	smo	prišli.	ii.	* Mi	smo	prišle.[3]				
			we$_{F}$	aux$_{PL}$	came$_{M.PL}$		you$_{M}$	aux$_{PL}$	came$_{F.PL}$				

[3] This example is acceptable for those who do not use the feminine first person pronoun, but it can only be used for a group of exclusively women.

Furthermore, Slovenian distinguishes between informal and formal ways of addressing in second person singular. The formal or polite form uses the second person plural pronoun and second person plural verb agreement. In both cases, it is the masculine plural that is used for polite/formal addressing, even if one is addressing a woman.

(40) a. Povabljeni ste na večerjo.
Invited$_{M.PL}$ aux$_{PL}$ on dinner
'You are invited for dinner.' (formal addressing for a man or a woman)
'You all are invited for dinner.' ((in)formal addressing for a group, also a mixed group)
b. Povabljene ste na večerjo.
Invited$_{F.PL}$ aux$_{PL}$ on dinner
'You are invited for dinner.' ((in)formal, only for a group of exclusively women)

The impossibility of female gender with a polite second person plural (40), and the impossibility of female gender in mixed-gender addressee groups (39), support the assertion that masculine is the default gender for plural number.

4.5 Recap: The Mechanism of Variability

Summarizing, there are three strategies for agreement: 4.1, in which both Number and Gender probe BoolP, 4.3, in which both Number and Gender copy from an individual conjunct (either the highest or the closest), and 4.2, in which Number copies from BoolP and Gender copies from an individual conjunct (either the highest or the closest, depending on the timing with respect to linearization). Whenever inter- and intra-individual variability is described within a formal model, however, such strategies must be boiled down to discrete mechanisms of grammatical choice. We have argued that there are two such choices:

(41) The three derivational choices determining variability in Slovenian conjunct agreement:
- Which XP is targeted first (BoolP or straight for a Conjunct)
- Whether Number and Gender probe together (split phi-Probes)

The three grammars employed by Slovenian speakers can thus be understood in terms of the following choices among the first two parameters above:

(42) Parametric choices in *Agree-Copy* determining the three strategies:
Strategy 4.1: BoolP first, Number & Gender together:
Strategy 4.2: BoolP first, Number & Gender separate
Strategy 4.3: Conjunct first, Number & Gender together[4]

While we view these grammatical processes as derivational and mechanistic, it can also be useful to characterize the system in terms of tradeoffs, as shown below:

(43) Constraints on derivations characterizing the three strategies:
Strategy 4.1: SAME TARGET, PROBE-HIERARCHICALLY >> NO DEFAULT
Strategy 4.2: NO DEFAULT, PROBE-HIERARCHICALLY >> SAME TARGET
Strategy 4.3: SAME TARGET, NO DEFAULT >> PROBE-HIERARCHICALLY

We propose that all of the possibilities in (42)/(43) result from the crucial fact that BoolP can compute its own number, but not its own gender, and thus one option is to copy the gender from an individual conjunct. Arguably, the best confirmation for the existence of these specific mechanisms of choice will come from cases where we can show that one of these strategies is *blocked*. In other words, if copying the gender from an individual conjunct is blocked for some reason, then copying from BoolP will be the only option, and default agreement will be forced. Similarly, if BoolP *cannot* compute its own number for some reason, then copying from

[4] These two parameters generate four possibilities, but this third strategy is indistinguishable from targetting an individual conjunct and then having Number and Gender probe separately.

an individual conjunct will be the only strategy possible. We turn to experimental investigations of both of these possibilities.

5 Experiment 3: The Effects of Mixing Numbers

In these studies, we demonstrate an interesting constraint on single-conjunct agreement: the fact that it is greatly reduced when the conjunct in question is singular. We will demonstrate that the presence of nonplural conjuncts within the conjunction can force agreement with the BoolP maximal projection.

We first set out to establish the facts about conjoining two *singular* noun phrases, in comparison with Experiment 1b. Experiment 3a thus used the same conditions as Experiment 1b (6 combinations, preverbally) but this time both noun phrases were singular. Examples (44-49) show the model sentences and replacement noun phrases designed to elicit agreement for these conditions.

(44) a. model sentence: Hladilnik je v času poplave priplaval mimo hiše.
refrigerator$_{M.SG}$ aux$_{SG}$ in time flood swam$_{M.SG}$ past house
'The refrigerator swam past the house during the flood.'
b. target coordination: Zmrzovalnik in korito
Freezer$_{M.SG}$ and sink$_{N.SG}$

(45) a. model sentence: Drevo je včasih stalo na jasi.
tree$_{N.SG}$ aux$_{SG}$ in-the-past stood$_{N.SG}$ on meadow
'The tree used to be in the meadow.'
b. target coordination: Hrast in breza
oak$_{M.SG}$ and birch$_{F.SG}$

(46) a. model sentence: Avto se je zaletel v hišo na glavnem trgu.
car$_{M.SG}$ refl aux$_{SG}$ hit$_{M.SG}$ in house on main square
'The car drove into a house on the main square.'
b. target coordination: Kolo in motocikel
bicycle$_{N.SG}$ and motorcycle$_{M.SG}$

(47) a. model sentence: Flaškon je stal v kleti za vrati.
jug$_{M.SG}$ aux$_{SG}$ stood$_{M.SG}$ in basement behind doors
'The jug stood in the basement behind the doors.'
b. target coordination: Preša in sod
wine-press$_{F.SG}$ and barrel$_{M.SG}$

(48) a. model sentence: Portret se je prodal za med.
portrait$_{M.SG}$ refl aux$_{SG}$ sold$_{M.SG}$ for honey
'The portrait was sold for a lot of money.'
b. target coordination: Panorama in tihožitje
anorama$_{F.SG}$ and still-life$_{N.SG}$

(49) a. model sentence: Plesišče se je napolnilo z ljudmi.
dance-floor$_{N.SG}$ refl aux$_{SG}$ got-filled$_{N.SG}$ with people
'The dance floor filled up with people.'
b. target coordination: Igrišče in tribuna
playground$_{N.SG}$ and stands$_{F.SG}$

If participants are going for agreement with BoolP, we should find largely default masculine dual -- where dual number is computed as a result of (34). On the other hand, if they are going for agreement with a BoolP first for number, and then to an individual conjunct for gender, we might find responses such as feminine dual or neuter dual (recall that these two genders are syncretic in the dual in Slovenian). Finally, if they are going straight for a conjunct, we might find responses such with singular number on the participle.

