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A little *more* on comparison: variation and common cognitive and linguistic properties

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Abstract

This paper discusses the basic cognitive and linguistic properties of a universal phenomenon: inequality comparison. As will be shown from linguistic and neuropsychological points of view, the cognitive representation of inequality comparison is conceived as a spatial relation (Stassen 1985; Philips et al. *2004), in which two elements stand in an asymmetrical relation with regard to a property or parameter of the comparison. The present study offers a multi-perspective and comparative analysis of degree and amount inequality comparative structures. In particular, it studies the linguistic expression of comparison in three typologically different languages, English, Spanish and Basque. These languages present similar paths in the diachronic evolution of their inequality comparative structures, which are claimed to be related to the semantic properties and cognitive representation of comparison universally. On the basis of the discussion of degree and amount inequality comparatives in these languages, I then summarize the semantic and morphosyntactic features they share, as well as their major points of variation. I also review some of the primary proposals that have been put forth to capture the properties of these structures (Brucart 2003 and Gallego 2013, for Spanish, and Goenaga 2012, for Basque). On this ground, I then propose an alternative analysis for Basque inequality comparatives, which derives the basic properties of these constructions and overcomes some of the difficulties that the preceding analyses had to face.*

Structure of article: § 1. Introduction; § 2. The cognitive representation of comparison; § 3. The typology of inequality comparatives; § 4. Syntactic representation of inequality; comparatives; § 5. Inequality comparatives revisited; § 6. Concluding remarks; 7. References.

Keywords: *comparison, Spanish, Basque, English, inequality comparative structures, typology, syntactic structure, spatial relations. Figure/Ground.*

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Behin batian Loiolan / erromeria zan, / hantxe ikusi nuen / neskatxa bat plazan;
txoria baino ere / arinago dantzan / huraxe bai polita/ han politik bazan!
'Once in Loyola/ there was a romeria,/ right there I saw/ a girl in the town square;
than the bird even/ faster dancing/ wasn't she beautiful/ so beautiful she was!'
(Basque folk poem, Bilintx).

1. Introduction[1]

Essential to our understanding of the world and to the description of experiences is our ability to compare elements and acknowledge the differences and similarities between them. Drawing comparisons, that is, defining an element by contrasting it with some other entity, is considered to be a basic need, a universal phenomenon (Stassen 1985, Kennedy 2007). This comparative operation can be of *equality* (and thus show that both elements are equivalent with reference to some property), or of *inequality* (which manifests that the property possessed by one element is to some extent different to that of a second element).

In this paper I will focus on the later group, which divides in turn into a) *degree comparatives* (DC) and b) *amount comparatives* (AC), depending on whether the axis with regard to which two elements are being compared is a property or an amount. The pairs in (1-3) illustrate the two types of inequality comparative structures in English, Spanish and Basque, respectively.

(1) a. John is far tall*er than* Mike. DC (English)
b. John has eight *more* friends *than* Mike. AC

(2) a. John es mucho *más* alto *que* Mike.[2] DC (Spanish)
John is much more tall than Mike
'John is much taller than Mike'
b. John tiene ocho amigos *más que* Mike. AC
John has eight friends more than Mike
'John has eight more friends than Mike'

(3) a. John Mike *baino* askoz altu*ago*a da. DC (Basque)
John Mike than much tall.more.d is
'John is much taller than Mike'

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[2] The abbreviations used in the glosses go as follows: *s/p* number, *d* determiner, *f* feminine, *m* masculine, *E* ergative, *G* genitive, *aux* auxiliary, *more* comparative morpheme/marker, *than* standard marker, *nom* nominalization, *Ø* imprecise magnitude, *Deg* degree, *Q* quantifier, *loc* locative, *Top* topic, *RCM* relative marker, *not* negation, *fut* future, *D* differential, *S* standard.

b. Johnek Mikek *baino* zortzi lagun *gehiago* dauzka. AC
John.E Mike.E than eight friends more has
'John has eight more friends than Mike'

As it has been persistently acknowledged in the literature (Bresnan 1973, Ordóñez 1994, Izvorski 1995, Gallego 2013, Bácskai-Atkári 2014, a.o.), there is no consensus regarding the labelling of the building blocks that form inequality comparative structures. For the purpose of the comparative structures analyzed in this paper, I will adopt the classification and terminology given in Tables 1 and 2.

Table 1

Components of inequality comparatives in English

Comparee/ Target	Differential	Base-quantifiable/ gradable element	Comparative morpheme/marker	Standard marker	Standard of comparison
(1a) John	far	tall	-er	than	Mike
(1b) John	eight	friends	-er {more/fewer}	than	Mike

Table 2

Components of inequality comparatives in Basque

Comparee/ Target	Standard of comparison	Standard marker	Differential	Base-quantifiable/ gradable element	Comparative morpheme/marker
(3a) John	Mike	baino	askoz	altu	-ago
(3b) Johnek	Mikek	baino	zortzi	lagun	{gehi/gutxi} -ago

In addition to the terminological differences I have just alluded to, there is also disagreement concerning the nature and role of the components of inequality comparatives given in Table 1 and 2. While some linguists defend that the comparative morpheme —*más, -er, -ago*, in Spanish, English, and Basque, correspondingly— is a degree head (Bresnan 1973, Izvorski 1995, Kennedy 1999 and Bhatt & Pancheva 2004 for English, or Brucart 2003 for Spanish, a.o.), authors such as Goenaga (2012) analyse it as a quantifier head (Qº) in Basque. As we will see below, other alternative analyses have also been proposed. I will come back to these questions in sections 4 and 5, when I summarize the proposals that have been put forth for the comparative markers in these three languages, and discuss where the comparative meaning of the construction comes from.

The outline of the paper goes as follows. Section 2 offers an approach to the cognitive representation of comparison as a basic mental operation, both from the point of view of linguistics and developmental neuropsychology. Section 3 describes the typological classification of inequality comparative structures proposed by Stassen (1984, 1985) and briefly describes the components of inequality comparative structures in three languages which display lexically expressed comparative markers: Eng-

lish, Spanish and Basque. Section 4 discusses the basic properties of inequality comparative structures in these three languages and revises some influential proposals put forth to account for the syntactic structure of these constructions in Spanish (Brucart 2003 and Gallego 2013), and in Basque (Goenaga 2012). In Section 5, I propose an alternative analysis for Basque inequality comparatives, which builds on the properties discusses in the previous sections and overcomes some of the difficulties that earlier analysis had to face. Several challenges and questions that remain unanswered regarding these comparative structures will also be pointed out. Finally, Section 6 presents some concluding remarks.

2. The cognitive representation of comparison

2.1. Cognition and comparison: the relevance of spatial relations

Comparative structures provide the linguistic means by which to express a comparison, something considered universal operation based on a basic cognitive need (Stassen 1985, Kennedy 2007). Langacker (1987), who also considers comparison to be a fundamental cognitive operation, describes it as follows:

> Fundamental to cognitive processing and the structuring of experience is our ability to compare events and register any contrast or discrepancy between them. I assume that this ability to compare two events is both generalized and ubiquitous: acts of comparison continually occur in all active cognitive domains, and at various levels of abstraction and complexity. (…) Clearly this complex event [A>B] contains events A and B as components. The symbol > then stands for the mental operation —whatever its character— that relates the two and registers the discrepancy between them. This operation is itself a mental event distinct (though not independent) from A and B, and A>B is a higher-order event coordinating these three components (Langacker 1987: 101).

In the linguistic literature on comparison as a cognitive phenomenon, authors such as Valin (1952), Joly (1967), Doherty (1970), Seuren (1978) and Stassen (1984, 1985), among others, all conceive the cognitive structure of comparisons in the form of a *spatial configuration* or a *spatial relation*, in which the distance between two elements is measured and ordered (Kennedy 2005, Beck 2011).

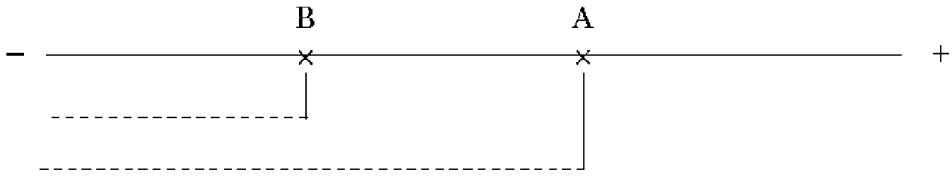

Figure 1

Diagram graphically picturing 'A is bigger than B' (Stassen 1985: 263)

Stassen (1985) claims that the property with respect to which the comparison is made, the parameter or base of the comparison, is pictured as an axis (*spatial representation*) and it is marked for positive-negative polarity (*scalarity*); the two compared

objects are juxtaposed and their positions define extents, with the object that has the higher degree of the quality in question placed on the positive side of the parameter and thus containing the extent of the other object (*asymmetry of the objects*).

2.2. Language and space

There are also empirical findings from the field of developmental neuropsychology that indirectly support the conception of comparisons as spatial relations. The works by Landau & Zukowski (2003), Philips et al. (2004), Landau & Hoffman (2005) and Laing & Jarrold (2007) present data in favour of a relationship between comparative structures and spatial cognition by analysing the linguistic development of English children with Williams syndrome (WS) as compared to regularly developing children. WS was thought to be a rare genetic disorder that gives rise to severe non-linguistic spatial deficits together with relatively spared language, but, according to Philips et al. (2004), individuals with WS do actually have specific difficulties in spatial language. In particular, the experiments run by Philips et al. (2004) show that impaired spatial cognition constrains spatial language.

