

The 7<sup>th</sup> CUNY/SUNY/NYU Mini Conference - ABSTRACT

**Attachment Ambiguities in Romanian Relative Clause Constructions**

**Background and research questions:**

Cuetos and Mitchell (1988) proved that the attachment preferences that Spanish speakers manifest in parsing the NP VP NP1-of-NP2 RC constructions challenge the putative universality of the Late Closure principle stipulated by Frazier's (1987) Garden-Path model for the human sentence processor. In the sentence

*Someone shot the maid of the actress who was on the balcony.*

the NP1 *the maid* and the NP2 *the actress* are equally plausible hosts for the relative clause (RC) *who was on the balcony*. According to the Late Closure principle, the human parser should universally attach the RC *who was on the balcony* to the structurally lower NP2 *the actress*. In other words, if Late Closure applies cross-linguistically, the answer to the question *Who was on the balcony?* has to reveal a universal tendency towards a low attaching processing of the ambiguous structure: *the actress was on the balcony*. However, experimental evidence (Cuetos and Mitchell, 1988, Carreiras & Clifton, 1999) shows that Spanish speakers tend to attach high when processing the ambiguous relative clause structure. The sentence

*El periodista entrevistó a la hija del coronel que tuvo el accidente.*

'The journalist interviewed the daughter of the colonel who had the accident'

in which the two nouns of the nominal complex, NP1 *la hija* and NP2 *el coronel*, are equally plausible attachment sites for the relative clause, will be generally interpreted by Spanish speakers as a high attaching construction: *la hija tuvo el accidente* ('the daughter had the accident'). Therefore, unlike English, Spanish abides by Early Closure.

Further proof for the cross-linguistic idiosyncratic processing of the structure mentioned above was provided by data on Italian (De Vincenzi & Job, 1995), Dutch (Brysbaert & Mitchell, 1996), and French (Zagar et. al., 1997) among others. French and Dutch prefer the higher noun N1 as the attachment host thus complying with Early Closure. Italian and English appear to obey Late Closure. What exactly determines whether a language is high or low attaching? Frazier and Clifton's (1996) *Construal* ultimately claims that the availability of an unambiguous high attaching genitive construction Saxon genitive in English elicits low attachment in the alternative genitive construction. Dutch appears to be an exception given that Dutch is a high attaching language despite possessing an unambiguous genitive construction. Gibson et. al.'s (1996) *recency/predicate proximity hypothesis* claims that the greater the distance between the predicate and its arguments, the stronger the tendency to attach high. The rigid word order in English keeps the arguments in adjacent positions to the verb. The more flexible word-order in Spanish allows a greater distance between the verb and its arguments which increases the activation of the verb due to distant binding processes. The higher noun in the structure, physically closer to the activated verb, will attract attachment. However, the RC attachment preferences in Spanish change when the preposition in the complex noun changes. (Gilboy et al, 1995, Igoa, et al, 1998). Low attachment is preferred when NP1 and NP2 are linked by the preposition *con* ('with') instead of *de* ('of'). The recency/predicate proximity factors should not be affected by such change since the distance between the predicate and its arguments remains the same.

It is obvious that we lack a theoretical account that is able to comprehensively account for the variation in relative clause attachment across languages. Data from any uninvestigated language may increase the chance of detecting the factors that are responsible for the cross-linguistic difference in relative clause attachment patterns. A pilot study on the processing of ambiguous relative constructions in Romanian is presented below.

**Attachment Ambiguities in Romanian Relative Clause Constructions: data and interpretation.** An off-line pilot study showed that Romanian speakers tend to attach low when presented with an RC ambiguous construction such as the following: 1. *Hoțul cel îndemînatec a scos cu grijă cadrul tabloului care era fragil.* ('The skillful thief carefully removed the frame of the painting that was fragile'). The relative clause *care era fragil* can equally modify the high NP1 *cadrul* or the low NP2 *tabloul*. Target sentences contained pairs of long & short relative clauses in order to observe possible length effects in the RC attachment. 2. *Hoțul cel îndemînatec a scos cu grijă cadrul tabloului care era fragil deși fusese bine prezervat.* ('The skillful thief carefully removed the frame of the painting that was fragile despite having been well preserved') is the long counterpart of sentence 1. An average percentage of 59.08 % low attachments as an overall and 68.17 % low attachment in the short relative clause version show a tendency to obey Late Closure in Romanian. The relatively low overall percentage of Late Closure interpretations may be due to the English-Romanian language contact environment in which the subjects were tested. A monolingual study will provide a more accurate set of data. The absence of an unambiguous possessive construction in Romanian discourages a Construal-based account for the attachment preference. Romanian is similar to Spanish with respect to word-order and the distance between predicates and their arguments. If Gibson's recency/predicate proximity hypothesis were universally true, Romanian should favor high attachment. However, our data show a low attachment preference in Romanian. What factors are then responsible for the late closure interpretation of the relative clause structure in Romanian? The structure of the complex noun NP1-of-NP2 in Romanian may encourage low attachment due to the case marking effects on parsing. In both English and Spanish both NP1 and NP2 in the complex NP1-of/de-NP2 have nominative forms. What makes the Romanian construction different is, first, the absence of the preposition in the nominal complex and, secondly, the genitive-marked form of NP2. In other words, in both English and Spanish the preposition preceding NP2 is responsible for the genitive case. In Romanian, the genitive case is assigned by the definite article of the previous noun NP1 (Grosu, 1988) and is morphologically realized in the *-ului* ending of the lower noun NP2. The difference in the structure of the two attachment sites may increase the tendency of the informants to attach the relative clause low, that is, to the *marked* noun phrase NP2. Further data on *case-markedness* effects on parsing in Romanian will prove this assumption correct or false. Fernandez (2003) shows that the implicit prosodic contour in Spanish places a break before the relative clause. This break separates prosodically the two noun phrases in the complex NP1-de-NP2. The Romanian prosodic contour tends to posit a break before the NP complex NP1 – NP2-*ului*. Especially in the short RC version, the prosody does not allow a second break between NP2 and the relative clause. Therefore, the Romanian prosody appears to encourage the Late Closure interpretation for relative clause attachment ambiguity.

In conclusion, the present study investigates, among other factors that might turn out to be relevant, the case-marking effect and the prosody effects on the parsing of relative clause attachment ambiguities in Romanian.

***Selected references:***

- Cuetos, F. & Mitchell, D.C.** (1988). Cross-linguistic differences in parsing: Restrictions on the use of Late Closure strategy in Spanish. *Cognition*, 30, 73-105.
- Fernández, E. (2003).** *Bilingual Sentence Processing: Relative Clause Attachment in English and Spanish.* John Benjamins Publishing Company, Amsterdam / Philadelphia.
- Frazier, L. & Clifton, C.** (1996). *Construal.* Cambridge, MA: MIT press.
- Gibson, E., Pearlmutter, N., Canseco-Gonzales, E., Hickok, G.** (1996). Recency preference in the human sentence processing mechanism. *Cognition*, 59, 23-59.
- Fodor, J.** "Prosodic Disambiguation in Silent Reading", *NELS* 32:113-32, 2002.