In fact, the overwhelming result of conjunction of two singulars is default masculine dual agreement. The

results are shown in Figure 6, where each bar represents a total of 48 responses (12 participants x 4 items per condition).

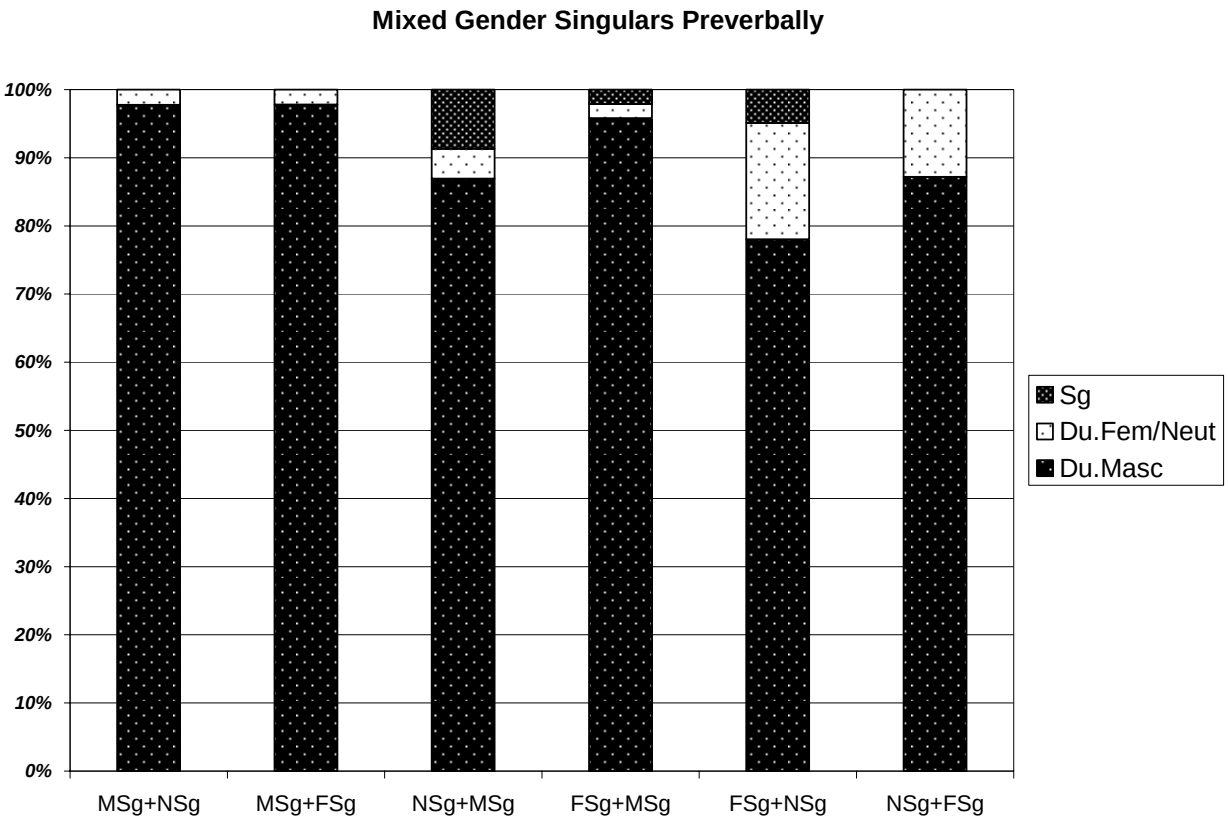


Figure 6: Experiment 3a results for participial agreement. Mixed gender singulars conjoined preverbally, e.g. . [[neuter sg and feminine sg]$_{BoolP}$ ... V]. Elicited spoken production experiment. n=12. Examples for the six conditions presented with the vertical bars are shown in (44)-(49).

In stark contrast to Experiment 1a, therefore, Experiment 3a finds virtually no agreement with the closest or first conjunct for singular number. Recall from the discussion in Section 4 that closest-conjunct agreement and first-conjunct agreement are mechanisms largely for computing **gender** agreement. In other words, something must be disfavoring gender agreement with a conjunct that is non-plural.

To address this question in sharper relief, in Experiment 3b, we conducted a similar design, but made only *one* of the conjuncts singular. The stimuli therefore consisted of mixed number conjuncts, as shown in (50)-(55).

(50) a. model sentence: Pisalo se je včeraj pokvarilo.
pen$_{N.SG}$ refl aux$_{SG}$ yesterday broke$_{N.SG}$
'The pen broke yesterday.'
b. target coordination: Ekran in tipkovnice
screen$_{M.SG}$ and keyboards$_{F.PL}$

(51) a. model sentence: Kamijon se je pokvaril poleti.
truck$_{M.SG}$ refl aux$_{SG}$ broke$_{M.SG}$ summer-time
'The truck broke down in the summer.'
b. target coordination: Žerjav in dvigala
crane$_{M.SG}$ and lifts$_{N.PL}$

(52) a. model sentence: Sadje je hitro zgnilo.
fruits$_{N.SG}$ aux$_{SG}$ quickly rot$_{N.SG}$
'Fruits got rotten quickly.'
b. target coordination: Hruške in ananas

pears$_{F.PL}$ and pineapple$_{M.SG}$

(53) a. model sentence: Vrtalni stroj je visel na steni.
Drilling machine$_{M.SG}$ aux$_{SG}$ hang$_{M.SG}$ on wall
'The drilling machine was hanging on the wall.'

b. target coordination: Kladiva in šraufciger
hammers$_{N.PL}$ and screwdriver$_{M.SG}$

(54) a. model sentence: Srnjak se je skril za grmičevje.
roebuck$_{M.SG}$ refl aux$_{SG}$ hid$_{M.SG}$ behind shrubs
'The roebuck hid behind the shrubs.'

b. target coordination: Tele in krave
calf$_{N.SG}$ and cows$_{F.PL}$

(55) a. model sentence: Šport mu je pomenil vse.
sport$_{M.SG}$ him aux$_{SG}$ meant$_{M.SG}$ everything
'Sports meant everything to him.'

b. target coordination: Medalje in priznanje
medals$_{F.PL}$ and award$_{N.SG}$

If closest-conjunct agreement is indeed reserved for plural conjuncts, there should be no agreement with a singular conjunct. The results are shown in Figure 7, where each bar represents a total of 114 responses (19 participants x 6 items per condition).

