

MEASURE PHRASES IN BASQUE

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1. Introduction¹

It is a matter of fact that the pragmatic reading of a construction is closely related to what is understood as the syntactic or morphological head of the structure. However, given a certain thematic relation between two nouns, human languages manage to convey a second optional reading related to another constituent. Exploring some of the thematic relations between nouns, Castillo (2001) has used the term “possessive” to embrace all of them. He examines syntactic issues such as the expression of number and the subcategorization features of the nouns acting as head of the construction and he mainly shows that there is a marked differentiation between what is considered lexical-conceptual and what is considered intentional.

This paper explores Basque measure phrases, i.e. the Basque syntactical expressions of measures of mass, which is one of the possessive relations considered in Castillo’s dissertation. In general, we deal with (non-)specific and mass/count readings, but we focus on the type of thematic and structural relation between the mass noun and the other noun. These relations determine the grammar and distribution of several measure constructions in English, Basque and Spanish. But first a word about the data of the three languages.

Castillo claims that a basic syntactic structure underlies several constructions bearing thematic relations such as container/content, part/whole, and inalienable possession. In fact he claims that they all bear a possessive relation in which the possessed and the possessor act as a subject and a predicate. He points out that the lexical-conceptual level in which a head such as *bottle* is usually explored does not account for the fact that *bottle* can fulfil the subcategorization requirements of two verbs such as *drink* (1a) and *break* (1b).

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- b *Bi pitxer garagardo apurtu ditugu
two pitcher beer broken them-have-we
lit. 'We have broken two pitcher beer'.

(6) contrasts with Spanish and English measure phrases in that the latter are headed by a container noun, which is what allows both container (1b) and content (1a) readings. Given a certain syntactic structure, data of the three languages can be predicted by means of Castillo's proposal. In fact he assumes that items such as container nouns belong to a higher category that bears a container reading but that entails a content reading too. Mass nouns such as *beer* belong to a lower category that only bears a content reading, as can be seen in Basque measure phrases (6).

Section 2 also points out that the verb in (5, 6a) has overt plural agreement with the measure phrase. In that sense, Castillo claims that nouns are not understood as inherently count or mass and that any noun may be used as a mass term or a count noun, given a certain syntax in which number is expressed. Furthermore, Spanish measure phrases like English ones allow a set of determiners (7a), whereas there are several constraints on the Basque bound determiner *-a* (7b).

- (7) a Hemos bebido las dos jarras de cerveza
have-we drunk the two pitcher_{pl} of beer
'We have drunk the two pitchers of beer'
- b %Bi pitxer garagardoak edan ditugu
two pitcher beer-the_{pl} drunk them-have-we
lit. 'We have drunk the two pitcher beers'
'We have drunk the two pitchers of beer'

Section 3 is concerned with the description of certain Basque compounds in which the mass noun appears as a non-head constituent to the left of the construction's head. The section points out that Basque speakers use these constructions to convey both container (5) and content (8) readings.

- (8) Bi xanpain-botila edan ditugu
two champagne bottle drank them-have-we
lit. 'We have drunk two champagne bottle'
'We have drunk two bottles of champagne'

These data again are consistent with Castillo's proposal. Moreover, Spanish constructions similar to the measure phrases described in section 2 can have other nominal heads not related to a container noun (9). These thematic relations are avoided in Basque measure phrases but they can be expressed in compounds where the mass noun is a non-head constituent.

- | | | | |
|-------|---------------------------------|---|-----------------------------------|
| (9) a | dos manchas de leche | b | dos flanes de leche |
| | two stain _{pl} of milk | | two custard _{pl} of milk |
| | lit. 'Two stains of milk' | | lit. 'Two custards of milk' |
| | 'Two milk stains' | | 'Two custards of milk' |

In fact a conclusion of section 2 and section 3 is that Basque (measure) phrases headed by a mass noun may only have readings related to the measure of the mass term, while all the other relations are expressed in compounds. Spanish constructions headed by a non-mass noun are available for all these thematic relations.

Finally section 3 shows that compound constructions may take the bound determiner *-a* (10) when a specific reading is required.

- (10) Bi xanpain-botilak edan ditugu
two champagne bottle-the_{pl} drunk them-have-we
lit. 'We have drunk the two champagne bottles'
'We have drunk the two bottles of champagne'
- (11) %Bi botila txanpainak edan ditugu
two bottle champagne-the_{pl} drunk them-have-we
lit. 'We have drunk the two bottle champagnes'
'We have drunk the two bottles of champagne'

1. Some issues in the grammar of Basque determiners and quantifiers

The Basque bound morpheme *-a* is called an «article» in traditional grammars but its usage goes beyond the definite article of both Spanish and English in several aspects. In fact, *-a* does not always denote a specific reading, although the absence of determiners leads to a non-specific reading.

Bare noun phrases are not allowed in Basque.