> It may be that spatial difficulties in Williams syndrome interact in a more fundamental way with the 'on-line' comprehension of spoken descriptions of space (cf. Hayward and Tarr 1995; Landau and Jackendoff 1993; Talmy 1983). In particular, it is possible that individuals with Williams syndrome have difficulty in constructing spatial 'mental models' of verbal descriptions of space (cf. Johnson-Laird 1983). (Philips et al. 2004: 97)

In these experiments, the participants were assigned the so-called 'Test For Receptive Understanding of Spatial Terms' (TRUST),[3] which included items with spatial components —such as *in, on, longer, bigger, above, below, behind, in front,* or *shorter* and *smaller*— and items with apparently non-spatial components —as *reversible passives, X but not Y, not only X but also Y, neither X nor Y, darker than* and *lighter than*. What is interesting for our discussion regarding the results of this test is that individuals with WS made significantly more errors than control subjects not only in questions regarding terms from the spatial blocks, but also in those involving comparative forms which had initially been thought to be non-spatial, such as 'lighter than' and 'darker than'. Philips et al. (2004) noticed that individuals with WS seem to have problems in comprehending comparative adjectives regardless of whether they are obviously spatial in nature or not. These authors conclude that the comprehension of all sorts of comparatives might thus require 'the creation of an on-line internal spatial representation', i.e., the comprehension of comparative terms appears to involve relational reasoning based upon a spatial mental model of the comparison.

In sum, both from the fields of linguistics and neuropsychology, it has been argued that the cognitive representation of inequality comparison (the association that

[3] The test designed by Philips and his colleagues is based on the Test for Reception of Grammar (TROG, Bishop 1983): on each item of the test the participant is shown four pictures depicting similar scenes, and is simply asked to point to the one that corresponded to the word, phrase or sentence read by the examiner (Philips et al. 2004).

takes place between two elements which stand in an asymmetrical relation) is conceived as a spatial relation. In the following sections, we will see that these primitives of comparison are still transparently represented (to different extents) in comparative structures crosslinguistically. With this purpose, in the next section I will summarise the typology of comparative structures proposed by Stassen. On that basis, I will also analyse several universal characteristics and variant features of these constructions.

3. The typology of inequality comparatives

In this section I will summarize the cross-linguistic typology of comparatives of inequality developed by Stassen (1984, 1985). The typology established by this author is defined according to the relation holding between the constituents that form inequality comparative constructions. The typological patterns defined by Stassen (1985) are given in (4):[4]

(4) 1) Comparatives with *fixed* case, in which the case of the standard NP is fixed regardless of the case of the comparee NP. There are two subgroups within this division:

a) Languages with *direct-object comparatives*, which express comparison by means of a transitive verb that has the general meaning of 'to surpass' or 'to exceed', plus a direct object. An example of this in English could be 'Jim exceeds Joe in tallness'.[5]
b) Languages with *adverbial comparatives*, with the standard NP represented as an Adverbial Phrase. This group reflects a clearly spatial interpretation of the comparative relation, and three further divisions can be made based upon the particular locational relation established between the comparee and the standard of comparison.

— Allative, goal-oriented, spatial notion: 'Jim is tall to Joe'.
— Separative spatial notion: 'Jim is tall from Joe'.
— Locative spatial notion: 'Jim is tall on Joe'.

2) Comparatives with *derived* case, in which the case of the comparee and that of the standard depend on their syntactic position. There are two subgroups within this division:

a) Languages with *conjoined comparatives* (structurally independent clauses), such as 'Jim and Joe, Joe is tall'.
b) Languages with *particle comparatives*, in which a specific structure is used only for expressing comparison.

Languages that belong to this last group do not form a homogeneous class. This is due to two facts: (i) the comparative particle they employ can be of a different origin and categorial status; and (ii) the languages that belong to this group —like Al-

[4] Stassen's analysis is based on adjectival predicative inequality comparatives.
[5] English counterparts of the examples that would form the typology proposed by Stassen can be found in Parra-Guinaldo (2011: 145).

banian, English, Spanish, Finnish, Hungarian, Ilocano, Javanese, Malagasy, Sranan, Toba Batak, most European languages and Basque (Kennedy 2005)—, are typologically and genetically diverse. This strategy is illustrated in English examples such as 'Jon is taller than Ane', or Spanish examples such as 'Jon es más alto que Ane'.

3.1. Languages with comparative particles: grammaticalization paths

As Chierchia & McConnell-Ginet (1990) acknowledged, the words and constructions used to speak about space and spatial relations tend to be *recycled* to speak of more abstract domains in language after language. In the domain of comparative phenomena, and excluding constructions with a comparative particle, the majority of comparatives of inequality found around the world lack a separate comparative construction, but make use of already existing non-comparative structures, which are recycled and used to convey differences in gradable properties or quantifiable amounts (Stassen 1984, Breivik 1994, Parra-Guinaldo 2011). This is apparently what happens with classes (1.a), (1.b) and (2.a) in the typology proposed by Stassen that I have summarized in (4). In this regard, Seuren (1984) drew attention to the semantic transparency of the comparative structures of these three typological groups as contrasted with those other languages which employ constructions with a comparative particle —group (2.b) in (4)—. However, a closer view to languages that belong to this last group suggests that comparatives in these languages also appear to have originated from other type of (non-comparative) constructions which have later suffered a grammaticalization process (Small 1923, Stassen 1985, Breivik 1994, Heine & Kuteva 2002, and Parra-Guinaldo 2011). Thus, in many cases they seem to originate from semantically more transparent, paratactic constructions, which later develop into non-transparent, comparative-specific ones by recycling some of the original abstract linguistic elements involved. As we will see below, we find interesting commonalities among languages regarding this question; for example, the elements that have been recycled and grammaticalized to express comparison in the cases of English, Spanish and Basque seem to be very similar.

3.1.1. Comparative elements with a temporal succession meaning

Small (1923) studies the case of English comparatives, and proposes that the starting point of comparatives in this language could be a paratactic structure like 'This mountain is higher; *then* that hill is (high)'.

Under this author's proposal, the English standard marker *then* could have carried over a blending of the notion of temporal succession with the abstract notion of contrast, which would then have given rise to the form *than*. A similar case is found in Basque: Rebuschi (2008), based on the Basque data collected by Villasante (1976), analyses the diachrony of the morpheme *-ago* and observes that this comparative marker first adjoined to nominalised verbs, yielding complex verbal forms that would probably have a future sense, as in (5).

(5) Azken eguna hurbiltzen*ago* (Axular 1643: 127, in Villasante 1976: 132)
last day approach.nom.more
'The last day (is) getting closer'

-ago would then suffix to *gutxi* 'little, few' and *gehi* 'much, many' to form the complex comparative markers *gehiago* (literally 'plus more') and *gutiago/gutxiago* ('fewer'). Rebuschi mentions that the frequency of use of nominalised verbs + *-ago* fell rapidly at a later stage, after this strategy extended to nouns, adjectives and adverbs to form the types of comparatives we use nowadays.

3.1.2. Comparative elements with an adversative or contrastive meaning

Small (1923) and Stassen (1985) defend that the elements that constitute comparatives of inequality can also be formed from expressions with an underlying negative or adversative sense. I would propose that one such case could be the Basque standard of comparison *baino*, which can have a clear adversative meaning ('but'), as (6) shows:

(6) Hori ez da berria, zaharra *baino*
that not is new old but
'That's not new, but old.'

In addition to *baino*, Basque also uses the expression *X-genitive* + *aldean* ('at the side of X') in inequality comparison.[6] Together with its comparative meaning (7), this complex expression can also denote a difference or a contrast as in example (8a), a locative meaning ('next to', 'area' or 'around') as in (8b), or even a temporal meaning ('around') as in (8c).

(7) Langabezia tasa %10ean da; hirugarren hiruhilekoaren *aldean*
unemployment rate 10%.in is third trimester.gen at.the.side.of
%1,2 puntu gehiago
1,2% point more
'The unemployment rate is in 10%; 1.2% points more than in the third trimester'

(8) a. *Alde* handia dago batetik bestera
space big is one.from other.to
'There is a big difference from one to the other'
b. Bermeo *aldeko* hizkera
Bermeo area.loc.gen speech
'The speech of the area around Bermeo'
c. Bostak *aldera* etorriko da gaur
five around come.fut aux today
'((S)he) will come around five today'

A similar case is that of the Spanish standard marker *que* which, in addition to its function in comparative sentences, can also be employed to express contrast, as the following example illustrates.

(9) Yo *que* tú… 'If I were you' (from RAE 2005)

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[6] I would like to add that in addition to *baino*, traditional grammars of Basque also exemplify the use of another adversative marker (*baizen*) as the standard marker in inequality comparatives, mainly in old Biscayan texts. For instance: "Semea *baizen* aita Eternoa nagusiago da?" 'The Eternal father is higher *than* the son' (Catecismo de Anzuola, 3; in Euskaltzaindia 1999: 391).

3.1.3. Comparative elements with a locative meaning

As mentioned before, the Basque standard marker *X-genitive aldean* ('at the side of X'), can have a locative meaning. In this regard it is similar to the second standard marker available in Spanish: the preposition *de* ('of'). This preposition, which can also have a locative meaning, is used to introduce the so-called *relative standards of comparison*; that is, standards of comparison with a relative clause (Ordóñez 1994), as exemplified in (10). From the point of view of the classification of inequality comparatives given in (4), this type of comparatives can thus be considered to be half-way between the adverbial types of comparatives in (1.b) and the so-called particle comparatives in (2.b).

(10) Sabe más *de* lo que aparenta
knows more than that which pretends
'((S)he) knows more than ((s)he) pretends'

A quick survey to the type of expressions that can be used to formulate comparisons shows that some of the languages of the class (2.b) in (4) can make use of more comparative constructions than particle comparative structures to express inequality comparison. An instance of this would be the case of Basque, in which at least two options seem to be available: (i) the particle comparative structure with derived-case, illustrated in (11a-b); and (ii) an adverbial comparative structure with fixed case, as in (11c), which would correspond to type (1.b) in the typology in (4) and whose marker has the range of interpretations discussed above for examples (7) and (8a-c):

(11) a. Jon Ane *baino* altu*ago*a da.
Jon Ane than tall.more.d is
'Jon is taller than Ane.'
b. Mutilek oraindik abantaila *gehiago* dituzte nesken *aldean*.
boys still advantage more have girls.G next.to
'Boys still have more advantages than girls.'
c. Nire *aldean* gaztea zara zu.
my side young are you
'You are young compared to me.'