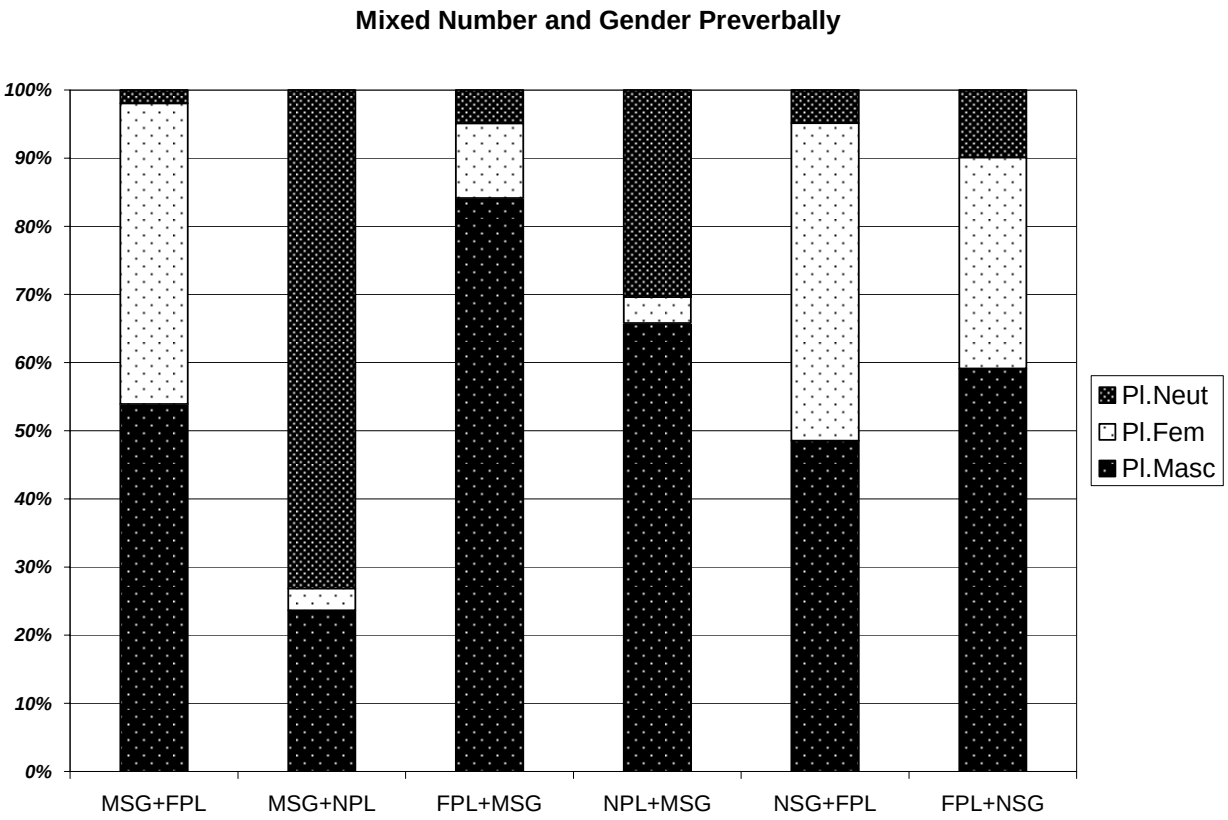


Figure 7: Experiment 3b results for participial agreement, e.g. [[feminine plural and neuter sg]$_{BoolP}$ ... V]. Mixed Gender and number preverbally. Elicited spoken production experiment. n=19. Examples for the six conditions presented with the vertical bars are shown in (50)-(55).

If partial agreement had been equally available with all conjuncts, we would expect to get equal number of Fpl

and Npl responses in the rightmost two columns. But Fpl + Nsg and Nsg + Fpl yield very few instances of Npl agreement. The verbal probe cannot copy the gender values from a singular conjunct, neither when it is the higher nor when it is the closer conjunct. We propose the principle in (56) is responsible for the lack of partial agreement with singular conjuncts:

(56) *Consistency Principle*:
Partial Agreement converges only when the Agreement value registered by the targeted conjunct matches the Number value of the verb (which it acquired from the BoolP as a whole)

This principle explains why agreement with a single conjunct is blocked. In Experiment 3a, there are only singular conjuncts. Due to the Consistency Principle, none of the single conjuncts was an eligible agreement controller, as the verb already had its number valued as dual from the BoolP. In order to get its gender feature valued, verbal agreement resorted to the default strategy, as shown in Figure 6. In Experiment 3b, when one of the conjuncts has the same value for number as the entire BoolP and the other does not, the plural conjunct can be the gender controller – whether it is the closer or the first conjunct, as shown in Figure 7.

6 Experiment 4: The Curious Case of 5&Ups

We have proposed that there are two possible mechanisms for conjunct agreement: the verbal probe either targets BoolP for Number, and subsequently takes care of Gender (either with default insertion or gets it from one of the two conjuncts) or else it targets a single XP (e.g. the closest conjunct) for both Number and Gender. Like many such cases, the best way to diagnose that there really are two mechanisms is to make one of them fail.

Like in the previous section where agreement with one or both of the conjuncts was blocked, we can also block the other mechanism for conjunct agreement. Since gender features can get inserted by default if the Number is present on BoolP, what we would need to do to block agreement with BoolP is to prevent BoolP from getting any Number. So the question is, can we block the calculation of Number at the level of BoolP. Without Number, BoolP cannot insert Gender with the default rule. Since BoolP has no phi-features at all, the verbal probe is forced to look at one of the two conjuncts to get both. The key here is to use numerically quantified noun phrases, which we call 5&Ups.

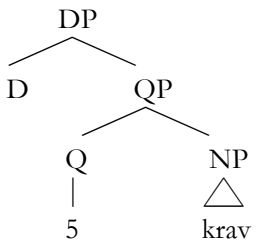
Like in many other Slavic languages numerically quantified noun phrases trigger Neuter singular agreement when the number is 5 or higher than 5. The category '5&Ups' includes also quantifiers like 'many', 'some', 'several' etc. but not numerals 101, 102, 103, 201 etc., as these are like 100+1, 100+2 etc. and hence agree like 1, 2, 3, 4 etc. A couple of typical examples with 5&Up subjects are given in (57).

(57) a. Pet krav je odšlo na pašo.
Five $cows_{F}$ aux_{SG} $went_{N.SG}$ on graze
"Five cows went grazing."

b. Triindvajset deklet je plesalo čačača.
23 girls aux_{SG} dance cha-cha-cha
'Twenty three girls dances cha-cha-cha.'

Franks (1994) argues QP blocks percolation of NP's phi-features to D, which results in DP being without any phi-features. See Marušič and Nevins (to appear) and references cited there for some discussion of various options with respect to the analysis of the default Neuter singular agreement with numerically modified noun phrases in Slavic.

