Comparative clauses and cross linguistic variation

Gabriela Matos & Ana Brito

Universidade de Lisboa/Onset-CEL & Universidade do Porto/CLUP

1. The architecture of comparatives raises three major related questions: (i) the correlation between the overt quantificational/degree element and the comparative connector heading the second term of comparison; (ii) the categorial status of the comparative connector; (iii) the phrasal or sentential nature of the comparative constituent. Focussing on sentential comparatives in European Portuguese, in contrast with English, Spanish and Italian, we claim that comparatives structurally differ across languages and within the same language in accordance with the categorial status of the comparative connector and the *wh* or quantifier nature of the A-bar element in the sentential constituent.

2. Since Chomsky 1977, studies on clausal comparatives in English (e.g. Kennedy 1999, Pancheva 2006) have analysed them as WH-CPs inserted in PPs, headed by *than*, a Partitive preposition,

according to Pancheva 2006, see (1b):

(1) a. John is taller than Mary is. b. (...) [PP] than [PP] t

Extending this analysis, several authors assumed that clausal comparatives in other languages also occur inside PP (Brucart 2003, Merchant 2006, Pancheva 2006), and may be uniformly characterized as free relatives (Donati 1997, Pancheva 2006, Marques 2004, Matushansky 2001), (2):

(2) a. Juan compró mas periódicos [PP de los que compró Maria]. (Spanish)

Juan bought more newspapers than the (ones) that bought Maria (Brucart 2003)

b. Paolo ha mangiato più biscotti di [CP[whquantii] ne ha mangiati [-]i Maria. (Italian)
Paolo has eaten more cookies than wh-pl of-them has eaten Maria (Donati 1997)

Paolo has eaten more cookies than wh-pl of-them has eaten c. *Marija je viša* [PP nego [whP (što je) Petar]]. (Serbo-Croatian) Marija is taller than what is Petar

(Pancheva 2006)

None of these assumptions is uncontroversial. The comparative connector 'than' and its correlates across languages have also been analysed as coordinators (Napoli 1983, Matos & Brito 2002), at least at some point of the derivation (Lechner 1999, 2001) or for some subtypes of comparatives (Saez del Álamo 1999). As for the sentential comparative constituent, Portuguese shows that it may not always be characterized as a free relative clause, i.e., as a WH-CP, a finding that rejoins data from Italian presented in Donati 1997, but whose consequences have not clearly been assumed.

3. In Portuguese *do que* does not behave like a preposition, (3). The form *de* ('of') in comparatives is not independent of *o que*, as shown by the lack of a comparative clause reading for (4), an example at first glance identical to (2a), and by the lack of phrasal comparatives introduced just by *de*, (5a). Also, *do que*, as a whole, does not count as a preposition, since it seems unable to assign (oblique) case, (5b):

(3) a. Ela é mais alta do que eu sou.

she is more tall of the that I am ('She is taller that I am.')

b. *Ele comprou mais jornais* do que nós comprámos. (comparative) he bought more newspapers of the that we bought. 'He bought more newspapers than we bought.'

(4) #Ele comprou mais livros d(e) os que nós comprámos. (partitive) He bought more books of the (ones) that we bought.

(5) a. *Ela é mais alta de mim she is more tall than me

b. *Ela é mais alta do que mim. she is more tall than me.

4. Since the comparative connector in Portuguese exhibits the form (o) que, also occurring in whphrases, (6a), it is tempting to assume that comparatives in this language always involve free relatives. Yet, there is no evidence that in current Portuguese o que is a wh-phrase, since it may co-occur with a relative constituent in the same single clause, (7), contrary to true relative wh-phrases, (8). These data show that comparative clauses may contain a relative clause, (7), or not, (3). They also suggest that, in the latter case, only Quantifier Raising of the quantified element occurs, (9).

(6) a. Ele admira o que tu escreves. he admires what you write.

(7) a. Os críticos louvaram mais o quadro [do que] [quem] o pintou. the critics praised more the painting than who painted it'.

- b. As crianças comeram mais chocolates num dia do que os que tu comes numa semana. the children eat more chocolates in a day than those that you eat in a week.
- (8) *Os críticos louvaram [o que] [quem] pintou.
 the critics praised what whom painted.
- (9) Ela é mais alta do que [OP -]i eu sou [I-]i. (cf. (3a))

Island effects, (10), seem to argue in favour of the *wh* nature of the comparative clauses. Still, these effects may be imputed to other factors, namely to the re-merge of the quantified element in a scope A-bar position, as in (10), a sentence exhibiting only "Comparative Subdeletion".

(10)*Ela é mais alta do que eu vi um rapaz que era [-] gordo. (cf.Ela é mais alta do que tu és gorda)
She is taller than I saw a boy who was fat. She is taller than you are fat

These two types of comparatives, those containing a free relative and those lacking it, have also been recognized in other romance languages (Donati 1997, Saez del Alamo 1999, Brucart 2003)-e.g., Donati contrasts standard comparatives in Italian, (2b), with restritive relative comparatives, (12).