In sum, we observe that even in languages like English, Spanish and Basque (which make use of a specific comparative structure with a comparative particle) the elements used in comparatives may have originated from elements with a spatio-temporal meaning, which have been later been recycled and grammaticalized so as to express comparison. The elements involved can also have an adversative essence, probably due to the asymmetric relation they have to convey between the entities being compared or contrasted. These strategies seem to reflect the way in which comparison is represented from a cognitive point of view: as an asymmetrical spatial relation. Based on our brief survey, it appears plausible to infer that even languages which nowadays use a special type of comparative structure (those in (2.b)) might have used structures which were not comparative in their origin and which were later recycled and subject to grammaticalization, yielding the constructions we find in many languages nowadays. Interestingly, the origin and paths of these grammaticalization

processes seem to be quite similar, at least in the case of the languages we have discussed here. From what we have seen, the structures initially employed as well as the grammaticalization paths they exhibit could well be linked to the semantic properties of comparative expressions as well as to the cognitive representation of comparison.

4. The syntactic representation of inequality comparatives

In this chapter, I will briefly introduce the main properties of inequality comparative structures in the three languages under discussion in this paper. I will further present three syntactic analyses of inequality comparative structures that have been influential on the literature on this topic: the ones proposed by Brucart (2003) and Gallego (2013) for Spanish and the one defended by Goenaga (2012) for Basque. Based on this discussion, I will present a new tentative proposal for Basque inequality comparatives in Section 5, which captures the properties of inequality comparatives that we introduce in this section.

4.1. Basic properties of inequality comparatives in English, Spanish and Basque

4.1.1. Atomic and complex comparative markers and their distribution

One difference exhibited by languages that have a specific structure to express comparison has to do with whether they use simple or complex comparative markers. If we take a look at English, we observe that this language has two types of comparative markers: (i) an atomic, bound morpheme, *-er*; and (ii) the complex markers *more* and *less*. Bresnan (1973, based on Selkirk 1970), proposed that the inequality comparative marker *more* is not *an atomic expression,* but rather the comparative form of *much* and *many.* More specifically, she contends that *more* derives synchronically from *-er much* or *-er many*, and that *less* derives from *-er little.*[7]

A similar proposal is defended for Basque amount comparatives by Goenaga (2012). Basque has both simple and complex comparative markers. With regard to the simple form, the bound morpheme *-ago* is similar to English *-er* in being a simple form, but *-ago* has a different distribution than its English counterpart. This simple comparative morpheme (*-ago*) is employed in degree comparatives and it always surfaces attached to the gradable base, for instance $altu_{\text{tall}}$-*ago* 'tall-er'. In amount comparatives, however, the complex counterparts of the comparative morpheme (*gehi* + *ago* and *gutxi* + *ago*) are necessarily employed: $liburu_{\text{book}}$ $gehi_{\text{many}}$ + ago_{more} 'more books' or $liburu_{\text{book}}$ $gutxi_{\text{little}}$ + ago_{more} 'fewer books'. With regard to these complex forms, Goenaga (2012) argues that *gehiago* is formed by attaching the comparative morpheme *-ago* to the morpheme *gehi*, which under his analysis would be a bound quantitative lexeme equivalent to *asko* 'much, many'; *gutxiago,* in turn, would be the result of attaching *-ago* to the quantifier *gutxi* 'little, few'. The analysis pro-

[7] The use of the atomic or the complex comparative marker with adjectives in this language depends on a phonological constraint. *-er* may attach to monosyllabic adjectives and to a limited class of possibly disyllabic adjectives with a very light second syllable (Pesetsky 1985), while *more* is used with the remaining adjectives.

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posed by Goenaga for the Basque complex comparative markers is thus similar to the analysis defended by Bresnan's 1973 for English *more* and *less*.

With respect to Spanish, this language differs from English and Basque in employing only complex comparative markers.[8] The comparative marker *más* ('more') is employed both in superiority degree and amount comparatives. In inferiority comparatives, *menos* ('less' or 'fewer') can be used to express both degree and amount inequality. Brucart (2003) relates the comparative marker *más* to the homophonic commutative additive operator *más* and the comparative marker *menos* to the subtractive operator *menos.*

If these hypotheses are correct, it would not be surprising if English and Basque comparatives shared some properties that distinguished them from their Spanish counterparts, since these two languages can employ atomic, bound comparative makers, as well as complex unbound ones, while Spanish only makes use of unbound atomic markers.

Table 3

Comparative markers in English, Basque and Spanish and their distribution

	Degree comparatives:		**Amount comparatives:**	
	atomic marker	**complex marker**	**atomic marker**	**complex marker**
English	taller	more/less intelligent		more/fewer books
Basque	altuago			liburu gehiago/gutxiago
Spanish		más/menos alto		más/menos libros

In Table 3 I have schematized the different distribution patterns and the type of comparative markers associated to amount and degree inequality comparatives in the three languages under analysis.

4.1.2. Linearization of components

In contrast with languages like English, in which the linear order of the clause is fairly rigid, languages like Spanish or Basque display a very flexible word order, with the linearization of the clausal elements depending largely on information structure (Contreras 1976, for Spanish; de Rijk 1969 and Ortiz de Urbina 1989 for Basque, among others).

Regarding the linearization of the components of inequality comparatives, these three languages present different patterns. In Basque, the most common linearization of the standard of comparison (coded as the subindex '$_S$' in the examples below) is to the left of the comparative structure, as shown in (12a). However, as illustrated in (12b), in this language the standards of comparison can move throughout the sen-

[8] With the exception of *mayor* 'larger, bigger', *menor* 'smaller, fewer', *mejor* 'better', *peor* 'worse'. These words have inherited the Latin ending *-ior/-ius* (Ordóñez 1994).

tence quite freely. This is not the case of the differential (marked as '$_D$' in the following examples), which must always be adjacent to the comparative marker *gehiago,* as shown in (12c-d).

(12) a. Nik [zuk baino]$_S$ [bi litro ardo]$_D$ gehiago edan ditut.
[from Goenaga 2012: 143].
me.E you.E than two litre wine more drink aux
'I have drunk two litres of wine more [than you].'
b. Nik t$_S$ [bi litro ardo]$_D$ gehiago edan ditut [zuk baino]$_S$
me.E two litre wine more drink aux you.E than
c. *Nik [zuk baino]$_S$ t$_D$ gehiago edan ditut [bi litro ardo]$_D$.
me.E you.E than more drink aux two litre wine
d. *Nik [bi litro ardo]$_D$ [zuk baino]$_S$ t$_D$ gehiago edan ditut.
me.E two litre wine you.E than more drink aux

In contrast with Basque, in English and Spanish the linear order between the base with the comparative marker and the standard of comparison is fixed: the comparative marker precedes the standard of comparison: 'I have drunk two litres of wine *more* [than you]$_S$' / 'He bebido dos litros de vino *más* [que tú]$_S$'. The only available alternative order in these languages is that found in amount comparatives within the cluster formed by the differential, the base and the comparative marker. In Table 4 I present the possible linearizations that these three languages license within this cluster. Notice that the range of linear orders available crucially depends on the type of inequality comparative involved, amount or degree. This will be important later on when I justify the need for two different analyses for amount and degree comparatives in Basque.

Table 4

Linear order of the differential: Spanish, English and Basque patterns
(Q: quantifier; M: comparative marker; N: noun; A: adjective)[9]

	English	**Spanish**	**Basque**[9]
Amount N-M	* books more	* libros más	liburu gahiago
Amount M-N	more books	más libros	* gehiago liburu
Amount M-Q-N	* more many books	* más muchos libros	* gehiago askoz liburu
Amount Q-M-N	many more books	muchos más libros	* askoz gehiago liburu
Amount Q-N-M	many books more	muchos libros más	askoz liburu gehiago
Amount Q-M-N	two more days	* dos más días	* bi gehiago egun
Amount Q-N-M	two days more	dos días más	bi egun gehiago
Degree Q-N-M-A	three times more intelligent	tres veces más inteligente	hiru bider azkarragoa
Degree Q-M-N-A	*three more times intelligent	*tres más veces inteligente	* hiru azkarragoa bider

[9] Translation of the Basque examples: askoz$_{many}$ liburu$_{book}$ gehi+ago$_{more}$, bi$_{two}$ egun$_{day}$ gehi+ago$_{more}$, hiru$_{three}$ bider$_{times}$ azkarr+agoa$_{smarter}$.

Another important property displayed by these structures is that the three languages exhibit some restrictions in the definiteness of the differential.

(13) a. El festival se alargará [(*los) dos días]$_D$ más de los cuatro previstos
the festival be-extended.fut the two days more than the four expected
b. Jaialdia aurrekusitako lau egunak baino [bi egun(*ak)]$_D$ gehiago
festival expected four days than two days(d) more
luzatuko da.
be-extended.fut aux
'The festival will be extended (*the) two days more than the four expected.'
c. The festival will be extended [(*the) two days]$_D$ more than the four expected.

As exemplified in (13), comparative sentences in Spanish, Basque and English do not seem to admit a definite determiner in the cluster formed by the differential, the base and the comparative marker. I will discuss this question with more detail in Section 4.2.1.

4.1.3. Omission of components

The differential in inequality comparatives refers to the extent to which an element A is different from an element B regarding a property X. The specific quantity or degree of this extent can be overtly expressed, as in (14a), or can be omitted and left unspecified, as in (14b). This is a property shared, at least, by the three languages considered here.

(14) a. Las conversaciones durarán [4 días]$_D$ más de [lo previsto]$_S$
the conversations last.fut 4 days more than the expected
'The conversations will last 4 days more than expected.'
b. Las conversaciones durarán [Ø]$_D$ más de [lo previsto]$_S$
the conversations last.fut more than the expected
'The conversations will last more than expected.'