(58)



The Nsg verb agreement appearing with 5&Ups is not the 'real' Nsg as can be most clearly seen from the fact

that a conjunction of two 5&Ups yields Nsg agreement while the conjunction of two regular neuters yields mostly dual agreement. This fact was reported already in Franks (1994) and discussed at lenght in Marušič and Nevins (to appear). We have confirmed it in Experiment 4, which we conducted using the stimuli shown in (59)-(60).

(59) a. model sentence: Metla je izginila iz omare.
broom$_{F.SG}$ aux$_{SG}$ disappeared$_{F.SG}$ from cabinet
'The broom disappeared from the cabinet.'

b. target coordination: Čistilo in razkužilo
cleaner$_{N.SG}$ and disinfectant$_{N.SG}$

(60) a. model sentence: Trgovina se je preuredila v igralnico.
shop$_{F.SG}$ refl aux$_{SG}$ transformed$_{F.SG}$ into casino
'The shop transformed into a casino.'

b. target coordination: Pet bifejev in deset uradov
five pubs and ten offices

The results are shown in Figure 8, where each bar represents a total of 60 responses (10 participants x 6 items per condition).

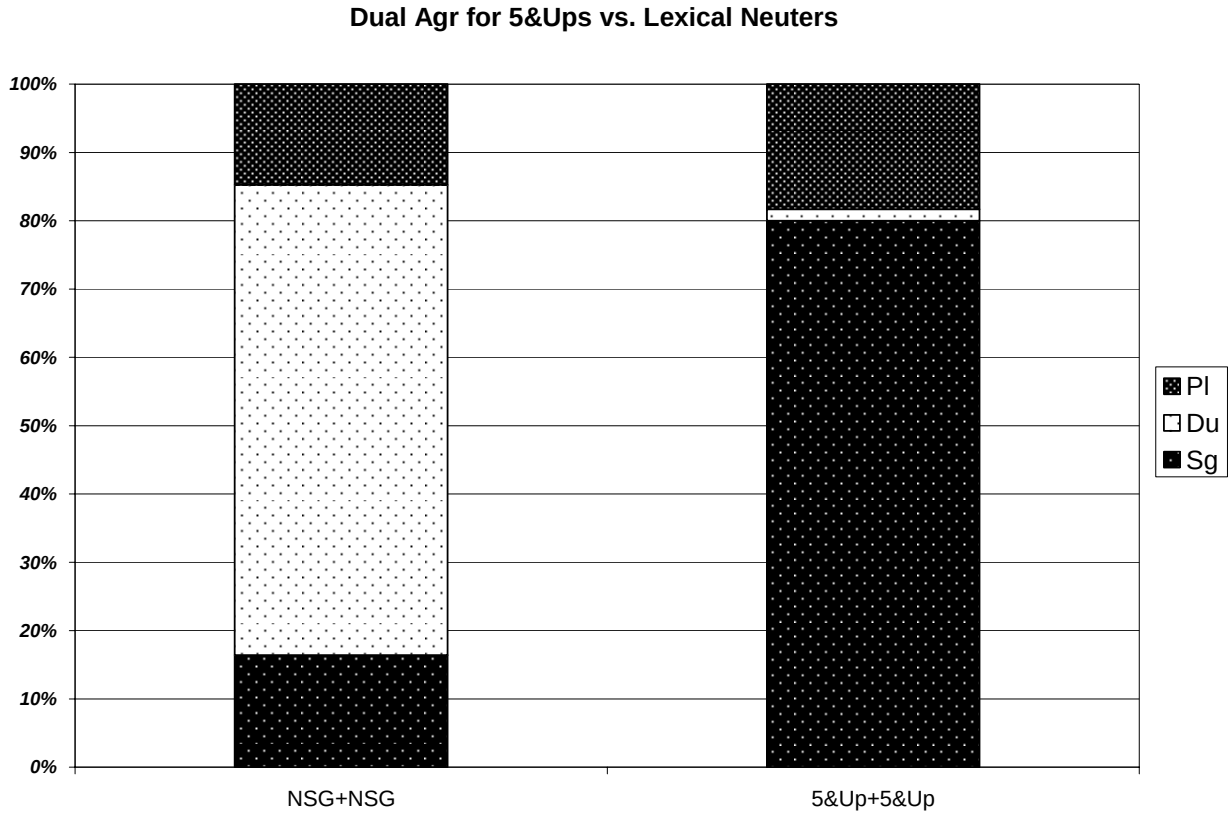


Figure 8: Experiment 4: Dual responses for 5&ups and lexical neuters. Elicited spoken production experiment. n=10.

We can thus safely conclude that the Nsg agreement with 5&Ups is not due to lexical specification of these features on numerals, rather, 5&Ups completely lack features on the D node. So since external agreement with a DP sees only the phi-features at D, it gets the default values for verbal agreement: [+singular] → [+neuter] in the absence of any phi-features at all. The default value for verbal agreement is used also whenever there's no nominative subject, as shown in (61a) with dative oblique sibjects, in (61b) with sentential subjects, and in (61c) with weather verbs.

(61) a. Petru je ugajalo, da je Metka prišla na zabavo.
Peter$_{DAT}$ aux$_{SG}$ pleased$_{N.SG}$ that aux$_{SG}$ Metka$_{NOM}$ came$_{F.SG}$ to party
'It pleased Peter, that Metka came to the party.'

b. Da je Peter pijan, je bilo zelo očitno.
that aux$_{SG}$ Peter drunk$_{M.SG}$ aux$_{SG}$ been$_{N.SG}$ very obvious
'It was very obvious that Peter was drunk.'

c. Včeraj je deževalo.
Yesterday aux$_{SG}$ rained$_{N.SG}$
'It rained yesterday.'

As 5&Ups literally lack phi-features on their D node, even BoolP will not be able to compute its Number value based on its daughters. We predict that without any number features at BoolP node, the Computation-by-Conj-head will choke and the verb will have to go directly for one of the conjuncts.

We checked this prediction in Experiment 4, we conducted elicited production test with coordinations where one of the conjuncts was either Mpl or Fpl and the other either 5&Up or else Nsg. The stimuli therefore consisted of eight different combinations, the following are the four options with the plural NP in second position, (62)-(65).

