

RC-attachment preferences in Italian: the effect of number, gender and animacy.

Francesca Foppolo & Martina Abbondanza

University of Milano-Bicocca, Milan, Italy

francesca.foppolo@unimib.it, m.abbondanza1@campus.unimib.it

Relative-clause (RC) attachment preferences of sentences like (1) have been a matter of a cross-linguistic vivid debate, with mixed and controversial results:

(1) The reporter interviewed the daughter_{NP1} of the colonel_{NP2} who was injured

Although English prefers low-attachment of the RC (i.e., to NP2), consistently with *Late Closure* (Frazier & Fodor, 1979), a high-attachment preference has been attested in other languages like Spanish or Russian (a.o., Cuetos & Mitchell, 1988). Variability in RC-attachment preferences has been attributed to different factors, including the availability of pseudo-relatives in a given language (Grillo & Costa, 2014). Pioneering work in Italian (De Vincenzi & Job, 1997) reports low-attachment preferences in a self-paced reading task.

Our study. We aimed to extend previous findings by testing RC-attachment preferences in Italian by means of an acceptability judgement task (Exp.1), a self-paced reading task (Exp.2) and a hybrid maze task (Exp. 3) with a more controlled set of stimuli in which we vary morphosyntactic and semantic features of the nouns. In all studies, we tested sentences in which the low/high attachment ambiguity is resolved in the verb region either by gender (2), number (3), or animacy (4) to test if and how these factors modulate RC-attachment preferences (in (4) disambiguation is via number or gender). We avoided perception verbs to control for pseudo-relatives (Pozniak et al., 2019). Low-attachment agreement is underlined in the examples:

(2) L'avvocato ha difeso il padre della ragazza che si è tradita/tradito al processo.

The lawyer defended the father_[+M] of the girl_[+F] that self-betrayed_[+F/+M] at the trial

(3) Maria ha visto la madre delle ragazze che hanno/ha avuto un incidente.

Maria saw the mother_[+S] of the girls_[+P] who had_[+P/+S] an accident

(4) Luca ha convocato il dirigente della scuola che è apparsa/apparso sul giornale.

Luca called the principal_[+A,+M] of the school_[+I,+F] that appeared_[+F/+M] on the newspaper

Materials in all studies comprised 144 sentences (72 fillers) in the 3 (gender/number/animacy) x 2 (low/high) conditions (position of the NPs was counterbalanced). Different groups of participants were tested across the studies. In **Exp. 1** participants (N=42) rated sentences on a 7-point Likert scale. Results (Fig. 1) were analyzed by ordinal regression models and showed: (i) a general preference for low attachment in the gender condition ($z=-1.9$, $p=.05$); (ii) no preference in the number condition ($z=-1.2$, $p=.2$); (iii) in the animacy condition, attachment was significantly modulated by the animacy of the NPs ($z=3.8$, $p=.0001$): when NP1 is animate and NP2 inanimate, high attachment is preferred; when NP1 is inanimate and NP2 animate, low attachment is preferred (no significant interaction between preference and gender or number emerged instead, $z=-.06$ and $z=.2$, $p=.9$ and $p=.8$). **Exp. 2** was a self-paced reading task (79 participants). Mixed linear regression models on reading times on the interest areas (i.e. the disambiguating verb and the word preceding and following it) showed no preference between high-low attachment in any condition, nor significant interactions between the properties of the NPs (gender, number, animacy) and attachment. In **Exp. 3**, sentences were presented word by word until participants (N=53) had to choose between two verb forms (which disambiguated towards NP1 or NP2) to continue the sentence in the most natural manner. Logistic regression models on verb selection showed a general preference for high attachment ($z=6.6$, $p<.0001$). Significant effects of gender, number and animacy in attachment preferences was also revealed ($z= 3.4$, $z = -3.7$ and $z = -3.2$ respectively, all $ps.<.001$, Fig. 2): when NP1 was masculine, singular or animate, the verb chosen was masculine or singular above 85% of the cases; when

it was feminine or plural or inanimate, each verb was selected around 50%, suggesting that there is no clear preference for high/low attachment in these cases.