The possibility of overtly expressing the differential or leaving it unexpressed is similar to what happens with the standard of comparison in Spanish, which can either be overt or can be recovered from the previous discourse when elided (Brucart 2003). The possibility of omitting the differential is a property common to the three languages under analysis, as illustrated in (15a-c). Notice that although the standard of comparison is omitted in these examples, it can be retrieved from the linguistic information previously provided by Speaker 1; the differential, in turn, is an undefined amount which the speaker does not make explicit and needs not be provided specifically in the discourse.

(15) Speaker 1: Even if I've always loved listening to music, since I started that cinema class, I have more DVSs than CDs at home.

Speaker 2:
a. I personally own more CDs. (English)
b. Yo en casa tengo más CDs. (Spanish)
I at home have more CDs

c. Nik etxean CD gehiago dauzkat. (Basque)
I.E home.loc CD more have
'I have more CDs at home'

4.1.4. The nature and complexity of the standard of comparison and comparative ellipsis

There is no consensus regarding the complexity of the standard of comparison headed by the standard marker, i.e. *than* in English or *baino* in Basque. Some authors argue for a clausal (CP) complement of this standard marker, while others defend that it is a phrasal (a QP, DP or NP) complement. Recent work on this topic assumes that there is cross-linguistic variation (and even variation within the same language) regarding the complexity of the standard of comparison. Thus, while Italian, Hungarian and Russian seem to display variation in the complexity of the standard constituent —the standard of comparison can either be a clause (CP) or a phrase (Bácskai-Atkári 2014)— languages like Japanese and Mandarin only seem to allow for nominal standards (see Beck et al. 2004 and Sudo 2015 for Japanese; Fu 1978 and Xiang 2003 for Mandarin). The same would be true for Turkish (Hofstetter 2008) and Hindi-Urdu (Bhatt & Takahashi 2011), for example, which appear to only license standards of comparison involving *than*-phrases, but not *than*-clauses. With regard to English, some authors argue that both types of standards are possible in this language (Heim 1985; Kennedy 1999, a.o), and Brucart (2003) also proposes both phrasal and clausal standards for Spanish.[10] The properties of the standards of comparison in Basque have not yet been analysed in detail. Further study of the properties associated to the phrasal and clausal standards of comparison is necessary in order to explain where the different patterns follow from, and what this divergence is due to.

[10] The standard of comparison in Spanish can be introduced either by *que* or by *de,* as illustrated in (i) below. Structures like the one in (ib), where the standard of comparison is introduced by *de*, are usually referred to as 'relative comparatives' in some analyses (see Ordóñez 1994). Notice that, as the translations illustrate, there is a contrast in the meaning of the examples in (i a-b), which shows that the choice of standard marker plays a fundamental role in the interpretation of the sentence. Furthermore, while both *que* and *de* are possible in (i a-b) (even if the choice of one or the other has consequences in the interpretation) there are other cases where both alternatives are not possible, as illustrated in (ii a-b). Nonetheless, the same basic idea with can also be conveyed with either marker if some structural changes are applied, as in (iii a-b). These paradigms show that an in-depth study of the semantic and syntactic properties of *de* and *que* is extremely necessary in order to offer a complete analysis of inequality comparative structures in Spanish.

(i) a. Comió más *que* un dinosaurio
(I) '((S)he) ate more than a dinosaur (eats)'
(II) '((S)he) ate more other than a dinosaur' (something different in quality)
b. Comió más *de* un dinosaurio. '((S)he) ate more than just one dinosaur.'
(ii) a. *Vendrán más tarde *que* las dos.
b. Vendrán más tarde *de* las dos. 'They will come later than two o'clock.'
(iii) a. Creo que María es más alta *que* Amelia. 'I believe María is taller than Amelia.'
b. Creo que María es más alta *de lo (alta) que es* Amelia. 'I believe María is taller than what Amelia is.'

4.1.5. Semantic analyses of comparatives

In the same way as it is important to look at the cognitive representation of comparison to understand the grammaticalization patterns of the linguistic expressions of comparison in typologically and genetically different languages, in order to be able to derive the syntactic structure of inequality comparatives, it is also indispensable to take into consideration the semantic properties of these structures. A very influential work on the semantics underlying these structures is the analysis on degree comparatives by Kennedy (2010). This analysis relies on the assumption that two sets of degrees are related in comparative sentences, one of which corresponds to the standard of comparison and the other one to the differential. If there is a correlation between the semantic and syntactic structures underlying inequality comparative clauses, we expect to find the expression of these degrees syntactically represented too. While Kennedy's proposal only concerns degree comparatives, the question arises as to whether this hypothesis should be extended to amount comparatives too. In the final section of this paper I will come back to this question, and propose that in inequality comparative structure there is a relation between two sets not only in degree comparatives, but in amount comparatives too. In the following three sections I summarize some of the major proposals in the literature on Spanish and Basque comparatives.

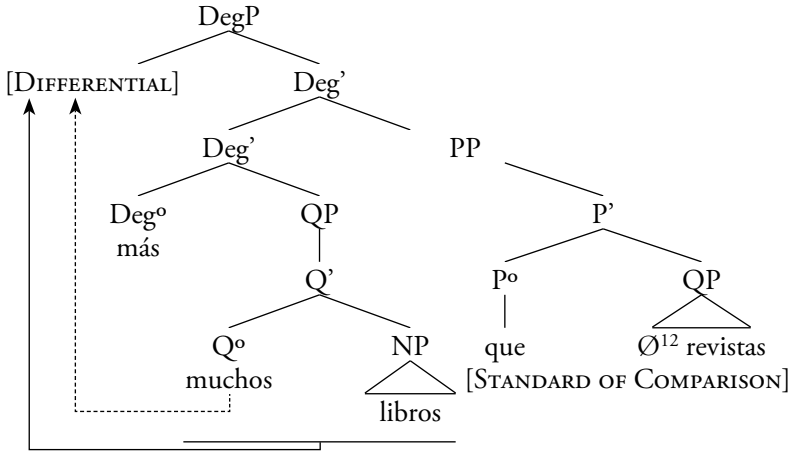
4.2. Previous analyses

4.2.1. Brucart (2003)

One of the most influential analyses of Spanish inequality comparatives is that in Brucart (2003), where he focuses on amount comparative clauses. Under his approach, illustrated by the structure in (16), comparative clauses are analysed as a Degree Phrase (DegP) where the comparative marker *más* corresponds to the degree head (Deg^{o}). He contends that the role of this degree head is that of an additive operator introducing the comparison: *más* selects two internal arguments (two QPs) in a non-commutative or asymmetric way on which it applies the additive (or subtractive) operation. These two arguments or QPs are: (i) a reference point or *standard of comparison*, which is contained within a Prepositional Phrase (PP) headed by the preposition *de* or *que,*[11] and (ii) a figure or differential, expressed by a second QP. In the case of the structure illustrated in (16), the standard of comparison corresponds to 'que revistas', where the quantifier is unspecified and refers to an abstract quantity, and the differential to 'muchos libros'. In the case of (17), an example of a relative comparative, the standard of comparison introduced by the preposition *de* is 'los cuatro previstos', and the differential corresponds to 'dos días'.

[11] With respect to Spanish inequality structures, Brucart argues that the standard marker (either *de* or *que*) is necessary to signal the element that is taken as the base of the additive operation; Brucart thus assigns a semantic role to this element.

(16)



(17) Las conversaciones durarán [dos días]$_D$ más de [los cuatro previstos]$_S$
the conversations last.fut two days more than the four expected
[Lit.] 'the conversations will last two days more than the four expected.'

As illustrated by the structure in (16), the two arguments that the Deg° selects semantically are syntactically expressed by means of a shell structure. More specifically, Brucart proposes that comparative structures involve recursion of the Deg' node, in a way reminiscent of the VP-shells postulated for double object constructions (Larson 1988). The hypothesis that comparative structures involve recursion of Deg' is not new, and it is inspired in Izvorski (1995), who applies this type of shell-structure to English inequality comparisons to account for the periphrastic (*more intelligent*) and the morphological comparison (*happier*) found in this language.

As we mentioned before in section 4.1.3, the differential ('muchos' in 'muchos más libros' from (16), for example) can always be omitted, in which case it is interpreted as an unspecific quantity, as in 'Tiene más libros que tiempo para leerlos' ('(S)he has more books than time for reading them') where the quantity of books is not determined. As we pointed out before, this is similar to what happens with the standard of comparison, which does not need to be overt, and can be recovered from the previous discourse when elided. We have already seen above that the differential and the standard of comparison can also be elided in English and Basque.

Brucart also devotes an important part of his paper to the analysis of some other properties exhibited by the differential marker in Spanish, focusing on two important questions as a way to support the structure he proposes for inequality compara-

[12] This symbol Ø represents either an unspecified quantity or an unspecified degree, depending on the type of comparison considered. Brucart calls it an "empty quantifier" and it can be found either in the position of differential or/and in the standard of comparison, whenever this quantity is left unspecified and is not overtly expressed. It is different from the comparative marker or "additive operator" *más*, as Brucart calls it. This additive operator is similar in essence to the mathematical additive marker 'plus' (+), but the comparative *más* has the important difference that its arguments are subject to an additive operation in a non-commutative or asymmetrical way.

tives: a) the different positions that the differential can occupy, and b) its case properties. Let us consider these two questions next.

