# Experimental Approaches to the Study of Grammar: Agreement and Gender Resolution in Slovenian

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#### Introduction

What do speakers produce as the gender and number agreement on the participle for conjuncts like (1)?

(1) [Letters<sub>Neut,Pl</sub> and a postcard<sub>Fem,Sq</sub>] have finally arrived

Slovenian has three genders and three numbers, and there is substantial syncretism among agreement forms, as the following table of participle endings indicates:

Table 1:

		Singular	Dual	Plural
	Masculine	Ø	<b>-a</b>	<b>j</b>
	Feminine	<u>-</u> а	<b>_i</b>	<b>–e</b>
	Neuter	<b>-o</b>	<b>-i</b>	—a

The so-called standard account of Slovenian gender resolution holds that conjoined [Feminine & Feminine] NPs resolve to Feminine, and that all other gender combinations (including both mixed gender and [Neuter & Neuter]) resolve to MASCULINE (see references: [2,3,4,5,8,10], though cf. [6] and [1]).

There are also reports of both First Conjunct and Closest Conjunct agreement with preverbal subjects.

We set out to test these in a Sentence Production Study.

#### Method

Participants: Twenty-seven students from the University of Nova Gorica, Slovenia (10 in Experiment 1; and 17 in Experiment 2).

**Experiment 1**: Twelve conditions with 4 items in each condition: 6 Uniform Gender conditions (3 conjoined singular, 3 conjoined plural for each gender), and 6 Mixed Gender Conditions (all conjuncts singular, both orders for each gender combination).

**Experiment 2**: Eight conditions with 6 items in each condition: [NPL&NPL], [FPL&NPL], [NPL&NSG], [NPL&FSG], [NDU&NDU], [NDU&FDU], [NSG&NSG], [FSG&FSG]. Fillers for Experiments 1&2: Sixty-four non-conjoined NPs: Masculine (N=27), Feminine (N=27) & Neuter (N=10).

**Procedures**: Participants were presented with a model sentence (e.g., 'The parcel has finally arrived') followed by a Target Subject NP (e.g., 'letters and a postcard'). The participant initiated sentence production with the presentation of the Target Subject. Model sentences for conjoined Subject trials contained MASC SG Subjects and agreement.

Analysis: Responses were scored for the participial ending and the auxiliary verb form. Gender analyses in the Figures are given in stacked columns as proportions.

## **Findings**

- 1. Mixed Gender Conjoined NPs Consistently Elicit Masculine Agreement (Exps. 1 & 2), consistent with standard account.
- 2. For uniformly Neuter NPs, Gender Resolution Varies with the Conjuncts' Grammatical *Number* (Exps. 1 & 2):

In the case of [Neut.sing & Neut.sing], the resolution value was predominantly Masc. Dual.

The comparison with [FEM.SG & FEM.SG] confirmed the markedness asymmetry [1,7] between Neuter and Fem:

FEM. DUAL resolution for conjoined FEMININE is more common than NEUT.DUAL for conjoined NEUTERs (see Figure 1).

For conjoined plurals, we compared [Neut.pl & Neut.pl] to [Fem.Pl & Neut.Pl], to establish the baseline for resolution rates. Contrary to the standard account, the resolution for [NEUT.PL & NEUT.PL] was predominantly NEUT.PL (see Figure 2).

When compared both to [Neut.du & Fem.du] and to [Neut.pl & Fem.sg], the high proportion of –i participle responses to [Neut.du & Neut.du] indicates a mix of conjunct agreement and resolution to MASCULINE.PLURAL (see Figure 3). Neuter dual responses for non-conjoined target Subjects (see Figure 4) indicates that this is not due solely to the markedness of Neuter dual agreement.

## 3. Experimental Confirmation for Closest-Conjunct Agreement

Both First Conjunct and Closest Conjunct agreement were observed for the Subject-Predicate order (see Figure 2).

Follow-up: If only edges are accessible, prediction is that [NPL & FPL & NPL] should disallow FPL agreement.

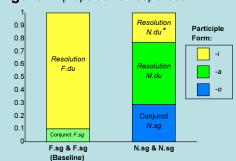
## 4. Apparent Divergence between Auxiliary Number and **Participle Number**

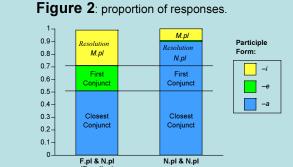
In mixed number condition ([PL & SG]), auxiliary responses included Dual Agreement.

Follow-up: May be due to "Conjunction of Two Conjuncts" yields sensation of Two-ness". Solution: Conjoin Three elements.

### Comparisons

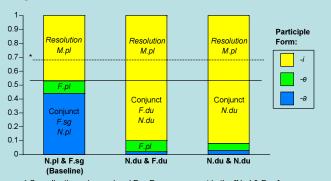


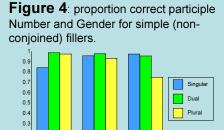




\* Complication: -i may signal Masc.Plural agreement

Figure 3: proportion of responses.





\* Complication: -i may signal Fem.Dual agreement in the [N.pl & F.sg]

# **Implications & Further Directions**

- 1. Markedness within Gender: Slovenian Gender Resolution is modulated by number for [Neuter&Neuter], but not [Feminine&Feminine] conjoined NPs.
- 2. Dependence of Gender on Number: Slovenian Default Masculine occurs more with *Dual* auxiliaries than Plural auxiliaries only in Conjunct configurations.

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