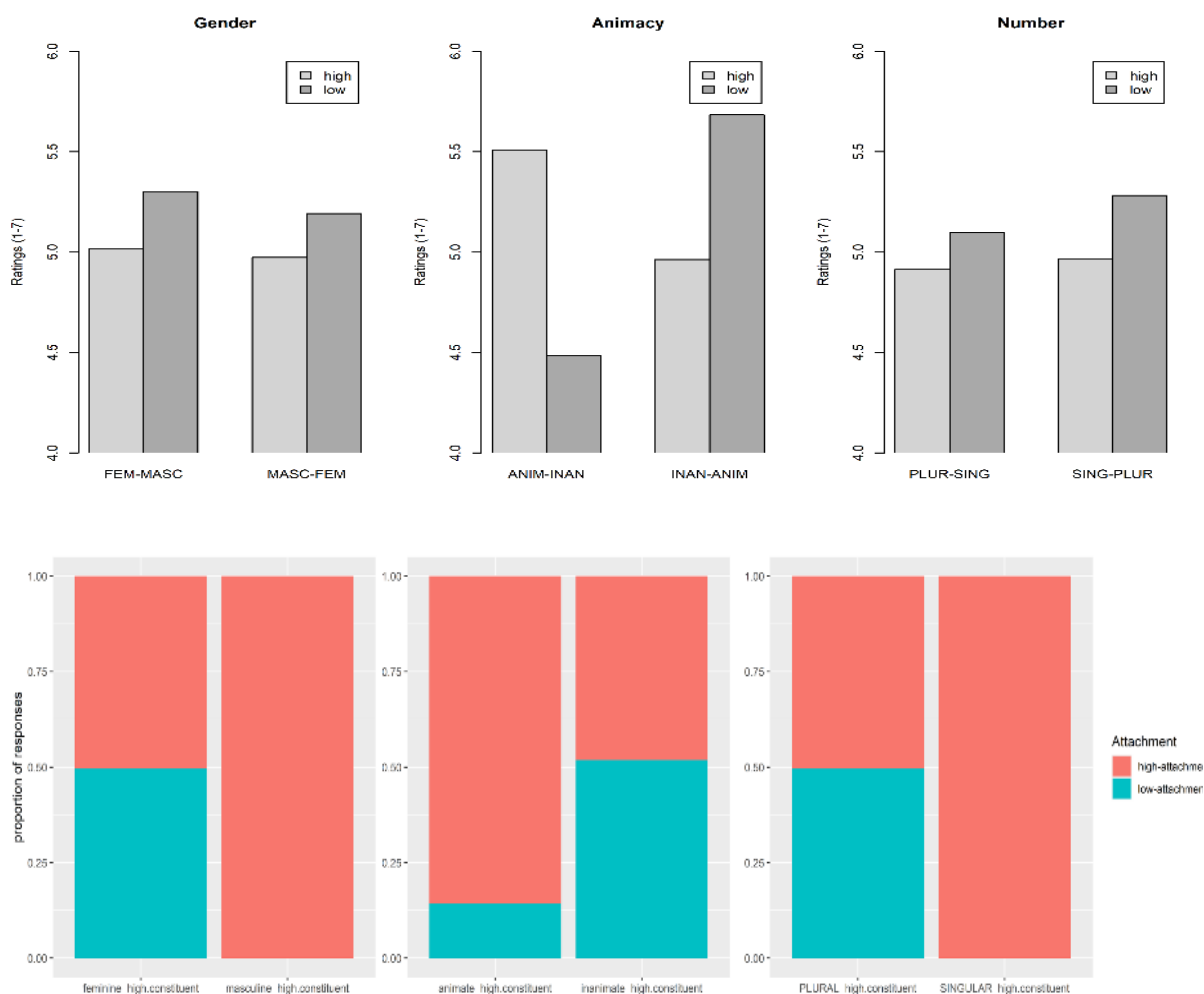


Figure 1 (top) and **Figure 2** (bottom). Mean ratings (Exp. 1) and proportion of high/low attachment (Exp. 3) depending on gender (left), animacy (middle) and number (right).

Conclusions. We show some variability in RC-attachment preferences in Italian. In the self-paced reading task (Exp.2), no preference emerged. In Exp.1 and Exp.3, the preference was modulated by the properties of the antecedents, especially by animacy: an animate noun triggers the RC-attachment, independently of its position. This is particularly evident in the off-line judgment task (Exp. 1). Gender and number seem also to have an impact on preferences in verb-selection (Exp. 3), in which the RC seems to be preferably attached to the singular or masculine noun. This suggests that semantic and morphosyntactic features modulate syntactic preferences, possibly at different levels of processing. To investigate this further we are currently testing the impact of number, gender and animacy in RC-attachment preferences by means of an eye-tracking reading study on similar materials. This will allow to have more fine-grained analyses of the interplay of these features in RC-attachment preferences during online processing.

Selected References: Cuetos & Mitchell (1988). Cross-linguistic differences in parsing: Restrictions on the use of the late closure strategy in Spanish. *Cognition*. De Vincenzi & Job (1993). Some observations on the universality of the Late Closure strategy. *Journal of Psycholinguistic Research*. Frazier & Fodor (1978). The sausage machine: A new two-stage parsing model. *Cognition*.