- (12) *Txakur ekarri dugu
dog brought it-have-we
lit. 'We have brought dog'

Singular grammatical noun phrases such as (13) bear the determiner *-a*,² which is attached to the last element in the noun phrase. The singular number marker is non-overt and we do not express it in English glosses. Basque verbs show agreement with objects but the singular marker is non-overt there too. However, we gloss it as 'it'.³

- (13) a Txakurra ekarri dugu b Txakur zuria ekarri dugu
dog-the brought it-have-we dog white-the brought it-have-we
'We have brought the dog' 'We have brought the white dog'

Items traditionally taken as count nouns such as *txakur* 'dog' in (13) take a specific reading, whereas mass nouns in expressions such as (14) may take either specific or non-specific⁴ readings.

² See Laka (1995) for a complete description of Basque quantifiers, determiners such as *-a* and demonstratives. In this paper we are not concerned with demonstratives.

³ In fact the agreement marker with the object is overt, although no number is expressed when the noun phrase is singular. Laka (1993) provides a detailed description of the Basque finite verb, which actually shows agreement with three arguments.

⁴ Artiagoitia (2002) claims two different determiner phrase structures for the two readings available in (14).

- (14) Ardoa edan dugu
 wine-the drunk it-have-we
 lit. 'We have drunk the wine'
 'We have drunk (the) wine'

The Basque plural marker *-k* always appears after the determiner *-a* and bare plurals (15b) are not allowed. The verb shows an overt plural agreement mark which we gloss as 'them'.

- (15) a Txakurrak ekarri ditugu b *Txakurk ekarri ditugu
 dog-the_{pl} brought them-have-we dog_{pl} brought them-have-we
 lit. 'We have brought the dogs' lit. 'We have brought dogs'
 'We have brought (the) dogs'

Count nouns may have either a specific or a non-specific reading in (15a). Mass nouns with the determiner and the plural marker take a specific count reading related to the types of classes denoted by the noun:

- (16) Catalunyako xanpainak edan ditugu (type-count reading)
 Catalonia-from champagne-the_{pl} drunk them-have-we
 'We have drunk the Catalan champagnes'

Laka (1995) has classified Basque quantifiers according to their availability for co-occurrence with the determiner *-a*.

1) The determiner *-a* is required by universal quantifiers such as *guzti* 'all' in both count (17) and mass (18) noun phrases. Count nouns require the overt plural marker *-k*.

- (17) Txakur guztiak ekarri ditugu (18) Ardo guztia edan dugu
 dog all-the_{pl} brought them-have-we wine all-the_{pl} drunk it-have-we
 'We have brought all the dogs' 'We have drunk all the wine'

2) Indefinite quantifiers do not allow the determiner *-a* and they belong to two classes. Most of these quantifiers precede the noun and are available only for count readings. We will call them count-indefinite quantifiers.

- (19) Hainbat txakur ekarri dugu/ditugu
 some dog brought it-have-we/them-have-we
 lit. 'We have brought some dog'
 'We have brought some dogs'

As has been said the singular is unmarked in Basque. For these noun phrases the verb has available both the singular and the plural agreement markers.⁵

Some of the indefinite quantifiers are preceded by the noun and are available for both count (20a) and mass (20b) readings. We will call them mass/count indefinite quantifiers.

⁵ In this paper we are not concerned with the distribution of these two options among the different dialects of Basque and we just state that the agreement options are two. However, the standard of the language prefers plural agreement in the verb.

- (20) a Txakur asko ekarri dugu/ditugu
 dog a lot brought it-have-we/them-have-we
 lit. 'We have brought a lot of dog'
 'We have brought a lot of dogs'
- b Ardo asko edan dugu/*ditugu
 wine a lot drank it-have-we/*them-have-we
 'We have drunk a lot of wine'

The noun does not bear a marker. The verb may take either a singular or a plural agreement marker in count readings (20a), and only the singular agreement marker is allowed in mass readings (20b).

3) Numeral quantifiers precede the noun, and can appear in noun phrases both with (21a) and without (21b) a determiner.

- (21) a Hiru txakurrak ekarri ditugu/*dugu
 three dog-the_{pl} brought them-have-we/*it-have-we
 'We have brought the three dogs'
- b Hiru txakur ekarri dugu/ditugu
 three dog brought it-have-we/them-have-we
 lit. 'We have brought three dog'
 'We have brought three dogs'

Notice that the determinerless noun phrase in (21b) bears no overt number marker, i.e. it is a singular noun phrase, but nevertheless the verb maintains the two agreement options. On the other hand, noun phrases bearing both the determiner *-a* and the overt plural marker *-k* require the plural agreement marker in the verb (21a).