Recall that we have noticed above that there was a difference between the linear order exhibited by the differential markers in English and Spanish (see Table 4 and examples (18a-d) below). Brucart derives the freedom in word order displayed by the differential marker in Spanish from a syntactic operation he argues takes place in inequality comparatives in this language: *Differential Raising*. As illustrated in (18a-d) (see also Table 4), in Spanish either the quantifier alone (*muchos* 'many' in (18b)), or the whole QP (*muchos libros* 'many books' in (18c)) that acts as the differential can precede the comparative marker *más.* Brucart derives these facts from the syntactic raising of the differential; that is, from a movement operation of these elements from its original position to the specifier position of the DegP proposed in (16). Brucart further argues that this raising operation depends on the nature of the differential, although he does not enter into the details of this proposal. When the differential does not have an overt quantifier, as in (18a), the NP remains *in situ*; if the differential contains a lexical, overt quantifier, then either the Q^{o} (18b) or the whole QP must raise, as illustrated in (18c) and (18d).

(18) a. [$_{DegP}$ más [$_{QP}$ [$_{NP}$ *libros*]] [$_{PP}$ que [$_{QP}$ los cuatro previstos]]]
'More books than those four expected.'
b. [$_{DegP}$ *Muchos$_i$* [más [$_{QP}$ t$_i$ [$_{NP}$ *libros*]] [$_{PP}$ que [$_{QP}$ los cuatro previstos]]]]
'Many more books than those four expected.'
c. [$_{DegP}$ *Muchos$_i$ libros$_j$* [más [$_{QP}$ t$_i$ [$_{NP}$ t$_j$]] [$_{PP}$ de [$_{QP}$ lo esperado]]]]
'Many books more than expected.'
d. [$_{DegP}$ *Dos días$_i$* [más [$_{QP}$ t$_i$ [$_{PP}$ de [$_{QP}$ los cuatro previstos]]]]
'Two more days than those four expected.'

The fact that the differential not always precedes the degree head would provide evidence that it is not generated in a position preceding this Degree head. The fact that it can surface preceding the Degree head in some cases also shows that there must be another position in the structure to host this element. These two facts are elegantly captured by Brucart's proposal.

Further, as mentioned above, Brucart also analyses case assignment and, in particular, the case assigning properties of the comparative marker and the case exhibited by the differential, as a way to support the structure in (16). Specifically, he argues that the fact that the comparative marker assigns case to the first internal argument (the differential or measure phrase) would provide evidence for his proposal, where the Deg head takes the differential marker as its internal syntactic complement. His argumentation is based on the contrast illustrated by pairs like (19), which he links with a case restriction and defends that it follows from the fact that the comparative marker assigns partitive case to the differential (its internal complement). Since partitive case is incompatible with definite DPs, it immediately explains why the differential cannot be expressed as a DP (but rather as an NP) and why it cannot be preceded by the determiner *las.*

(19) a. Contrataron a las diez personas. (non comparative)
hired DOM the ten people
'(They) hired ten people.'

b. *Contrataron a las diez personas más de las previstas. (comparative)
hired DOM the ten people more than the expected
c. Contrataron (a) diez personas más de las previstas. (comparative)
'(They) hired ten people more than expected.'

Thus, Brucart acknowledges the ungrammaticality triggered by the presence of the definite determiner in inequality comparatives in Spanish and provides an explanation based on the case assigning properties of the Degree head. The hypothesis I want to put forth is that the operation causing the contrast in (19a-c) is not limited to Spanish comparatives, but is rather a more general semantic constraint. Specifically, I argue that the ungrammaticality triggered by the presence of the definite determiner in these cases is just an instance of the constraint proposed by Izvorski (1995) I have previously explained above. Izvorski argues that the gradable or quantifiable element (the base of the comparison) has to contain a free degree or an amount variable. In other words, she contends that in adjectival and adverbial comparatives the comparative base can only be a bare AP or AdvP like *6 feet tall* (but not '**the* six feet tall'), for example. As the reader will remember, in the discussion concerning examples (13a-c), repeated below in (20a-c) for convenience, I have shown that the restriction on the definiteness of the differential is operative not only in Spanish but also in English and Basque. It does not seem to be a language particular constraint but rather a general (cross-linguistic) constraint on comparative clauses.

(20) a. El festival se alargará [(*los) dos días]$_D$ más de los cuatro
the festival be-extended.fut the two days more than the four
previstos
expected
b. Jaialdia aurrekusitako lau egunak baino [bi egun(*ak)]$_D$ gehiago
festival expected four days than two days(d) more
luzatuko da.
be-extended.fut aux
'The festival will be extended (*the) two days more than the four expected.'
c. The festival will be extended [(*the) two days]$_D$ more than the four expected.

Summarizing, the analysis by Brucart nicely captures the close relation between the comparative marker and two basic components of inequality comparatives: the differential and the standard of comparison, which are semantically selected by the comparative head, projecting these two arguments syntactically in a recursive shell-structure. Brucart also gives an elegant account of the diverse linear orders that the cluster formed by the differential, the base of the comparison and the comparative marker can exhibit in Spanish. Brucart's proposal will play a fundamental role in the hypothesis I will develop in Section 5, where I present an analysis of degree and amount inequality comparatives in Basque.

4.2.2. Gallego (2013)

In a recent paper on Spanish comparative clauses, Gallego (2013) puts special emphasis on the semantic relation that holds between the differential and the reference or standard of comparison, which he argues is parallel to that between the Figure and the Ground (see also Brucart 2003 and Fábregas & Pérez 2013 as well as Bácskai-Atkári 2014 for a related discussion).

The Figure-Ground alignment was introduced into cognitive linguistics by Talmy (1972, 1983, 2000), who used this relation to account for the semantics underlying spatial relations (relations like those expressed by prepositions like *on, behind, near*, etc.). According to this author, in natural languages all spatial relations (those conveying location and motion) are expressed by specifying the position of one object, referred to as the *Figure*, relative to another object, conceived as a *Ground*. The Figure and the Ground are thus in an asymmetrical relation. In Table 5 I have gathered those properties of objects that Talmy argues favour a Figure or a Ground construal, in the narrower domain of spatial relations (based on Talmy 1983: 230-231; see also Talmy 2000: 315-316).

Table 5

Properties of objects in a Figure-Ground relation

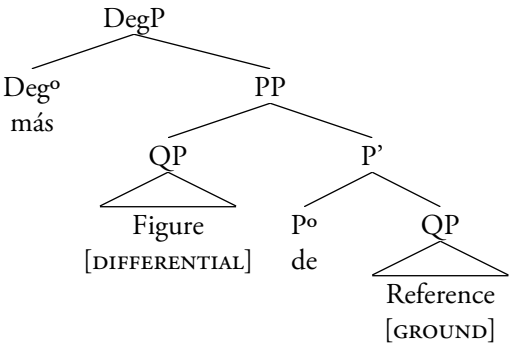
Figure	Ground
location less known	location more known
smaller	larger
more mobile	more stationary
structurally simpler	structurally more complex
more salient	more backgrounded
more recently in awareness	earlier on scene/in memory

The *Figure* is a moving or conceptually moveable object whose site, path, or orientation is conceived as a variable, the particular value of which is the salient issue. The *Ground*, in contrast, is a reference object (itself having a stationary setting within a reference frame) with respect to which the figure's site, path, or orientation is defined (Talmy 1972, 1983, 2000).

Under the analysis proposed by Gallego (2013) the relation that holds between the two terms that are compared in a comparative construction can be conceived as a Figure-Ground relation (see also other references given above for the same hypothesis). The standard marker (*than, que-de, baino*) fulfills different roles: it introduces the asymmetric relation between the two arguments selected by the comparative marker, and it also defines which argument refers to the Ground (i.e. it would be the argument in the position of complement of the standard marker); finally, it also determines which one corresponds to the Figure (the differential), which is located in the specifier position of the PP headed by this standard marker. Following the characterization of Figure and Ground provided by Talmy and summarized in Table 5 above, the standard or reference of the comparison would be a basic given element to which something new, the differential, is added (Brucart 2003).

On this ground, Gallego offers an analysis of Spanish inequality comparatives that is different from that proposed by Brucart (2003). Under the hypothesis that there is a parallelism between the relations expressed by inequality comparatives and those expressed by the Figure/Ground relation, the standard marker has the grammatical category of a path or trajectory preposition. Unlike Brucart's analysis, which attributes the comparative meaning to the comparative morpheme, Gallego contends that the comparative meaning of the construction comes from the standard marker (*que* or *de*), the element that under this analysis defines the Figure-Ground relation between the differential and the standard. The structure in (21) summarizes the analysis proposed by Gallego (2013: 234).

(21)



Although the analysis advocated by Gallego seems to capture in an elegant and simple way the relevance that spatial relations (and in particular, the Figure/Ground relation) have been argued to play in comparative structures cross-linguistically, as I will show next, it faces some empirical problems.

First, as illustrated in (15) with respect to the omission of components of inequality comparative clauses, it is possible to have an unspecified standard of comparison and still maintain the comparative sense of the sentence. In this case, it is the presence of the comparative marker that helps interpreting the structures as an inequality comparison when the standard marker is not overtly expressed (recall that if the standard that acts as reference in the comparison is not expressed, it is recovered from the context). While this fact raised no problem within the analysis defended by Brucart (where the comparative meaning of the structure comes from the comparative morpheme and not from the standard marker), it becomes a problem under the analysis defended by Gallego.[13] Second, standard markers (at least in languages like English, Spanish and Basque) can be used independently from comparative structures, with a contrastive effect but without comparative sense.[14] This was shown be-

[13] Especially interesting in this regard is the fact that the *Diccionario de la Lengua Española* (2001) by the Real Academia Española (RAE) offers 27 entries for the preposition *de* and only one of them has a comparative meaning. Therefore, the Spanish preposition *de* seems to have numerous functions among which expressing comparison is just one of them, but this element does not appear to be specialized in the expression of comparison.

[14] Gallego (2013) analyses comparatives with *de* as standard marker; nevertheless, as mentioned above, Spanish has both standards with this preposition as well as with *que*.

fore for Basque *baino* (example (6), repeated below (22a)), and for Spanish *que* (example (9), repeated below as (22b)). An English example is given in (22c).

