

Agreement with disjunctive subjects in French: Investigating a semantic hypothesis

Background: When the subject of a sentence involves a disjunction of two singular nouns, e.g., *The lawyer or the accountant {is/are} attending the meeting*, it is unclear how the verb should agree in number. This uncertainty has been experimentally demonstrated for English, Italian, French, German, and Romanian [1-5]. [1] reports that English speakers tend to prefer singular agreement, but also adopt strategies such as "Plural wins" (select plural as soon as one disjunct is plural) and "Proximity" (agree with the nearest noun). [1] also explores the semantic hypothesis that the more exclusive the disjunction, the more the singular should be favored, but he finds no apparent difference between *or* and *either...or* (the latter being typically more exclusive). [2] report acceptability judgment data in English and Italian showing that both plural and singular agreement are judged as less acceptable than grammatical controls, but more acceptable than ungrammatical controls. They propose that agreement with disjunctive subjects represents a grammatical lacuna: with no pre-determined way to value verbal number, speakers resort to various strategies. [3] report similar data in French, finding little difference between singular and plural agreement for subjects containing *ou* ('or'). [4] provide evidence from German for variable agreement with singular disjuncts. Based on picture selection and sentence selection data, [5] show that Romanian children favor a one-to-one mapping: when one disjunct is true, they prefer the singular; when both are true, they prefer the plural. In contrast, Romanian adults favor singular agreement or adopt other strategies. On the other hand, sentence completion data from Greek [6] and proposals for similar structures in Russian [7] suggest that exclusivity of the disjunction should favor singular agreement. In sum, previous findings are quite mixed in terms of which agreement pattern is favored, and whether agreement is influenced by interpretation.

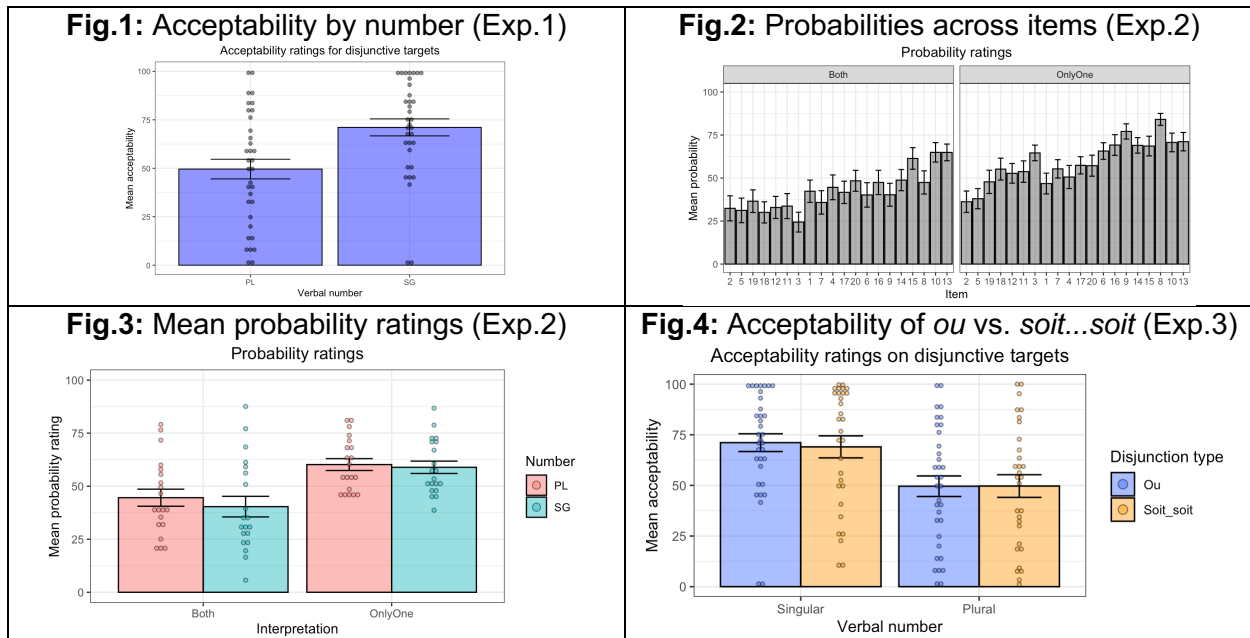
Current study: In a set of three experiments conducted in French, we further probe the semantic, interpretation-based hypothesis. To preview, E1 reveals a baseline preference for singular agreement with *ou* 'or'; E2 reveals that these acceptability ratings are not explained by the likelihood of inclusive/exclusive readings of disjunction; E3 reveals that the complex disjunction *soit...soit* (typically more exclusive than *ou*) does not boost the preference for singular agreement. These findings do not support a semantic hypothesis.