2. Basque measure phrases

This section is concerned with the description of issues involved in the grammar of Basque measure phrases. Section 2.1. shows that the measure nouns available in the Basque construction denote a part/whole relation between the noun to the left and the mass noun. Moreover, the mass term that heads the construction only allows a part-content reading, whereas Spanish measure phrases, and to a certain extent English ones, headed by the container noun allow both container and content readings. Section 2.2 claims that Basque measure phrases are instantiations of a count-part reading of a mass noun. Section 2.3 points out that Basque measure phrases barely take article-related specific readings.

2.1. Thematic relationships

What has been called a measure phrase in both Spanish and English (22a-b) has two constituents. The first one consists of a numeral and a measure noun bearing the plural marker *-s*. The second one is a prepositional phrase headed by *de/of*. The object of the preposition is a bare noun that expresses the matter being measured. What has been called measure phrase in Basque (Trask 2001: §3.1.2.5.5) is quite different (22c):

- (22) a dos tazones de leche
two cup_{pl} of milk
'Two cups of milk'
b two cups of milk
'Two cups of milk'
- c bi katilu esne
two cup milk
lit. 'Two cup milk'.

The measure noun *katilu* 'cup' does not bear an overt number marker or determiner.⁶ Recall that this is common in Basque count noun phrases with numerals (→§1) (23).

- (23) a bi katilu
two cup
lit. 'Two cup'
'Two cups'
- b hiru txakur
three dog
lit. 'Three dog'
'Three dogs'.

Furthermore, Basque is a head-final language with its corresponding (bound) postpositions as can be seen in constructions such as (24).

- (24) a bi litroko bolumena
two litre-of volume-the
lit 'The volume of two litres'
'Two litre volume'
- b [[bi litro]_{XP} -ko_{PP}] bolumen_N -a_D

However (22c) shows that the item being measured in measure phrases is not expressed by a postpositional phrase but by a bare noun. In any case, Spanish, English and Basque measure nouns all take adjectives as an adjunct:

- (25) a dos tazones de leche caliente
two cup_{pl} of milk hot
'Two cups of hot milk'
- b two cups of hot milk
- c bi katilu esne bero
two cup milk hot
lit. 'Two cup milk hot'
'Two cups of hot milk'
- c [[bi katilu]_{XP} esne_N bero_A]_{NP}⁷

⁶ Azkarate (1990: §5.11) points out that, as expected, Basque is not the only language exhibiting this pattern. In fact [cf. (i)], German measure phrases pattern with Basque expressions of measure; Azkarate [cf. (ii)] also provides a Basque measure phrase that we do not analyse in this paper. We are not concerned with constructions such as (iii) either, but see note 7:

- (i) ein glas bier
a glass beer
lit. 'A glass beer'
'A glass of beer'
- (ii) katilua bete esne
cup-the full milk
lit. 'The cup full milk'
'A cupful of milk'
- (iii) bi metro luze
two metre long
lit. 'Two metre long'
'Two metres long'

⁷ Artiagoitia (2000: §3.2) points out that Basque indefinite quantifiers split into two syntactic behaviours. Most of the count-indefinite quantifiers, numerals and measure phrases themselves all appear to the left of the noun phrase, which could be evidence of their situation inside the noun phrase.

- (i) a [[hiru]_{XP} txakur_N]_{NP}
lit. 'Three dog'
'Three dogs'
- b [[hainbeste]_{XP} txakur_N]_{NP}
lit. 'So many dog'
'So many dogs'
- c [[bi katilu]_{XP} esne_N]_{NP}
lit. 'Two cup milk'
'Two cups of milk'

Castillo (2001) points out that, in a broad sense, a large number of thematic relations between nouns can be taken as a possessive relation. Under that label he has explored the grammar of container/content, part/whole and inalienable possession relations. The point of departure of Castillo's dissertation is the fact that English and Spanish measure phrases may bear either a content reading (26a) or a container reading (26b).⁸

- (26) a Hemos bebido dos botellas de cerveza
 have-we drunk two bottle_{pl} of beer
 'We have drunk two bottles of beer'
- b Hemos roto dos botellas de cerveza
 have-we broken two bottle_{pl} of beer
 'We have broken two bottles of beer'

In fact one of Castillo's most important contributions to this area is to have shown that what is called lexical-conceptual must be distinguished from what is called intentional. He points out that the traditional concept of head does not capture these facts, since it cannot be true that a unique head like *bottle* must determine the two selections corresponding to the verbs *drink* and *break*. Besides proposing a single syntactic structure that underlies measure phrases and some other possessive constructions, he follows J. Uriagereka and develops a modular conception of grammar categories, which are built along a dimensional hierarchy. He actually tries to find the mechanism that derives a more complex category from a less complex one. In fact nouns such as *bottle* belong to a category that permits a container reading but that entails a content reading too. On the other hand, content nouns such as *beer* belong to a lower category in which just a content reading is allowed. It should be noticed that Spanish noun phrases headed by content nouns like *cerveza* 'beer' (27a-b) contrast with measure phrases (26) in that they do not allow container readings:

Artiagoitia uses XP to embrace all these prenominal constructions that are phrases or have a phrase-like flavour. In fact, a quantifier such as *hainbeste* 'so many' is literally 'as many as that', and furthermore, there are some other pronominal quantifiers such as *makina bat* lit. 'machine one', 'a lot' whose phrase nature is transparent. In this paper we argue that the sole content reading of Basque measure phrases indicates that the construction is headed by the other noun, i.e., the mass noun. The final position of count/mass quantifiers could indicate that they are heads that take noun phrases as a complement:

- (ii) [esne/txakur_N asko_Q] _{QP}
 lit. 'A lot of milk/dog'
 'A lot of milk/dogs'

Trask (2001: §3.1.2) does not ignore what he calls Det 1 and Det 2 positions but he describes Basque *-a*, demonstratives, numerals and indefinite quantifiers all under the single heading of determiners. The actual nature of Basque measure phrases and in general of Basque quantifiers is outside of the scope of this paper, but let us recall that only numerals (to the left in the noun phrase) are compatible with both the bound determiner *-a* and demonstratives.

⁸ In fact, English nouns such as *bottle* or *glass* head phrases that may bear either a content or container reading, whereas phrases headed by nouns such as *cup* tend to bear only a content reading.

- (27) a Hemos bebido dos cervezas de botella
 have-we drunk two beer_{pl} of bottle
 lit. 'We have drunk two beers of bottle'
 'We have drunk two bottled beers'
- b *Hemos roto dos cervezas de botella
 have-we broken two beer_{pl} of bottle
 lit. 'We have broken two beers of bottle'

Crucially, unlike Spanish measure phrases, Basque counterparts allow only a content reading:

- (28) a Bi botila garagardo edan dugu/ditugu⁹
 two bottle beer drunk it-have-we/them-have-we
 lit. 'We have drunk two bottle beer'
 'We have drunk two bottles of beer'
- b *Bi botila garagardo apurtu ditugu
 two bottle beer broken it-have-we/them-have-we
 lit. 'We have broken two bottle beer'

On the other hand, Basque has constructions similar to the Spanish one in (27a), in that a postpositional phrase modifies a mass noun that would otherwise only allow a mass reading.

- (29) Bi botilako garagardo edan dugu/ditugu
 two bottle-of garagardo drunk it-have-we/them-have-we
 lit. 'We have drunk two beer of bottle'
 'We have drunk two bottled beers'

Therefore, Basque measure phrases (28a) and some other constructions of Spanish (27) and Basque (29) are headed by a mass noun and allow a content reading. On the other hand Spanish and English measure phrases headed by certain container nouns (26) take both content and container readings. Castillo's proposal can predict this set of readings and structural relations, but it should be remarked that the term measure phrase embraces several human language structures that can be headed either by a measure noun or by a mass term.

It is worth exploring some other Spanish structures bearing a mass noun. Besides the measure phrase described by Castillo (27a=30a), we assume that (30b-c) are measure phrases too (→§2.2).

- (30) a dos tazones de leche b dos cucharadas de leche
 two cup_{pl} of milk lit. 'Two spoonful_{pl} of milk'
 'Two cups of milk' 'Two spoonsful of milk'
- c dos litros de leche
 two litre_{pl} of milk'
 'Two litres of milk'

⁹ Some nouns never lose their final vowel *-a*. Thus *botila* 'bottle' or *katilukada* 'cupful' may correspond either to the nude noun or to the noun phrase with the determiner *-a*.

The set of nouns acting as a head is of course much broader. Let us consider just two more:¹⁰

- | | | | |
|--------|--|---|---|
| (31) a | dos flanes de leche
two custard _{pl} of milk
lit. 'Two custards of milk'
'Two milk custards' | b | dos manchas de leche
two stain _{pl} of milk
lit. 'Two stains of milk'
'Two milk stains' |
|--------|--|---|---|

The set of thematic relations allowed in the Basque construction headed by a mass noun is narrower. In fact, only the counterparts of Spanish phrases in (30) are allowed.

- | | | | |
|--------|--|---|--|
| (32) a | bi katilu esne
two cup milk
lit. 'Two cup milk'
'Two cups of milk' | b | bi katilukada esne
two cupful milk
lit. 'Two cupful milk'
'Two cupsful of milk' |
| c | bi litro esne
two litre milk
lit. 'Two litre milk'
'Two litres of milk' | | |

¹⁰ Needless to say, the set of nouns that act as a head is much broader even for liquid mass noun constructions. In fact, nouns such as *tipo* 'type' should be explored from the point of view of thematic relationships. Basque has compounds again:

- (i) esne mota
milk type
'Milk type'

The set of Spanish items that can be categorically classified as halfway between nouns and quantifiers has been amply described in the literature (Sánchez 1999), and researchers of other languages have even proposed these items as new entries for the dictionary (see Estopà 1996 for Catalan). Of course, the set of constructions grows still larger if we take into account solid mass nouns, such as those in (ii), which are outside the scope of this paper. Nevertheless, let us make two points. In (iia), *filete* 'fillet' is a part noun of a mass noun. *Parrillada* 'grill' in (iib) is a noun similar to *cucharada* 'spoonful' but it should be noticed that the count noun takes the plural marker *-s*.

