

## Topic OR Focus, that is the question.

**Introduction.** Although disjunction is a widely studied phenomenon within theoretical linguistics, experimental pragmatics and acquisition (cf. Geurts, 2010 and Chemla and Singh, 2014 for an overview), the interpretation of disjunctive statements in different “contexts” (in a wide sense, including syntactic, semantic, and conversational) still remains a puzzle. While in logic “ $A \vee B$ ” is True when both A and B are true (*inclusive* interpretation), “A or B” in natural language is typically assigned the *exclusive* interpretation, according to which the sentence is True if only one of the two disjuncts is True, and False otherwise. Since Grice, the exclusive interpretation has been analyzed as a pragmatic (scalar) inference that ensues from the fact that *or* is the weaker term in the scale <or, and>, and thus appropriate only when the more informative term *and* is not at stake. Being a Scalar Implicature (SI), the exclusive interpretation might get suspended in contexts in which informativity is reversed, as in Downward Entailing (DE) contexts, or when the purposes of the exchange “suspend” informativity.

In general, it is assumed that SIs involve a set of alternatives (ensuing from the lexical meaning of the scalar term and thus constrained by the grammar) that are subsequently restricted on the basis of context, which selects only those alternatives that are relevant in the specific exchange/situation. The link between SI and focus is at the core of a range of theoretical proposals (Chierchia, 2006; Fox, 2007; Fox and Katzir, 2011; Katzir, 2007; Krifka, 1995). Nonetheless, only a few experimental studies have directly manipulated “focus” (by different means) in order to affect SI computation. They have done so either by manipulating the Question Under Discussion (Cummings & Rhode, 2015; Zondervan, 2009), by manipulating the visual/acoustic saliency of the scalar term (Chevallier et al. 2008), or by manipulating the position of the scalar item in the sentence and its association with an overt focus operator like *only* (Breheny, Katsos and Williams, 2006; see also Geurts, 2010). All these studies show that the enriched pragmatic meaning is accessed more frequently when the scalar alternatives are made salient or evoked in the discourse.

**Experimental Study.** In this work we present an experimental study on the interpretation of disjunction in which we manipulate its position in the sentence in order to affect its informational status and thus the saliency of scalar alternatives. To do so, we exploited the feature of Italian that it allows for both pre- and post-verbal subjects. Crucially, the pre-verbal subject position (in case of neutral prosody) is analyzed as *Topic*, while the post-verbal subject position is analyzed as *Focus* (Belletti, 2001). In order to test which interpretation is favored in each case (either *inclusive* or *exclusive*), we manipulated number agreement on the matrix verb. We reasoned that singular agreement would be relatively more compatible with an *exclusive* interpretation of the disjunctive subject, and plural agreement with an *inclusive* interpretation. We tested disjunctive sentential subjects like “[the laptop] or [the E-Book reader]” (in which two singular NPs are linked by a disjunction) either occurring before or after the predicate (i.e. in Topic or Focus Position), marked by singular or plural Agreement:

(1) Il PC portatile o il lettore E-Book sono stati venduti<sub>[+PLU]</sub>/è stato venduto<sub>[+SING]</sub> su E-Bay per pochi euro.

(2) Per pochi euro sono stati venduti<sub>[+PLU]</sub>/è stato venduto<sub>[+SING]</sub> su E-Bay il PC portatile o il lettore E-Book.

(3) The laptop or the E-Book reader have been sold<sub>[+PLU]</sub>/has been sold<sub>[+SING]</sub> for few Euros.

Note that both sentences are equivalent in meaning to the English version in (3) and that the only difference between (1) and (2) is the Position of the disjunctive element. Note also that none of the four combinations is ruled out by grammar, although it is not clear what “prescriptive” grammar allows in these cases; moreover, there is no experimental evidence as far as speakers’ preference for one over the other agreement pattern in these constructions (though cf. Haskell & MacDonald, 2005, for English).

We ran an experiment using *Ibex Farm* (<http://spellout.net/ibexfarm>) and invited participants (N=17) to express a judgment on a series of sentences by selecting a number on a scale 1-7 (where 1 corresponded to “totally ruled-out” and 7 to “perfectly fine”). Materials comprised 12 critical sentences, 3 for any combinations of our 2 level factors (Topic-Focus; Sing-Plu) and 12 controls (4 perfectly grammatical sentences; 4 absolutely ungrammatical sentences; 4 mildly unacceptable sentences that are mostly acceptable in colloquial Italian). Items were rotated randomly within subjects and items.

**Results.** We found that participants preferred the singular agreement when *or* appeared in Focus, while they preferred the plural agreement when *or* appeared in Topic. Judgments on control items patterned as expected. Means per conditions in are summarized in Table 1.

Disjunctive statements			Controls	
	Topic	Focus	Ungrammatical	1,72
Plural	4.19	3.09	Grammatical	6,23
Singular	3.52	3.81	Mild violations	4,03

Table 1. Mean by condition (on a scale 1-7) in disjunctive statements (left) and controls (right)

An analysis of variance performed in R (<http://CRAN.R-project.org/package=ez>) showed a significant interaction between Position and Agreement, as summarized in Table 2.

	DFd	F	p	ges
Position (Topic-Focus)	16	1.577	0.227	0.014
Agreement (sing-plu)	16	0.007	0.934	0.000
Position:Agreement	16	5.958	0.027*	0.049

Table 2. Results of the ANOVA by subject

In general, we noticed that participants assigned a low rating to disjunctive statements, independently of position and agreement, despite their high ratings on the grammatical controls. Because disjunctive statements are particularly susceptible to plausibility constraints (Wason, 1964), we are currently testing a new group of subjects in a novel version of the experiment in which the same sentences are being tested, but a lead-in sentence has been added, to render disjunction more appropriate and leave the inclusive reading (A and B) open by explicitly mentioning the possibility of the truth of more than one disjunct, and by rendering more explicit the speaker’s ignorance as to the outcome of the events.

**Discussion and conclusion.** In an acceptability judgment task, we tested the interpretation of disjunctive statements with a different Informational Status (Topic vs. Focus) by manipulating agreement on the matrix verb as an indirect measure of the preferred interpretation assigned to disjunction (inclusive vs. exclusive). We found that Italian speakers preferred singular agreement when the disjunctive subject appeared post-verbally, i.e. in Focus position, while they preferred plural agreement when the disjunctive subject appeared pre-verbally, i.e. in Topic position. We argue that this preference ensues from the interpretation assigned to disjunction: this is interpreted as *inclusive* when the alternatives are less salient (or activated) in the discourse (i.e. in Topic); and it is interpreted as *exclusive* when the alternatives are activated, i.e. in Focus. This result will be discussed within current theories of Scalar Implicature.