Exp.1: We used an acceptability judgment task to establish a baseline for singular and plural agreement with disjunctive subjects containing *ou* 'or'. 34 native French speakers completed the experiment, which consisted of 60 trials (20 targets, 20 controls, 20 fillers). Target items contained singular disjuncts with a singular (x10) or plural (x10) verb; control items manipulated number grammaticality with singular and plural subjects; filler items involved clearly grammatical/ungrammatical sentences, manipulating tense (x10) and the placement of negation (x10). Performance on controls/fillers was as expected, with mean ratings above 94% for grammatical controls/fillers and below 7% for ungrammatical controls/fillers. A mixed effect linear regression model on the disjunctive targets (see Fig.1) revealed a significant effect of Number ($\chi^2(1)=6.8$, $p=.0093$), with participants favoring singular agreement (71%) over plural agreement (50%).

Exp.2: We hypothesized that the variable judgments observed in E1 might have been influenced by how likely participants were to access an exclusive interpretation of the disjunction in question, which could especially have been affected by the particular combinations of nouns and predicates we tested. We presented the same target sentences from E1 to a new group of 20 French native speaker participants and asked them to rate the likelihood of inclusive and exclusive interpretations of the disjunctions (*Quelle est la probabilité que les deux personnes mentionnées fassent l'action?* 'What is the probability that both mentioned people do the action?' / *Quelle est la probabilité qu'une seule des personnes mentionnées fasse l'action?* 'What is the probability that only one of the mentioned people does the action?'). We observed a range of probability ratings across items (Fig.2), but a mixed effect linear regression model revealed no effect of either type of probability rating (nor their interaction) on the acceptability ratings obtained in E1; participants overall rated the exclusive 'only one' interpretation more probable (Fig.3), and this did not seem to be related to verbal number.

Exp.3: To further test the semantic hypothesis, we conducted another acceptability judgment study, this time replacing the simple *ou* with the complex *soit...soit*. According to [8], complex disjunctions such as *soit...soit* are associated with obligatory exhaustification, hence why they are typically interpreted more exclusively than simple disjunctions. On the semantic hypothesis, disjunctive subjects involving *soit...soit* should be more likely to be interpreted exclusively, and should thus favor singular agreement even more than *ou*. A new group of 30 French native speakers completed the *soit...soit* condition, which included the same number and types of trials as E1 (except that *ou* was replaced by *soit...soit* in the targets). A mixed effect linear regression model on the *ou* ratings (E1) and *soit...soit* (E3) ratings (Fig.4) revealed no effect of disjunction type (nor interaction between number and disjunction type) — that is, no evidence that *soit...soit* gave rise to a larger preference for the singular compared to *ou*.

Discussion: The experiments do not reveal any evidence that participants' ratings for singular/plural agreement with disjunctive subjects are influenced by interpretation — contra [6], but in line with [1,2]. In their Exp.5, [2] showed that manipulating exclusivity of the predicate (e.g., *to be the next CEO* should be exclusive, thus singular) did not affect agreement. To explain the generally variable judgments, we can turn to [4], who propose that two constraints operate: one requiring agreement with the entire disjunction of two (or more) alternatives (thus favoring the plural), and one requiring agreement with each individual disjunct (thus favoring the singular). For disjunctions of two singulars, these constraints are ranked equally, resulting in variable agreement. As for the semantic hypothesis, it is possible that interpretation does play a role, but that the way we completely randomized the combination of singular nouns and predicates in our experiments may have discouraged participants from focusing on their interpretation of the disjunction, relying instead on a shallower, proximity-based heuristic favoring the singular. Follow-up studies could: (i) include a mixture of singular and plural disjuncts, to quantify the role of proximity; (ii) manipulate the (in)compatibility of the conjoined nouns with the predicate, better controlling for inclusivity/exclusivity.



References: [1] Peterson (1986). Establishing verb agreement with disjunctively conjoined subjects: Strategies vs principles. [2] Foppolo & Staub. (2020). The puzzle of number agreement with disjunction. [3] An & Abeillé. (2021). L'accord sujet-verbe avec *ou* et avec *ni* en français. [4] Himmelreich & Hartmann. (2023). Agreement with disjoined subjects in German. [5] Bleotu et al. (2024). Agreement with singular disjuncts in adult and child language. [6] Flouraki & Kazana. (2009). Constraining disjunctive agreement in Modern Greek. [7] Ivlieva. (2012). Obligatory implicatures and grammaticality. [8] Spector. (2014). Global positive polarity items and obligatory exhaustivity.