- | | | | |
|--------|--|---|---|
| (ii) a | dos filetes de carne
two fillets _{pl} of meat
'Two fillets of meat' | b | una parrillada de sardinas
one grill of sardine _{pl}
lit. 'a grill of sardines'
'A serving of grilled sardines' |
|--------|--|---|---|

Solid nouns can appear in Basque measure phrases (iia). Part nouns are avoided in Basque measure phrases headed by a solid noun (iib) but they are allowed in compounds (iic).

- | | | | | | |
|---------|---|---|---|---|--|
| (iii) a | bi kilo gazta
two kilo cheese
lit. 'Two kilo cheese'
'Two kilos of cheese' | b | *bi zati gazta
two piece cheese
lit. 'Two piece cheese'
'Two pieces of cheese' | c | bi gazta-zati
two cheese piece
lit. 'Two cheese piece'
'Two pieces of cheese'.
'Two cheese pieces' |
|---------|---|---|---|---|--|

Researching the whole set of thematic relations between these kinds of nouns is obviously outside the scope of this paper, but we believe that the general description of Basque compounds (Azkarate 1990) is a good point of departure for research in this area.

The unit noun *litro* 'litre' (30c=32c) clearly expresses a part of the whole mass. Moreover, *cucharada* 'spoonful' (30b) is not a spoon, i.e. a container, but a part of the whole (milk) contained in the spoon. Finally, Castillo describes (30a) as container/content pairs and in fact, Spanish constructions allow both readings. Nevertheless, Basque constructions only allow the content reading, and furthermore, the nouns to the left in (32b-c) have nothing to do with containers. We assume that thematic relations in Basque measure phrases are part/whole of a mass for the three types of nouns used as measure. The thematic relations expressed by pre/postpositional phrases in both Spanish (27) and Basque (29) bear a reading that does not correspond to the pair content/container, but rather to content/presentation.

The other thematic relations expressed by Spanish structures headed by a container noun are not allowed in the Basque counterpart.

- (33) a *bi flan esne
 two custard milk
 lit. 'Two custard milk'

It should be noticed that the thematic relations in (31=33) are such that the subcategorization requirements for the verb *beber* 'to drink' cannot be fulfilled.

- (34) a *Hemos bebido dos flanes de leche
 have-we drunk two custard_{pl} of milk
 lit. 'We have drunk two custards of milk'
 b *Hemos bebido dos manchas de leche
 have-we drunk two custard_{pl} of milk
 lit. 'We have drunk two stains of milk'

Although a mass noun is involved in all the cases in the set, we will assume that (30=32) are, but (31=33) are not part/whole relations. This terminological reformulation accounts for the distinction that Basque makes between measure phrases and compound constructions (→§3.1).

In short, what has been called a measure phrase in Basque is headed by a mass noun and it denotes only a part of the mass whole, delimited either by an object that contains it or by a unit noun. Relations that cannot be considered strictly as part/whole are not allowed in Basque measure phrases. On the other hand, what has been called a measure phrase in both Spanish and English is headed by a container noun, which in most cases allows both container and content readings. Spanish constructions allow some other thematic relations based on nouns different from containers.

2.2. Mass/count readings, quantifiers and number agreement

Castillo's hierarchy of nouns does not hold only for differentiating between lexical-conceptual and intentional levels, but also for the issue of count and mass readings, i.e. for the expression of number in human languages. In fact it is well attested that there is no way to predict whether a noun will be treated as a count

Phrases bearing either a count (39a) or a mass/count (39b) quantifier may also take a plural reading:

- (39) a Catalunyako hainbat xanpain edan dugu/ditugu (type-count reading)
Catalonia-from some champagne drunk it-have-we/them-have-we
lit. 'We have drunk some champagne from Catalonia',
'We have drunk some Catalan champagnes'
- b Catalunyako xanpain asko edan dugu/ditugu (type-count reading)
Catalonia-from champagne a lot drunk it-have-we/them-have-we
lit. 'We have drunk a lot of champagne from Catalonia'
'We have drunk a lot of Catalan champagnes'

Numerals are also allowed in this context:

- (40) Catalunyako bi xanpain edan dugu/ditugu (type-count reading)
Catalonia-from two champagne_{pl} drunk it-have-we/them-have-we
lit. 'We have drunk two champagne from Catalonia'
'We have drunk two Catalan champagnes'

In short, plural markers (38), count-indefinite quantifiers (39) and numerals (40) all are allowed in type-count readings of the nominal *xanpain*. Mass readings require a non-overt number mark in the verb, whereas count readings allow both non-overt and overt plural markers. Finally, count/mass indefinite quantifiers give rise to mass readings with a non-overt agreement marker in the verb (35b), but a count reading allows both a non-overt singular (39-40) and an overt plural (38) agreement marker. Thus, the count use of a noun generally seen as a mass term requires either the overt plural marker in the noun phrase, or the overt plural agreement marker in the verb, or both.