(62) a. model sentence: Kuverta je končno prispela.
envelope$_{F.SG}$ aux$_{SG}$ finally arrived$_{F.SG}$
'The envelope finally arrived.'

b. target coordination: Deset pisem in razglednice
ten letters and postcards$_{F.PL}$

(63) a. model sentence: Proračunska luknja bo pripeljala do obupa.
budgetary hole$_{F.SG}$ fut-aux$_{SG}$ drive$_{F.SG}$ to despair
'The hole in the budget will lead to despair.'

b. target coordination: Pomanjkanje in finančne krize
lack.of.goods$_{N.SG}$ and financial crises$_{F.PL}$

(64) a. model sentence: Sablja je zarjavela.
saber$_{F.SG}$ aux$_{SG}$ got-rusty$_{F.SG}$
'The saber got rusty.'

b. target coordination: Vseh deset mečev in noži
all ten swords and knives$_{M.PL}$

(65) a. model sentence: Pisarna se je zaprla že ob treh.
office$_{F.SG}$ refl aux$_{SG}$ closed$_{F.SG}$ already at three
'The office closed down already at three.'

b. target coordination: Tajništvo in uradi
Secretariat$_{N.SG}$ and administrative-offices$_{M.PL}$

If Computation-by-Conj-head chokes, we predict that plural agreement will show up only when Mpl/Fpl is the closest conjunct. The results are shown in Figure 9, where each bar represents a total of 60 responses (10 participants x 6 items per condition).

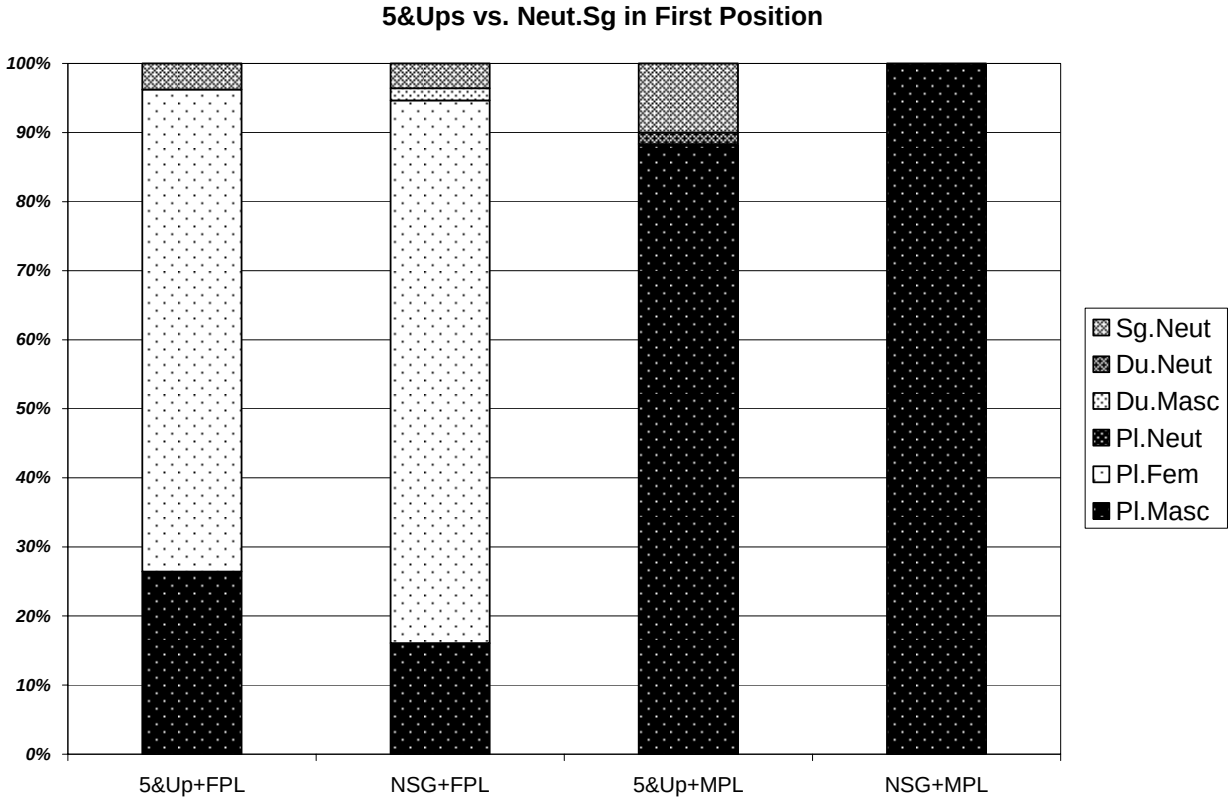


Figure 9: Experiment 4: Comparing 5&ups with Neut.Sg. in first position. Elicited spoken production experiment. n=10.

In (66) to (69) the four stimuli where the first conjunct was a plural noun phrase and the second conjunct is a singular (either a 5&Up or a lexical Nsg noun phrase) are shown.

(66) a. model sentence: Jakna se je na soncu takoj posušila.
jacket$_{F.SG}$ refl aux$_{SG}$ on sun immediately dried$_{F.SG}$
'The jacket dried immediately in the sun.'
b. target coordination: Jopiči in osem kravat
jacket$_{M.PL}$ and eight ties

(67) a. model sentence: Reka je privabljala številne turiste.
river$_{F.SG}$ aux$_{SG}$ attracted$_{F.SG}$ numerous tourists
'the river attracted numerous tourists.'
b. target coordination: Potoki in jezero
streams$_{M.PL}$ and lake$_{N.SG}$

(68) a. model sentence: Knjiga se je tiskala počasi.
book$_{F.SG}$ refl aux$_{SG}$ printed$_{F.SG}$ slowly
'The book was being printed slowly.'
b. target coordination: Voščilnice in tristo razglednic
greeting-cards$_{F.PL}$ and 300 postcards

(69) a. model sentence: Nevihta je povzročila veliko škode.
storm$_{F.SG}$ aux$_{SG}$ caused$_{F.SG}$ a lot damage
'The storm caused a lot of damage.'
b. target coordination: Poplave in deževje
floods$_{F.PL}$ and rain$_{N.SG}$

The prediction is that 5&Ups render the agreement with BoolP impossible, and thus closest-conjunct agreement will in fact be default agreement in such cases. The results are shown in Figure 10.