(22) a. Hori ez da berria, zaharra baino (Basque)
that not is new old but
'That's not new, but old.'
b. Yo que tú… 'If I were you' (Spanish)
c. Daniel Craig tries something other than a Martini (English)

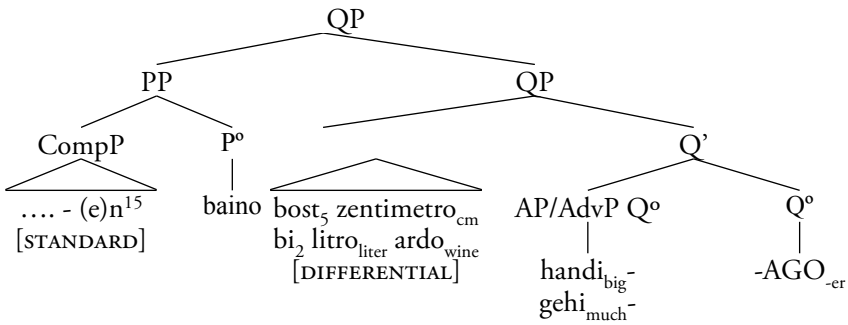
Both of these arguments hold for the three languages examined here. This leads us to conclude that although the standard markers (English *than*, Basque *baino* or Spanish *de* and *que*) contribute to the meaning expressed by the comparative clause, it cannot by itself be the only element on which the comparative meaning is built on, at least in the languages under discussion. I will come back to this question in Section 5, when I develop my own analysis of Basque inequality comparatives. While I will differ from Gallego's analysis in this question, I will hold to the hypothesis that the Figure-Ground relation plays a role in inequality comparatives cross-linguistically.

4.2.3. Goenaga (2012): Basque inequality comparatives

After describing Brucart's and Gallego's proposal for Spanish inequality comparatives, and discussing some of their advantages and problems, let us now turn to the analysis put forth by Goenaga (2012) for Basque inequality comparatives, which we have summarized in (23). It should be kept in mind that his structure is designed to accommodate both degree and amount inequality comparatives.

Under this approach, the comparative marker *-ago* is analysed as a quantifier head (Qº). The standard of comparison is expressed by a postpositional phrase, headed by the postposition *baino.* This postposition can select a relative clause as its complement. Following the head final order characteristic of this language, *baino* surfaces to the left of its clausal complement: [$_{PP}$ [$_{RC}$] *baino*] (literally, 'CP-than').

(23)



[15] Translation of the Basque examples in (23): *-(e)n:* relative marker; *bost zentimetro:* 'five centimetres'; *bi litro ardo:* [Lit] 'two litre wine'; *handi:* 'big'; *gehi* + *ago:* 'more' (quantitative comparisons).

In comparatives of inequality, the standard of comparison —the PP headed by *baino* in (23)— can surface in different positions of the clause, as exemplified in (12a-b) above, repeated below as (24a-b) for convenience. Note also that the QP expressing the measure of the differential always has to appear in the same place, attached to the comparative marker *gehiago* or to the adjective.

(24) a. Nik [zuk baino]$_S$ [bi litro ardo]$_D$ gehiago edan ditut.
me.E you.E than two litre wine more drink aux
'I have drunk two litres of wine more [than you].'
b. Nik t$_S$ [bi litro ardo]$_D$ gehiago edan ditut [zuk baino]$_S$
me.E two litre wine more drink aux you.E than

With respect to the differential, recall that Brucart derives the different word orders exhibited in Spanish from a raising analysis of the differential to the specifier of DegP. Based on the linear orders available in Basque (see Table 4 above), Goenaga argues that the operation of differential raising does not take place in Basque; that is, the quantifier does not move to a higher position in this language. The different behaviour exhibited by Spanish and Basque quantifiers leads Goenaga to conclude that the nature of Basque quantifiers involved in this type of construction must be different from the Spanish ones.[16]

Goenaga (2012) further proposes that the differential or measure phrase, the base of the comparison (expressed by an adjective, adverb or noun phrase) and the comparative marker *-ago* ("bi litro ardo gehiago" in (24) or "bost zentimetro handiago" in (23)) form a single constituent. Evidence for this analysis comes from the following facts. First, the measure phrase must always immediately precede the base of comparison in Basque (see examples (12) in section 4.1.2). Second, there are semantic selectional restrictions applying between the differential and the base of the comparison. More specifically, the base of the comparison places a semantic constraint on the element that is selected as measure phrase, which has to be of the same system of measurement. This is illustrated in (25). Words like *luze* 'long' and *metro* 'metre' express the measure of the length of an atomic objet; *litro* 'litre', in contrast, is a measure of volume. This explains why *Bi litro luzeago* in (25a) is not possible, since *litres* and *length* belong to different systems of measurement, whereas *Bi metro luzeago* in (25b) and its English counterpart are legitimate, since both elements are related to length. This can be accounted for if the differential and the base of comparison form a unit and the base restricts the differential.

(25) a. *Bi litro luzeago '*Two litres longer'
b. Bi metro luzeago 'Two metres longer'

[16] Goenaga might be right in assuming that there is no differential raising in Basque, but further analysis should be done to determine whether this conclusion is correct or whether there is also an operation involving differential raising in Basque, but this does not translate into a difference in word order because it gets masked by additional operations, for instance. Further research on this topic seems necessary to clarify the differences exhibited by English, Spanish and Basque with respect to the linear order of the components of inequality comparatives.

Summarizing, Goenaga adapts Brucart's (2003) structure for Spanish and modifies it to accommodate Basque inequality comparatives. The major difference is that Goenaga places the standard of comparison to the left of the structure, paralleling the standard linearization found in this language. This is also what we expect in a head final language like Basque, where arguments precede their heads. He further explains the fixed linear order exhibited by the cluster formed by the differential, the base of comparison and the comparative marker (see Table 4) by positing that the operation of differential raising is not operative in Basque, as opposed to Spanish, and he contends that this might be evidence of the different properties of quantifiers in Spanish as compared to Basque.

This proposal offered by Goenaga is very attractive for economy reasons, since the same basic syntactic representation is offered for both amount and degree comparatives in Basque (see 23).

5. Inequality comparatives revisited

In this section I will first go over the major properties of inequality comparatives that need to be accounted for if we want to develop an explanatory theory of inequality comparatives, and will then propose an analysis to capture them. My analysis includes ideas from previous accounts, but also differs from them in some crucial points.

The structure of this section goes as follows. First, building on Brucart's (2003) and Gallego's (2013) proposals as well as on the cognitive substrates of inequality comparison discussed in Section 2, I will deal with the origin of the comparative sense in the linguistic expression of comparison in Section 5.1. Then, in Section 5.2 I present several points of divergence between amount and degree comparison, and discuss their relevance for the syntactic representation of these structures. And finally, in Section 5.3 I propose an alternative analysis for Basque inequality comparatives that takes into consideration the contributions by Brucart, Gallego and Goenaga, and overcomes some of the difficulties that these analyses presented. My proposal introduces two novelties. First, the comparative sense is argued to emerge from a combination of two factors, rather than from a single element as discussed in previous analyses (the comparative marker in Brucart's analysis, and the standard marker in Gallego's proposal). And second, in contrast with analyses that propose a single structure for both amount and degree inequality comparatives, I argue that two distinct syntactic representations are necessary to capture the different properties that these two types of comparison present.

5.1. The comparative sense

There are conflicting views regarding the element that introduces the comparative sense in inequality comparative structures.

One the one hand, as commented above, authors like Brucart confide the comparative sense to the comparative marker (*más*) and, more specifically, to the function attributed to this element: it selects two elements, one of which has the role of establishing the reference of the comparison (the standard) while the other reflects the extent of the difference between the two objects compared (the differential).

Under Gallego's analysis, on the other hand, the comparative sense is introduced by the standard marker (*que/de*), which is interpreted as a path or trajectory preposition and marks the asymmetry between the elements that are being compared.

Given this conflicting view, the question arises as to which element does really provide the comparative meaning to these structures. My analysis will differ from both Gallego's and Brucart's proposals in this regard. What I would like to propose is that in languages with a comparative particle (group (2.b) in the typology of Stassen summarized in (4)) the combination of both markers (the comparative marker and the standard of comparison) is necessary to convey the meaning expressed by inequality comparison. In other words, while Brucart's and Gallego's analyses considered that the comparative sense arises from a single element (either the comparative marker or the standard marker), I contend that the comparative sense is built from a combination of two different aspects present in the comparative meaning: a) the existence of an asymmetry or contrast, inherent to the nature of inequality comparatives (introduced by the standard marker); and b) the expression of a scalar property, which is taken as the base on which to express the comparison (this is introduced by the comparative marker). I explain my proposal regarding this question in some detail next.

Let us start with the role of the standard marker (*than*, *que-de, baino*). This element has two main functions: (a) it registers an asymmetry (a contrast) or discrepancy between the objects that are being compared, and (b) the standard marker signals the element that is going to act as reference of the comparison by taking this element in its complement position. In the spirit of Gallego's account, I will assume that the standard marker can perform these functions because it introduces the spatial Figure/Ground relation. These two functions (marking an asymmetry or contrast, and introducing the Figure/Ground relation) appear to be directly related to the cognitive representation of inequality comparison. This representation is conceived as an asymmetric relation between two contrasting elements, which relates to the adversative meaning conveyed by standard markers in the languages under analysis, and to the expression of this asymmetry via a spatial relation of non-central coincidence (Figure/Ground). Therefore the functions assumed by the standard marker seem to be basic to express the contrastive and asymmetric nature of inequality comparison.