The type reading is not the only count reading available for items normally taken as mass nouns. Let us see the contrast between the readings of *xanpain* 'champagne' and the readings of *ardo* 'wine'. First, besides the mass reading (41a), *ardo* has available the same type-count reading (41b) as *xanpain*.

- (41) a Errioxako ardo asko edan dugu (mass reading)
Rioja from wine a lot drunk it-have-we
lit. 'We have drunk a lot of wine from Rioja'
'We have drunk a lot of Rioja wine'
- b Errioxako ardo asko edan dugu/ditugu gure bizitzan (type-count reading)
Rioja from wine a lot drunk it-have-we/them-have-we our life-in
lit. 'We have drunk a lot of wine from Rioja in our lifetime'
'We have drunk a lot of Rioja wines in our lifetime'

However, at least in the Basque Country, *ardo* 'wine' has available another count reading:

- (42) a Errioxako ardo asko edan dugu/ditugu gaur (content-count reading
Rioja from wine a lot drunk it-have-we/them-have-we today
lit. 'We have drunk a lot of wines from Rioja today'
'We have drunk a lot of glasses of Rioja wine today')
- b Errioxako bi ardo edan dugu/ditugu gaur (content-count reading)
Rioja from wine a lot drunk it-have-we/them-have-we today
lit. 'We have drunk two wine from Rioja today'
'We have drunk two glasses of Rioja wine today')

We agree with Castillo in that the differences between *ardo* nouns and *xanpain* nouns are not lexical and have more to do with pragmatics. Castillo says that all nouns are count at some level. That is scientifically true in the cases of pure elements such as water, which eventually can be counted as molecules. In fact, Odrizola and Martínez (2003) show that Basque has accepted in its new technical registers measure phrases in which the noun to the left is *molekula*:

- (43) bi molekula ur
two molecule water
lit. 'Two molecule water'
'Two molecules of water'. 'Two water molecules'

In terms of thematic relations, it should be remarked that the concept expressed by the nominal *molekula* is just related to a part/whole relation with the corresponding noun of the element. This has made possible the new measure phrase, which patterns with the three types of measure nouns described in section 2.1.

Turning to *ardo* and *xanpain*, the fact is that the count reading of *ardo* 'wine' allowing this noun to be pluralised is related either to measure or to type. On the other hand, the count reading of *xanpain* is today only related to type of champagne, but of course, this may change in the future. In any case, measure phrases are instantiations of count readings. In fact, a measure reading is possible when a mass noun is understood as part-count noun.

- (44) Bi baxoerdi ardo edan dugu/ditugu
two shot wine drunk it-have-we/them-have-we
lit. 'We have drunk two small glass wine'
'We have drunk two small glasses of wine'

Spanish and English phrases show the same expression of number in both container (45a) and (count) content (45b) readings, as can be seen in the pronominalization test that Castillo applies to phrases.¹¹

¹¹ Nevertheless, one of the crucial examples in Castillo's work concerns the (syntactic) contrast that extraction shows in structures of both readings:

- (45) a Hemos roto dos botellas de cerveza antes de beberlas/*la
 have-we broken two bottle_{pl} of beer before drink them/*it
 ‘We have broken two bottles of beer before drinking them/*it’
- b Hemos bebido dos botellas de cerveza antes de romperlas/*la
 have-we drunk two bottle_{pl} of beer before broke-them/*it
 ‘We have drunk two bottles of beer before breaking them/*it’

As can be seen, *ardo* nouns give rise to measure phrases (44) completely equivalent to those of constructions without container nouns as in (42b).¹² *Xanpain* nouns acquire in measure phrases the content-count reading that was not available without container nouns:

- (46) Bi botila xanpain edan dugu/ditugu (content-count reading)
 two bottle champagne drunk it-have-we/them-have-we
 lit. ‘We have drunk two bottle champagne’
 ‘We have drunk two bottles of champagne’

Furthermore, counterparts of measure phrases without an overt measured noun are available in Basque.

- (47) a Bi edan dugu/ditugu
 two drunk it-have-we/them-have-we
 lit. ‘We have drunk two’
 ‘We have drunk two’
- b Bi botila edan dugu/ditugu
 two bottle drunk it-have-we/them-have-we
 lit. ‘We have drunk two bottle’
 ‘We have drunk two bottles’

Needless to say, *baxoerdi* (44) and *botila* (47) act as standard count nouns such as *txakur* ‘dog’ or *etxe* ‘house’ (48).