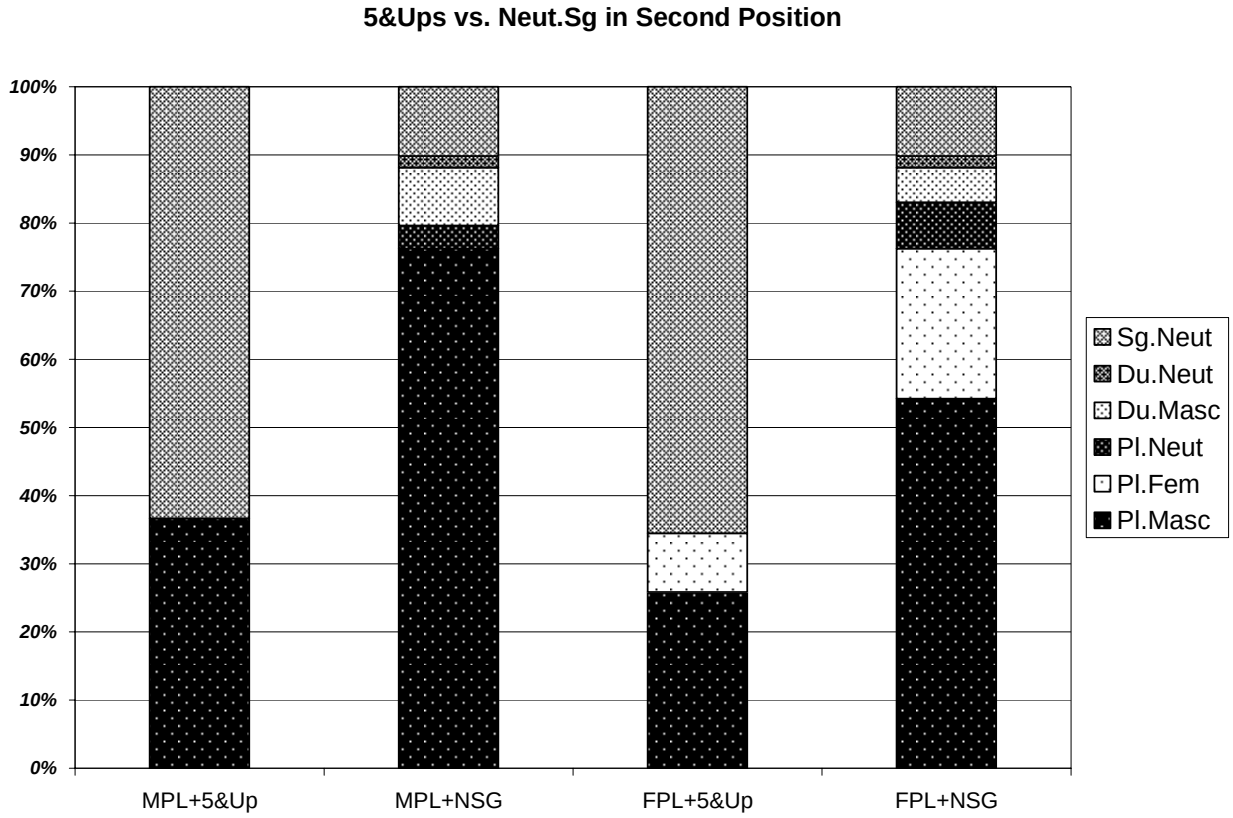


Figure 10: Experiment 4: Comparing 5&ups with Neut.Sg. in second position. Elicited spoken production experiment. n=10.

Figure 9 and Figure 10 show that 5&Ups and Neut.Sg pattern alike in first position, but quite differently when they are the closest conjunct. In the latter cases, 5&Ups trigger a great deal of *singular* agreement, something that true lexical neuter singulars are incapable of doing. We argue that this reveals a distinction between true default agreement – forced by defective ConjP in the case of a 5&Up – versus the singular+plural combinations with true neuter singulars, which always result in plural ConjP.

The general prediction is thus confirmed: 5&Ups are not like lexical neuter singulars at all -- they consist of phi-less DPs, rendering Computation-by-BoolP impossible. When BoolP's computation fails, agreement must go for one of the individual conjuncts. Similar patterns are found in Dutch with bare determiners, which are arguably phi-less, and thus trigger singular agreement even when conjoined:

(70) Dit en dat is / * zijn te koop.
This$_N$ and that$_N$ is / * are on sale
'This and that is on sale.' (Dutch; van Koppen & Rooryck 2008)

Summarizing the entire set of results thus far, speakers' grammars allow either Agreement with BoolP, or Agreement with a single conjunct. While these two basic strategies are in 'free variation' most of the time, as we have shown in Experiments 3 and 4, agreement with a single conjunct is impossible when consistency with BoolP's number not met, and forced when BoolP cannot compute its own number.

7 Conjunct agreement is distinct from attraction

As reported in the literature, production experiments carried out across languages reveal that participants often produce sentences with 'ungrammatical', linear agreement with a modifier-contained NP (e.g. part of a

prepositional phrase), as in (70). Experiments by Bock and Miller (1991) and Vigliocco and Nicol (1998) found these 'attraction' effects approximately 15% of the time.

(71) *The key to the cabinets are missing.

In order to determine if Slovenian closest-conjunct agreement could also be just an attraction effect in disguise, we compared pairs of examples where the two nouns were conjoined in one set of experimental sentences and where one was part of a PP modifying the other in the other set, as in (71). The two sets of sentences, each with an equal number of conjunctions and PPs were given to an equal number of subjects. Since NPs that are complement to prepositions are never in nominative case, we chose also cases where the case required by the preposition is syncretic with nominative case, like in (72). Not all examples were of the same type, so that in some cases the two forms were quite different as in (73b-c). Controlling for the effects of syncretism proved to be unnecessary since we found no attraction effects at all.

(72)	lestenec	in	luči ...	vs.	lestenec	brez	luči ...
	chandelier$_{MASC-SG}$	and	lights$_{FEM-PL}$ ...	vs.	chandelier$_{MASC-SG}$	without	lights$_{FEM-PL}$ ...