Maria ha mangiato più biscoti di quelli che ha mangiato t_i Giulia. Maria has eaten more cookies than those that has eaten Guilia

5. To capture the correlation between the degree expression and the degree clause it has been claimed that the comparative clause is selected by a degree word, forming with it a DegP that specifies a gradable predicate, (13a), (Bresnan 1973, Heim 2000, Bhatt & Pancheva 2004), or is the complement or modifier of Deg (e.g. Abney 1987, Kennedy 1997), (13b):

a. [AP [DegP Deg CP] A] b. [DegP Deg AP CP] /. [DegP Deg AP] CP] (13)

In (13a), the degree clause precedes the Adjective. So, in classical analyses Extraposition operates placing the CP in a post-gradable predicate position. Starting with (13a), Bhatt & Pancheva 2004 adopt a different view: they claim that the obligatory Extraposition is not due to word order requirements, but to trace interpretation (Fox 2002). Besides, they claim that QR applies covertly, moving the degree head to a scope position and right adjoining it to a maximal projection, XP, containing the AP. Then, the degree clause is late merged to the raised Deg, (14), and at PF the copy of the moved degree head is spelled out:

 $(14) \left[\underset{XP}{\text{XP}} \left[\underset{AP}{\text{AP}} \left[\underset{DegP}{\text{Deg}} Deg \right]_{i} A \right] \right] \left[\underset{DegP-i}{\text{Deg}} \left[\underset{Deg'}{\text{Deg}} CP \right] \right] \right]$

Although departing from those authors in not assuming the wh nature of the CP, we could try to accommodate this analysis to Portuguese, hypothesizing that the CP is a completive clause selected as a complement by Deg (cf. (13a)) and headed by do que, viewed as a complementizer instancing Force (we discard the possibility of analysing do que in current Portuguese as split C projections (Rizzi 1997), de+o que, because no overt expression may follow de nor precede o que in comparatives). Yet, this analysis must be rejected. Late Merge does not apply to complements, but to Adjuncts

(Lebaux 1988, Chomsky 2004). Besides, this hypothesis is inconsistent with the behaviour of clauses headed by other occurrences of the form que as a complementizer: while the latter exclude infinitival clauses, (15b), and gapping phenomena, (16b), do que sentences accept them, (15a) and (16a).

(15) a. Eles apreciam mais tu descansares do que nós ganharmos o concurso. They appreciate more you (to) rest.Infinitive.2sg than we (to) win.Infinitive.2sg the contest

{descanses/*descansares}. b. Eles apreciam que you {rest/(to) rest.Infinitive.2sg} They appreciate that

(16) a. Ela come mais bolos do que eu [-] chocolates. b.*Eu como chocolates e acho que ela[-]bolos She eats more cakes than I [-] chocolates. I eat chocolates and I think that she [-] cakes

6. Thus the categorial nature of *do que* remains to be determined. Considering the dependency relation it establishes with the degree word, we hypothesize that it integrates a specific kind of correlative coordination, (17), (18). This explains (15a)-(16a): coordinators accept (in)finiteness and gapping.

(17) a. Tu és {mais/menos/*tão} alto do que gordo You are more/less/*as tall than fat

b. Tu és tão alto como/*do que gordo. You are as tall/*than fat

(18) a. Not only John {but also/*and} Mary

b. Both John {and/*but also} Mary smiled.

In correlative coordination, when the initial correlative word is an adverbial, it may modify either the first conjunct or the whole coordinate structure (Kayne 1994:143, Johannessen 2005). In (18b),

both adjoins to the whole coordinate structure: [ConjP both [ConjP John and Mary]] (Johannessen 2005). Also, there are correlative coordinations, where the first correlative adverb, a quantifier-like element, occupies different positions in Syntax and SEM (Larson 1985, Hendrix 2002, Johannessen 2005): in (19), either is internal to the first conjunct in Syntax, but it c-commands it at SEM.

(19) a. [[Mary either is driving to the airport] [or she is taking a cab]]. (Larson 1985)

b. [either [Mary either is driving to the airport or she is driving a cab]] (SEM)

Extending this analysis to canonical comparatives in Portuguese, (20a) would be analysed in Syntax as in (20b) and at SEM as in (20c). Notice that Co(nj) is a categorially underspecified head that assumes the categorial nature of its conjuncts by Agree.

(20)a. Mais alunos saíram do que professores entraram. (more students left than teachers came in). $\begin{array}{l} b. [{}_{\text{CoP=CP/TP}}\left[{}_{\text{CP/TP}}\left[{}_{\text{DegP/QP}}\right. \text{mais}\left[alunos\right]\right][{}_{\text{T'}}\text{sa\'iram}]] \left[\left[{}_{\text{Co=C/T}}\text{do que}\right][{}_{\text{CP/TP}}\right] \text{professores entraram} \right] \right] \\ c. [{}_{\text{CoP=CP/TP}}\left[{}_{\text{CeP-CP/TP}}\left[{}_{\text{CeP/TP}}\left[{}_{\text{DegP/QP}}\right. \text{mais}\left[alunos\right]\right]\right] \left[{}_{\text{T'}}\text{sa\'iram}\right] \left[{}_{\text{Co=C/T}}\text{do que}\right][{}_{\text{CP/TP}}\left[{}_{\text{CP/TP}}\right] \text{professores entraram} \right] \right] \\ \end{array}$

Due its quantifier nature, the degree word is subject to QR at SEM: it Internally merges in adjunction to CoP, and takes scope over the whole comparative structure. We assume that Pair Merge compositionally creates a predication relation (Chomsky 2004). In (20c) this relation holds between the degree expression and the whole CoP structure it adjoins to. As a consequence, a dependency relation arises between the degree word and the comparative connector that heads this structure.