- (48) a Bi etxe erosi dugu/ditugu
 two house bought it-have-we/them-have-we
 lit. ‘We have bought two house’
 ‘We have bought two houses’
- b Bi erosi dugu/ditugu
 two bought it-have-we/them-have-we
 ‘We have bought two’

Let us explore now the distribution of the other quantifiers in constructions with count readings. Mass nouns allow both universal (49a) and count/mass indefinite (49b) quantifiers in their count readings.

- (i) a ¿De qué bebiste dos botellas?
 Of what drank two bottle_{pl}
 lit. ‘Of what did you drink two bottles’
- b *¿De qué rompiste dos botellas?
 Of what broke a bottle_{pl}

¹² See Wiese (1999) for German.

- (49) a Ardo guztiak edan ditugu
 wine all-the_{pl} drunk them-have-we
 'We have drunk all the wines'
- b Ardo asko edan dugu/ditugu
 wine a lot drunk it-have-we/them-have-we
 lit. 'We have drunk a lot of wine'
 'We have drunk a lot of wines' (type).
 'We have drunk a lot of small glasses of wine' (measure)

Turning to measure phrases, it should be noted that count/mass indefinite quantifiers are avoided (50).

- (50) *baxoerdi asko ardo
 glass wine a lot
 lit. 'A lot of small glass of wine'

Nevertheless Basque has available a special measure phrase counterpart. The suffix *-ka* usually attaches to nouns in order to derive items that belong to the category of adverbs:

- (51) Marisak oihuka erantzun dit
 Marisa-ERG shout-*ka* answered it-have-me-she
 'Marisa shouted her answer to me'

Although we are not dealing here with the syntactic distribution of Basque adverbs, let us say that *-ka* also derives items from the numerals *hamar* 'ten', *ehun* 'hundred', *mila* 'thousand' and *milioi* 'million'. Derived items appear in the place of the numeral in measure phrases:

- (52) Ehunka basoerdi ardo edan ditugu Mundakan
 hundred-*ka* glass wine drunk them-have-we Mundaka-in
 lit. 'We drank hundred of small glass of wine in Mundaka'
 'We drank hundreds of small glasses of wine in Mundaka'
 'We drank wines by the hundred'

On the other hand, Spanish measure phrases allow the three types of quantifiers, and they also can take some prepositional phrases having a modifier function similar to that of Basque items derived from numerals:

- (53) a Hemos bebido todos los vasos de vino
 have-we drunk all the glass_{pl} of wine
 'We have drunk all the glasses of wine'
- b Hemos bebido algunos vasos de vino
 have-we drunk some glass_{pl} of wine
 'We have drunk some glasses of wine'
- c Hemos bebido cientos de vasos de vinos
 have-we drunk hundred_{pl} glass_{pl} of wine
 'We have drunk hundreds of glasses of wine'

- c' Hemos bebido vasos de vino a centenares
 have-we drunk glass_{pl} of wine at hundred_{pl}
 'We have drunk glasses of wine by the hundreds'

In short, section 2.1 has shown that Basque measure phrases do not express a content reading so much as a part of the whole expressed by the mass term. We assume here that Basque measure phrases express a count part/whole reading of the mass term allowing both singular and plural agreement markers in the verb. Basque measure phrases never take a (count) container reading in the terms defined by Castillo.

2.3. (Non-)specific readings and determiners

Basque measure phrases have several constraints both on specific readings and on availability for determiners. As has been seen, Basque noun phrases with numerals may appear with (54a) and without (54b) the determiner *-a* in order to denote specific and non-specific readings, respectively. It should be recalled that the determinerless noun phrase allows both the singular and the plural agreement marker in the verb (54b). Plural agreement is obligatory in (54a), where the determiner appears preceding the plural marker *-k*:

- (54) a Azkenean bi katiluak erosi ditugu/*dugu
 finally two cup-the_{pl} bought them-have-we/*it-have-we
 'Finally we bought the two cups'
 b Londresen bi katilu erosi dugu/ditugu
 London-in two cup bought it-have-we/them-have-we
 'We bought two cups in London'

Basque allows bare numerals with and without a determiner:

- (55) a Azkenean bi erosi dugu/ditugu
 finally two bought it-have-we/them-have-we
 'Finally we bought two'
 b Azkenean biak erosi ditugu/*dugu
 finally two-the_{pl} bought them-have-we/*it-have-we
 lit. 'Finally we bought the two'.
 'We finally bought both (of them)'

As has been said, universal quantifiers require the determiner and plural agreement in the verb:

- (56) Katilu guztiak erosi ditugu
 cup all-the _{pl} bought them-have-we
 'We have bought all the cups'

We know that the determiner confers a specific reading only to count nouns with a non-overt singular marker, and to mass nouns used as count nouns by means of the plural marker. As is well known, the specific reading is the only

option in some syntactic contexts. Regarding Basque, such a context requires the determiner:

- (57) a Non daude Londresen erosi ditugun bi katiluak?
 where are London-in bought them-have-we-that two cup-the-pl
 'Where are the two cups that we bought in London?'
 b *Non daude Londresen erosi ditugun bi katilu?
 where are London-in bought them-have-we-that two cup
 lit. 'Where are two cup that we bought in London?'