Complementary to the role of the standard marker, the comparative marker licenses the selection of two essential components of comparison: a standard or reference, and a differential that defines the extent to which an element A is different from another element B, as discussed by Brucart. In the syntactic representation I propose for Basque inequality comparatives in Section 5.3, Brucart's (2003) shell-structure will be adopted since this recursive structure is adequate to capture the selectional function of the comparative marker. Moreover, this marker stands in a very close relation to the base of the comparison, to the point that in many languages that mark comparative structures in a morphological way (Stassen's group (2b)), this marker can directly attach to the base of the comparison. From this perspective, the comparative morpheme appears to have the function of making the scalar nature of the comparison explicit by attaching or com-

bining with the property, quality or parameter on which the two elements are measured or contrasted.[17]

If my description of the roles performed by the comparative marker and by the standard marker in languages with a comparative particle like English, Spanish or Basque is correct, it seems reasonable to conclude that it is in fact the combination of these two elements what introduces the true comparative meaning in inequality comparative clauses. It is worth emphasizing again that the role assumed by each marker is closely related to the semantic and cognitive primitives involved in inequality comparison: a) introducing the contrastive and asymmetric nature of the relation between the elements compared (the standard marker), and b) presenting the scalar property that will be taken as base of the comparison (comparative marker).

5.2. Differences between amount and degree comparatives

As I have mentioned above, Goenaga defends that the structure in (23) is enough to account for both degree and amount inequality comparatives in Basque. Following Occam's razor (i.e. the 'law of parsimony'), all things being equal his analysis should be preferred over an analysis that distinguishes two different structures for Basque inequality comparatives, one for degree inequality comparatives and another one for amount inequality comparatives. In what follows, I will show that, attractive as it is, there are reasons to conclude that the two types of inequality comparatives present different properties, which strongly suggests that we must distinguish two different structures for inequality comparisons.

(i) First, the cluster formed by the differential, the base and the comparative marker exhibits alternative linearization patterns in amount comparatives in English and Spanish, while the order of these components is fixed in degree comparatives (Table 4).
(ii) The use of the atomic comparative marker *-er* in English is restricted to degree comparatives, whereas complex markers (*more*, for example) have to be used to express amount comparison in this language. Similarly, the atomic comparative marker *-ago* in Basque can only be employed to express degree comparison, and the use of the complex marker (*gehiago* or *gutxiago*) is limited to amount comparatives.
(iii) While in Spanish, English and Basque it is possible to denote both superiority (*more*, *más*, *gehiago*) and inferiority (*fewer*, *menos*, *gutxiago*) in amount comparatives, Basque lacks a specific structure to express inferiority degree

[17] Most languages in the world (see Bobaljik 2007, Appendix 1) do not employ a comparative marker (Stassen's groups 1, 2 and 3). There are different proposals that account for this difference, for example, Kennedy (2007), following Ishii (1991), discuses how some of these languages could have a null comparative morpheme (one such language could be Japanese, which expresses comparison with the locative marker *yori* 'from' and no overt comparative marker) or that the functions that the comparative marker carries in languages that morphologically mark comparatives like English, might be assumed by the standard marker. Further research on languages that allow several types of comparison might be interesting to rethink and reanalyse the functions of these markers and their syntactic and semantic properties.

comparison (sentences like 'John is *less* intelligent *than* Mary' in English, or 'Juan es menos inteligente que María' in Spanish). This gap in the paradigm of comparative structures seems to be more general, Japanese being another language where the paradigm of amount inequality comparatives is complete, while a specific structure for inequality degree comparatives is absent from the language.[18] This cross-linguistic gap in the paradigm suggests that degree and amount comparatives must involve different structures, or that at least they must involve some features that distinguish them from one another.

Summarizing: the three facts discussed above show that amount and degree inequality comparative structures display distinct behaviours in many languages (and perhaps, in all languages). Based on this conclusion, I will argue that we need to distinguish two different structures for degree and amount inequality comparatives in Basque, and probably cross-linguistically too.

5.3. An alternative analysis for Basque inequality comparatives

In the remaining part of this paper I will sketch a tentative proposal for inequality structures in Basque that captures the general properties specified in the sections above. My analysis adopts several of the proposals made by Brucart, Gallego and Goenaga's proposals, while it overcomes some of the difficulties that these analyses presented. The ingredients of my analysis are as follows.

As mentioned at the beginning of the paper, there is no consensus regarding the labelling of the building blocks of inequality comparative structures (Bresnan 1973, Ordóñez 1994, Izvorski 1995, Gallego 2013, Bácskai-Atkári 2014, a.o.). For the sake of clarity, in the present analysis I will name the functional head that is introduced by the comparative marker *Compar°*, and the maximal projection it heads *ComparP*. Compar° takes the phrase that contains the gradable or quantifiable element (base of comparison) as its first argument, and the standard of comparison as its second argument as illustrated in the schema in (26), which corresponds to an abstract representation of degree comparatives.

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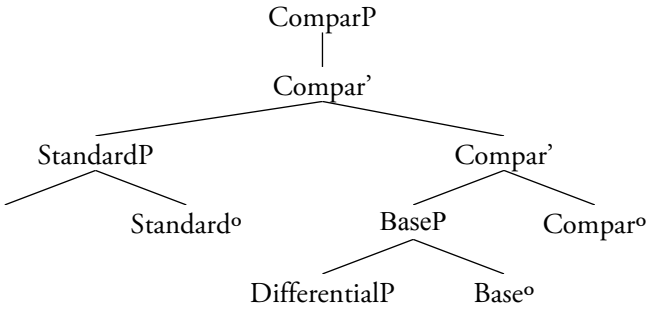
[18] In order to express this meaning both Basque and Japanese appeal to negated equality comparatives, as illustrated in (i) and (ii). Further research on these languages is necessary to clarify the reasons behind this gap in the paradigm of comparative structures. See Vela-Plo (2015) for further discussion on this question.

(i) John ez da Mary bezain azkarra. (Basque)
John not is Mary as.as intelligent
'John is not as intelligent as Mary.'

(ii) John-wa Mary-hodo kasikoku-nai. (Japanese)
John-Top Mary-like intelligent-not
'John is not intelligent like Mary.'

(26)



This analysis borrows from Brucart's (2003) proposal the basic insight regarding the shell-structure proposed by this author. I consider that this recursive structure is best suited to account for the role of the comparative marker: its ability to select two elements that are essential to express comparison, the standard and the differential. I also borrow from Goenaga (2012) the hypothesis that the differential and the base of the comparison form a single argument that stands in a very close relation with the comparative marker, as the following arguments suggest:

(i) The measure phrase is always attached to the base of comparison and the comparative marker.

(ii) There is semantic and also syntactic agreement taking place between these components. This was previously illustrated by the contrast exhibited by the pair in (27), which shows the semantic selectional restrictions that hold between the base and the differential. Example (28) illustrates that this type of selectional restriction also takes place in Spanish.

(27) a. Bi metro luzeago 'Two metres longer' (Basque)
b. *Bi litro luzeago '*Two litres longer'

(28) Mucha más literatura (Spanish)
much.f more literature.f
'Much more literature'

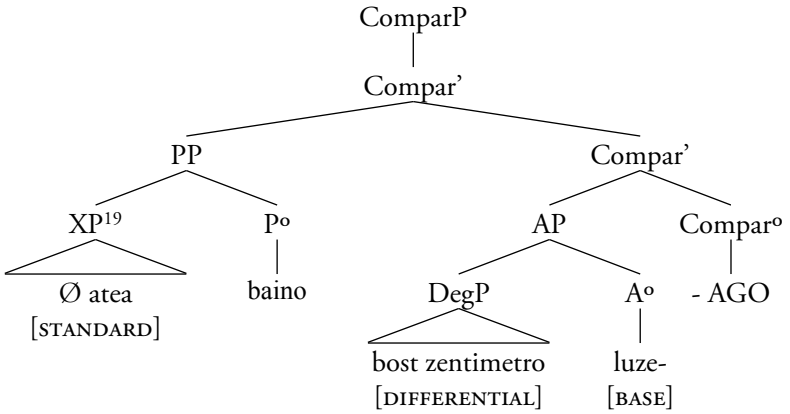
(iii) The comparative morpheme is either attached to the gradable base of the comparison, as in *tall+er* in English or *altu+ago* in Basque, or it obligatory precedes or antecedes the base of the comparison, as in *more books* in English (see Table 4).

For all the above reasons, it seems reasonable to conclude that these elements (the base and the differential) form the first internal argument in the recursive structure that is headed by the comparative head (Compar°).

A common strategy in the semantic representation of comparison found in the literature is to assign the comparative morpheme essentially the same semantic type of a quantificational determiner: that of a relation between two sets of degrees (see Kennedy 2010: 69, for the discussion on *degree* inequality comparatives). One of these sets of degrees is derived by abstracting over the degree argument of the comparative base (the differential); and the second is derived by abstracting over the degree argument of a corresponding predicate that acts as reference of the comparison

(the standard). This analysis presupposes that the standard of comparison contains such a predicate. In my analysis I will defend: (i) that inequality comparatives involve a relation between two sets of degrees in degree comparatives, and between two sets of quantities in amount comparatives; and (ii) that both the differential and the standard of comparison refer to a (specified or not) magnitude, either a quantity or a degree depending on the type of comparison that it is being expressed. Since both the standard of comparison and/or the differential can be omitted and be interpreted as unspecified amounts or degrees, in the following representations "Ø" stands for imprecise degrees in gradable comparatives (as in example (30a), whose structure is represented in (29)), and for non-overt quantifiers in amount comparatives (as in example (31b)).

(29)



Degree comparatives

(30) a. Mahaia [$Ø_{Deg}$ atea baino]$_S$ [bost zentimetro]$_D$ luze-ago-a da.
table door than five centimetres long-more-sg is
'The table is five centimetres longer than the door.'

b. Zeian [esan zuena baino]$_S$ [bi ordu]$_D$ berandu-ago etorri da.
Zeian say had.RCM than two hours late-more come aux
'Zeian has come two hours later than he had said.'