(73)	a.	model sentence:	Lisica	je	gledala	lovca.
			fox$_{F.SG}$	aux$_{SG}$	watched$_{F.SG}$	hunter
			'The fox watched the hunter.'			
	b.	target coordination:	Jelen	in	srne	
			buck$_{M.SG}$	and	roe-deers$_{F.PL}$	
	c.	target PP modification:	Jelen	s	srnami	
			buck$_{M.SG}$	with	roe-deers$_{F.PL.INST}$	

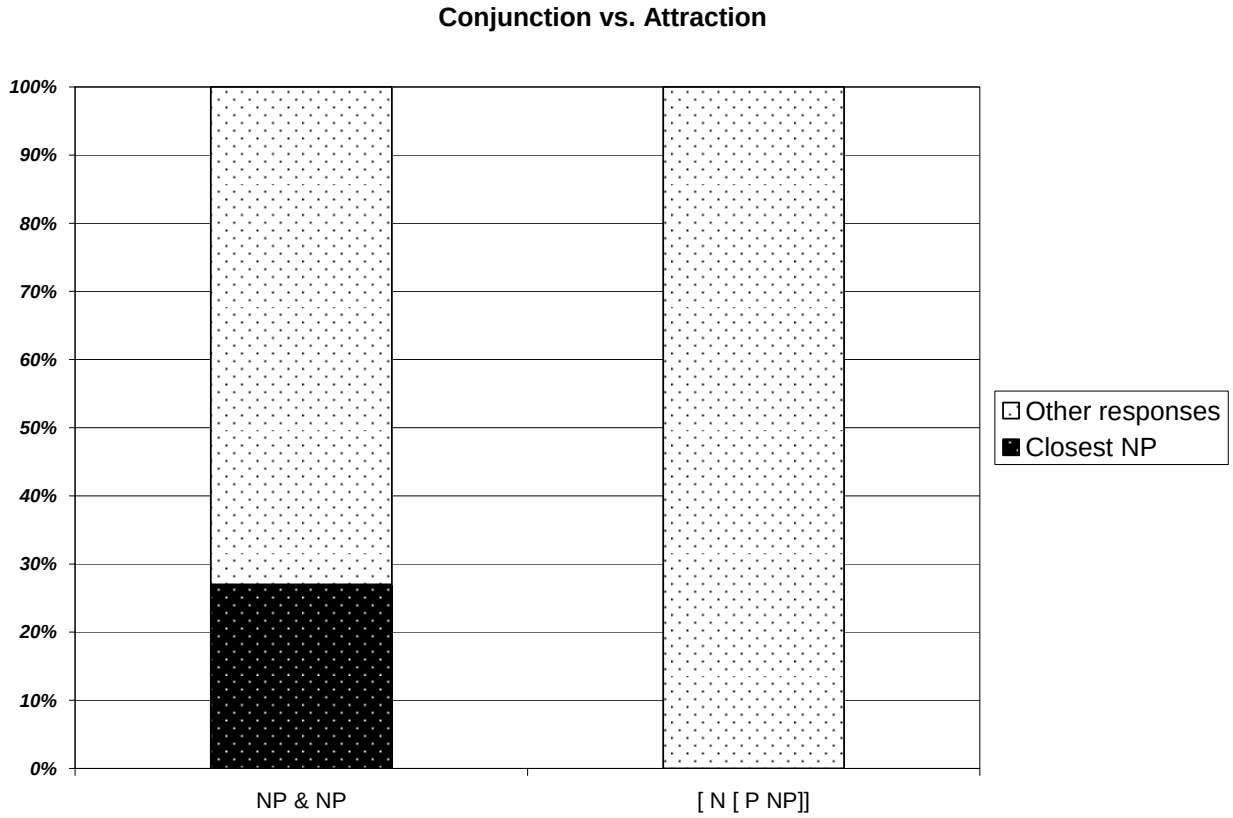


Figure 11: Experiment 5: Comparing conjunction and attraction. Elicited spoken production experiment. n=10.

The fact that we found no attraction effect at all might be surprising, since we would expect at least some attraction given that this occurs in 15% of the cases in experiments cited above. This may be in part due to differences in experimental design, and mostly to the fact that Slovenian, unlike English (the language most

widely used in the cited experiments), expresses cases with overt morphology, that only nominative nouns agree with the verb, importantly, that nominative NPs cannot be complements of prepositions. These factors may independently render attraction from within a PP modifier very rare – nonetheless, we gave it its best chance by using oblique forms syncretic with the nominative plural.

The distinction between conjunct agreement and potential attraction effects in Slovenian were discussed already in Marušič, Nevins, and Saksida (2006). They provide the following examples, (74) and (75), showing that it is not simply the closest NP inside the coordination that is the target of agreement, but the closest of the two conjuncts.

(74) Šotori in postelje, na katerih so spala teleta, so smrdele/*smrdela.
tent$_{M\text{-}PL}$ and bed$_{F\text{-}PL}$ on which aux slept calves$_{N}$ aux$_{PL}$ stank$_{F\text{-}PL}$ stank$_{N\text{-}PL}$
'Tents and beds that were slept on by the calves stank.'

(75) Trditev, da je Peter odšel, je absurdna.
claim$_{F\text{-}SG}$ that aux Peter$_{M\text{-}SG}$ left$_{M\text{-}SG}$ is absurd$_{F\text{-}SG}$
'The claim that Peter left is absurd.'

The addition evidence from Experiment 5 allows us to firmly conclude that conjunct agreement should be modeled in terms of the mechanisms proposed in Section 4, rather than in terms a possible unification with attraction effects.

8 Why Only Slovenian? (or not)

Let us summarize thus far. We have argued that Slovenian has three distinct strategies for computing gender and number agreement with conjoined noun phrase subjects, and demonstrated that the results of production experiments are limited to these strategies, which themselves are constrained depending on feature values. At this point, the reader may be asking why only Slovenian appears to have partial agreement with preverbal conjoined subjects.

As it turns out, Slovenian is not so exceptional. English exhibits a similar pattern with noun phrases headed by a disjunction. Recall that Slovenian ConjP could compute its own number, but not its own gender. As English does not show grammatical gender, there will be no opportunity to observe closest-conjunct agreement with ConjP. English DisjP, however, has no mechanism for computing its own number, as the disjunction of two singular or two plural noun phrases does not lead to any number value for the noun-phrase as a whole. Consequently, while default agreement may be an option for many speakers, there is also strong evidence for the existence of single-conjunct agreement with one member of a disjunct, as shown in (76)-(79):

(76) [Neither that dog nor those cats] are housetrained.
(77) [Neither those cats nor that dog] is housetrained.
(78) Is [neither that dog nor those cats] housetrained?
(79) Are [neither those dogs not this cat] housetrained?

Cases were of this sort were discussed by Morgan (1972: 281). Among these, (43) shows linear agreement with the initial, first member of the disjunct, closest to the inverted auxiliary. Cases of this sort are routinely fine on the internet, as shown in (80):

(80) a. Why is neither ESOL nor routes into employment on the agenda?
b. Why is neither Kevin nor any of his his guest-posters interested in commenting on Kelo?

We therefore take the existence of partial conjunct agreement to be a general strategy employed for noun phrases headed by functional items that do not bear their own inherent phi-features and which, under particular circumstances, cannot deterministically compute such values.

As for closest conjunct agreement, this phenomenon is reported to exist also in the closely related Bosnian/Croatian/Serbian (Bošković 2009), Tsez (Polinsky 2009), Hindi (Benmamoun, Bhatia, and Polinsky 2010), Hungarian (Kiss 2009), and Ndebele (Moosally 1999). We focus here on the last of these. As reported in Moosally (1999), a verb in Ndebele agrees with the closest conjunct.

(81) a. A-ba-lungu la-ma-bhunu a-yahleka.
ii.pl-whiteman conj-vi.pl-Afrikaaner vi.pl-laughing
'The Englishmen and the Afrikaaners are laughing.'
b. A-ma-bhunu la-ba-lungu ba-yahleka.
vi.pl-Afrikaaner conj-ii.pl-whitemen ii.pl-laughing
'The Afrikanners and the Englishmen are laughing.'

(82) I-zi-nja la-bo-mangoye le-nyoni zi-nyamalele izolo.
x.pl-dog conj-ii.pl-cat conj-x.pl-bird x.pl-disappeared yesterday
'The dogs, birds, and cats disappeared yesterday.'

In (83), one sees that there is substantial syncretism among noun-class endings within the singulars and within the plurals. Importantly, there is also syncretism *across* singular and plural:

(83) Ndebele Agreement Morphology

Class	Singular	Plural
1/2	**u**-	ba-
3/4	**u**-	**i**-
5/6	li-	a-
7/8	si-	**zi**-
9/10	**i**-	**zi**-
11/12	lu-	**zi**-

What this means is that a conjunction of class 9 and class 3 nouns, found with the verbal agreement *i-*, could in principle be due to agreement with the first conjunct or with the second conjunct. A similar 'ambiguity' can be found in another language reported to have closest-conjunct agreement, Tsez (Polinsky 2009).

(84) a. kid-no uži-n b- ik'is.
girl.ii.sg-and boy.i.pl-and i.pl-went
'a girl and boy left.'
b. kid-no uži-n ∅-ik'is.
girl.ii.sg-and boy.i.sg-and i.sg-went
c. ziyabi-n kid-no y-ays.
cows.iii.pl-and girl.ii.sg-and ii.sg-arrived
'The cows and the girl arrived.'

The Tsez agreement paradigm also shows substantial cross-number syncretism:

(85) Tsez Agreement Morphology

Class	Singular	Plural
I	-	b-
II	y-	**r**-
III	b-	**r**-
IV	**r**-	**r**-

Summarizing, one can see that Tsez, Ndebele and Slovenian all have syncretism across number columns. We propose that variability in whether conjunct agreement is computed as resulting from a single conjunct or from ConjP as a whole is ultimately the result of surface ambiguity, precisely due to this syncretism. Consider again Slovenian:

(86) Syncretism across number columns: Participle endings:

	Masc	Fem	Neut
Singular	*Ø*	*-a*	*-o*
Dual	*-a*	*-i*	*-i*
Plural	*-i*	*-e*	*-a*

Although the auxiliary should disambiguate which conjunct is being agreed with, if one looks at the participle alone, there will be primary linguistic data for the language acquirer yielding ambiguities such as the following arise:

(87) Potential agreement controller ambiguities due to syncretic participial endings:
- Msg + Fsg → *-a*: could be MDu (ConjP) or Fsg (second conjunct)
- Mdu + Fdu → *-i*: could be MPl (ConjP) or Fdu (second conjunct)
- Npl + Mdu → *-a:* could be Npl (first conjunct) or Mdu (second conjunct)

Different learners may thus attribute different underlying mechanisms to these surface-ambiguous data, or may even take them as evidence for intra-individual variation. While it remains to be seen how general this explanation can go, and what other language-internal factors may be contributing to the presence of single-conjunct agreement strategies[5], we would like to propose that agreement with a single conjunct is available (though perhaps 'disfavored', or a non-default marked option) within UG, and that given enough evidence (which the ambiguous syncretic endings provide), this option can be triggered.

8 Conclusion: Inter- and Intra- Individual Syntactic Variation Lives

A number of distinct conclusions can be drawn from this work. While increasing attention to the role of featural and linear factors in conjunct agreement has been found in the syntactic literature, very little of this work is experimentally based. Our production experiments allow us to focus not only on the existence of particular strategies for conjunct agreement, but on the *variability* across and within speakers. The results show that true syntactic optionality exists, and that speakers of 'the same language' can indeed radically differ in how they compute agreement for conjoined noun phrases. Experiment 1 found that a single speaker can also vary in whether, for example Fpl + Npl conjunctions result in Feminine (highest conjunct), Neuter (closest conjunct), or Masculine (default) agreement.

Despite this variability, however, our results point to the fact that not everything is possible. We have shown, for example, in Experiment 2, that there is no true "Last Conjunct" or "Medial Conjunct" Agreement, and proposed a set of mechanisms that exclude such options from being generated. In addition, we have shown that the variation is itself constrained. For example, in the interaction of closest conjunct agreement with 5&Ups, we have shown that defectivity of one of the conjuncts renders agreement with BoolP impossible, thereby restricting one of the otherwise possible syntactic variants.

Why should syntactic optionality be found for conjunct agreement, as opposed to other phenomena? The core of our theoretical account relies on the Fact that BoolP computes its own Number, but not its own Gender. As agreement is designed to furnish values of phi-features on predicates, other XPs within the ConjP may be chosen as a source of gender features. This fact can lead to an asymmetric dependence in agreement: Agreeing with a conjunct C_x for Gender can requires that C_x have the same Number as the conjunct as a whole. Experiment 3 demonstrated just these effects: closest-conjunct agreement is not found with singular conjuncts. The specific mechanisms for variability include whether number and gender probe together (following the work of Béjar 2003), and whether, in a two-step theory of agreement, copying takes place before or after linearization. When number and gender probe together, ConjP may be chosen for both, resulting in masculine plural 'resolution'. We have demonstrated in Experiment 4 that resolution itself can be blocked when ConjP cannot compute its own number, due to the presence of a deficient DP within the conjunction, namely a 5&Up.

Finally, in answering the question of how this phenomenon may have arisen in Slovenian, we have tentatively proposed that it is due to the substantial syncretism in participial endings across numbers interacting with the acquisition process. In more general terms, cross-number syncretism in the system may lead to ambiguity in the primary linguistic data, which we contend is ultimate source of much of grammatical variability.

[5] The syncretism-based explanation may also extend to Serbian, which has the folllowing participle endings:

	Masc	Fem	Neut
Singular	*Ø*	*-a*	*-o*
Plural	*-i*	*-e*	*-a*

In Serbian, too, the combination NeutPl + FemSg with an *–a* participial ending is ambiguous between first and second conjunct agreement.

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