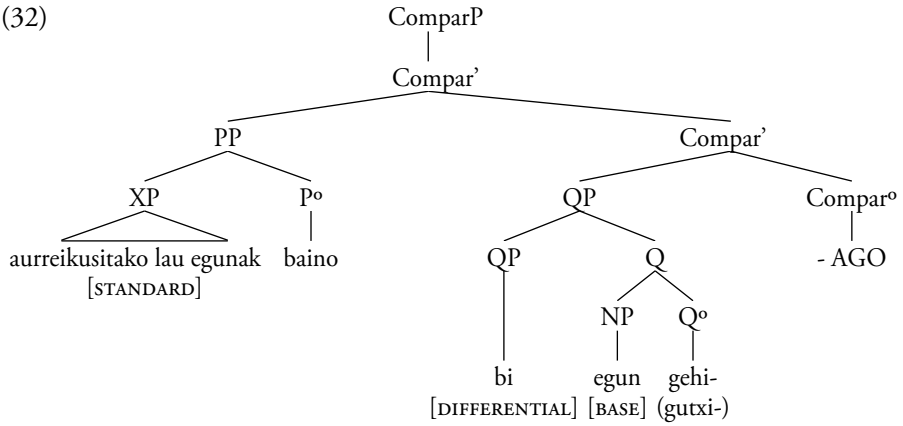
[19] Recall that there is a debate as to what the nature of the complement of the standard marker is in some languages: phrasal, clausal or both. This question has not yet been analyzed in detail in Basque. Whatever the nature of this complement, the important point for our analysis is that the quantifier or degree necessary to establish the comparison would be encoded within this constituent.

Amount comparatives

(31) a. Jaialdia [aurrekusitako lau egunak baino]$_S$ [bi]$_D$ egun gehiago
festival expected four days than two days more
luzatuko da.
be-extended.fut aux
'The festival will be extended two more days than the four expected.'
b. Kepak [Ø$_{Q1}$ liburu baino]$_S$ [Ø$_{Q2}$]$_D$ komiki gehiago ditu etxean.
Kepa.E books than comics more has home.loc
'Kepa has more comics than books at home.'

The structure represented in (32) corresponds to the amount comparative clause in (31a).

(32)



As mentioned above, all things being equal, an analysis that captures both degree and amount inequality comparisons in one single structure (as Goenaga's) would be preferred over an analysis that needs to appeal to two different structures. However, amount and degree inequality comparatives need to be distinguished from each other, as the evidence discussed above in Section 5.2 shows. For this reason, I propose that the gradable or quantifiable element that is taken as the base of the comparison does not attach in the same way to the comparative marker in amount and degree comparatives, and it is precisely this difference that explains the distribution of the so-called atomic and complex comparative markers in Basque.

My analysis for degree comparatives builds on Goenaga's (2012) proposal for this type of comparison, but significantly differs with regard to amount comparatives. For amount comparatives I have extended Artiagoitia's (2006) proposal on the nature of *gutxi* in non-comparative contexts to the analysis of *gutxi* in inferiority amount comparatives (the complex comparative marker *gutxiago* 'fewer') and to the analysis of *gehi* in superiority amount comparatives (the complex comparative marker *gehiago* 'more').

Artiagotia argues that *gutxi* is a quantifier that accepts degree modifiers. This quantifier usually occupies a preverbal focus position in Basque (cf. Etxepare 2003:

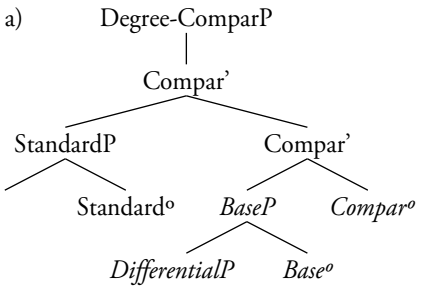
546), as in the example in (33). *Gutxi* is also productively used as an adjective, e.g. *lo gutxia* 'scarce sleep' (data from Artiagoitia 2006: 9). Artiagoitia suggests that either the adjectival nature of this element or its tendency to be focalized might be the reasons why *gutxi* accepts degree modifiers. Regarding the syntactic position of degree words and measure phrases, Artiagoitia proposes that they occupy the specifier position of QP. I adopt this analysis and extend this proposal to both inferiority amount comparatives with *gutxi-ago* and superiority amount comparatives with *gehi-ago*, since both show a parallel pattern in inequality comparatives.

(33) [*oso* jende *gutxi*k] ikusi du hori.
very people few.E see aux that
'Very few people saw that'

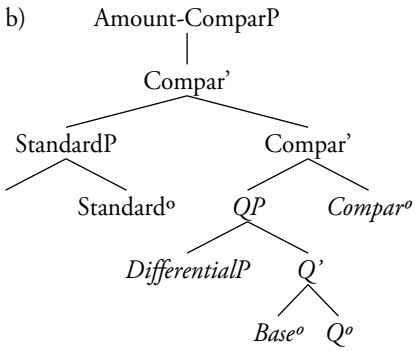
With this discussion in mind, let us consider in more detail the two structures I have proposed for inequality comparatives in (29) and (32). Their abstract representation is illustrated in (34). In the degree comparative structure, the base of the comparison acts as the nucleus of the first internal argument of the comparative head *-ago*. The adjacency between the comparative head and its internal argument (the BaseP) allows the bound comparative marker *-ago* to attach directly to the gradable predicate expressed by the base. As illustrated in (34b), however, in amount comparatives there is an "extra" quantification layer, which is introduced by the complex comparative marker (*gehi* 'many' in superiority comparatives and *gutxi* 'few' in inferiority comparatives). Note that in amount comparatives these quantificational elements act as the head of the first internal argument of the comparative head, while the base of the comparison is in the complement position of these quantifiers. In other words, the relationship between the comparative head and the base is mediated by a QP layer.

In sum, while the comparative marker *-ago* can attach directly to the base of the comparison in degree comparatives, in amount comparatives it cannot attach directly to the base, for the base is now further embedded within a QP. This explains why the comparative marker appears attached to the quantifier (either *gutxi* or *gehi*) in this type of comparative. This syntactic difference is crucial since it may be the cause of the different behaviours displayed by degree and amount comparatives earlier discussed in Section 5.2.

(34) a)



b)



Before I finish, let me add a few words about the operation of differential raising proposed by Brucart. Recall that the different patterns of linearization exhibited by the differential, the base and the comparative marker cluster in Spanish (illustrated in sentences 18a-d) sharply contrast with the fixed linear order that these elements exhibit in Basque (see Table 4). If we assume that these divergent linear orders correspond to the Differential Raising operation introduced by Brucart (2003) for Spanish, the following questions arise: What is the trigger for these different word orders? Is Differential Raising a universal property of differentials? Is it also operative in Basque, although not overtly? If differential raising is not a universal operation, it could follow from the different properties that quantifiers have in these languages, as Goenaga (2012) suggests. It will thus be important to investigate further the possible link between differential raising and the properties of quantifiers in those languages that allow for this movement (English and Spanish, for example) versus those that do not manifest it overtly (Basque).

Gallego (2013) offers an alternative analysis to justify the differential raising pattern displayed by Spanish and argues that it follows from the fact that these types of comparative structures are unstable in their basic configurations. This is so because either they are an instance of an antisymmetry problem *à la* Moro (2000) or, alternatively, because they might give rise to what Chomsky (2013, 2015) deems a Problem of Projection (POP). In any of these cases, a movement operation must necessarily take place to produce a grammatical outcome (i.e. an asymmetric structure that can be properly projected and linearized). Further research regarding the triggers of this divergence seems fundamental both for the better understanding of inequality comparatives and other structures with similar behaviours. I leave these questions open for future work on this topic.

6. Concluding remarks

In this paper I have discussed the basic cognitive and linguistic properties of a universal phenomenon: inequality comparison. I have focused on degree and amount inequality comparative structures in three typologically different languages: English, Spanish and Basque.

As we have seen, there is evidence from the fields of linguistics and neuropsychology that leads to the conclusion that the cognitive representation of inequality comparison is conceived as a spatial relation (Philips et al. 2004), in which two elements stand in an asymmetrical relation with regard to a property or parameter of the comparison (Stassen 1984, 1985).

I have further shown that the type of structures languages used originally to express comparative meanings, in addition to the grammaticalization paths that comparatives in the languages under analysis had, seem to be directly related to the universal semantic and cognitive representation of comparison.

After looking at specific data of degree and amount inequality comparatives in English, Spanish and Basque, Section 4 discusses common semantic and morphosyntactic properties and points of variation among these three languages, and between comparison types (amount or degree). These characteristics serve as a basis to develop a more suitable theory of inequality comparatives in Section 5.

I have studied in detail the differences and commonalities exhibited by inequality comparatives in English, Spanish and Basque and revised some recent analysis of comparative structure in Spanish (Brucart 2003 and Gallego 2013) and Basque (Goenaga 2012). On the basis of this discussion, I have argued for an alternative analysis of Basque inequality comparatives. The basic tenet of my analysis is that the comparative meaning comes from the contribution of two different factors: a) an asymmetric and contrastive relation, presented by the standard marker, and b) a scalar property taken as the parameter of comparison, introduced by the comparative marker. I have also shown that there is evidence that degree inequality comparatives and amount inequality comparatives display different properties with respect to: (i) the type of comparative markers they allow (simple comparative markers vs. complex comparative markers), (ii) the possibility of licensing movement of the differential (differential raising), and (iii) the existence of gaps in the paradigm of degree inequality comparatives which do not seem to exist in amount inequality comparatives (absence of degree inferiority comparatives in languages like Basque and Japanese). On this ground, I have argued that we need to distinguish two different syntactic representations for inequality comparison. In my analysis of Basque inequality comparatives, the comparative structure (Comparative Phrase) is headed by a comparative marker. This comparative marker selects two semantic arguments which projects in a shell-structure. The internal argument complex is formed by the base and the differential. The second argument projects higher and it corresponds to the standard phrase. What distinguishes degree comparatives from amount comparatives in my proposal is that, in amount comparatives, the relation between the comparative marker and the base is mediated by a quantificational layer: the comparative morpheme selects for a QP, and the head of this QP takes the base as its complement. This accounts for why one type of comparative clauses always has complex comparative markers in Basque.

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