Basque measure phrases barely allow the determiner *-a*. With a plural marker the construction is given different judgements by speakers (58b).

- (58) a Bi katilu esne edan dugu/ditugu
 two cup milk drunk it-have-we/them-have-we
 lit. 'We have drunk two cup milk'
 'We have drunk two cups of milk'
 b %Ondo egon dira bi katilu esneak?¹³
 good been AUX-them two cup milk_{pl}
 lit. 'Were the two cup milks good?'
 'Were the two cups of milk good?'

The (non-overt) singular mark preceded by the determiner *-a* is clearly avoided:

- (59) *Ondo egon dira bi katilu esnea?
 good been AUX-them two cup milk
 lit. 'Were the two cup milk good?.'

In short, even though the bound determiner *-a* is the most standard way to denote specificity in certain noun phrases, Basque speakers give different judgements about the grammaticality of measure phrases with the determiner.

3. Basque compounds and content/container readings

Basque has a type of compounds similar to certain English compounds (Grimshaw 1992: §2.2.2, §3.4) in that the head of the construction appears to the right and can be a container noun. The constituent to the left can be a mass noun.

- (60) a beer bottle b garagardo-botila

Section 3.1 is concerned with the availability of some Basque compounds for readings not related to the head. Section 3.2. describes these compounds as (almost) the only way to express specific content readings of mass terms.

¹³ Artiagoitia (1998) uses the symbol % precisely to express the variability of judgements about the grammaticality of Basque measure phrases with determiners.

3.1. Content readings and possessive thematic relations in Basque compounds

The Academy of Basque *Euskaltzaindia* (1985: 3.2.1.5) in a prescriptive and descriptive work has said that content readings must be expressed by measure phrases (61) and not by constructions headed by the compound container noun (62).

(61) bi botila xanpain edan dugu/ditugu
two bottle champagne drunk it-have-we/them-have-we
lit. 'We have drunk two bottle champagne'
'We have drunk two bottles of champagne'

(62) bi xanpain-botila edan dugu/ditugu
two bottle champagne drunk it-have-we/them-have-we
lit. 'We have drunk two champagne bottle'
'We have drunk two bottles of champagne'

Even a non-normative linguist like Trask (2001: §3.1.2.5.5) has given two different translations for the two Basque structures:

(63) a bi botila garagardo b bi garagardo-botila
lit. 'Two bottle beer'. lit. 'Two beer bottle'.
'Two bottles of beer' 'Two beer bottles'.

We believe that the aim of most works on the subject has been to distinguish between the structure of Basque measure phrases headed by a mass noun (64a) and that of constructions headed by a compound container word (64b) (see note 7).¹⁴

(64) a [[bi botila]_{XP} garagardo_N]_{NP} b [[bi]_{XP} [garagardo_N botila_N]_{NP}]_{NP}

However, the fact is that Basque speakers do not reject (62).¹⁵ Moreover, we know that Basque measure phrases do not accept the container reading allowed in

¹⁴ Azkarate (1999) shows indirectly the differences between (64a) and (64b) when she says that measure phrases are not to be taken as compounds.

¹⁵ Even given a possible interference between Basque and Spanish or French in the use of (62), it should be noted that neither Romance language has available any compound of this type. From the strict point of view of word order, Spanish measure structures (ia) are closer to Basque measure phrases (ib) than to structures based on compounds (ic):

(i) a dos botellas de champagne b bi botila xanpain c bi xanpain-botila
two bottle_p of champagne two bottle champagne two champagne bottle
'Two bottles of champagne' lit. 'Two bottle champagne' lit. 'Two champagne bottle'
'Two bottles of champagne'

Furthermore, the pragmatics of some mass nouns such as *ur* 'water' seems to make a distinction between the unbottled mass and the mass bought in bottles:

(ii) a bi botila ur edan dugu/ditugu
two bottle water drunk it-have-we/them-have-we
lit. 'We have drunk two bottle water'.
'We have drunk two bottles of water'

b %Jarriko didazu/dizkidazu bi botila ur mesedez?
bring it-have-FUT-you/them-have-FUT-you two bottle water please
lit. Will you bring me two bottle water please?
'Would you bring me two bottles of water please?'

- (69) a *Bi esne-flan edan dugu/ditugu
 two milk custard drunk it-have-we/them-have-we
 lit. 'We have drunk two milk custard'
- b *Bi esne-flan edan dugu/ditugu
 two milk custard drunk it-have-we/them-have-we
 lit. 'We have drunk two milk custard'

In short, Spanish mass noun constructions split into two Basque constructions. The Basque (measure phrase) counterparts of Spanish constructions denoting a measure, i.e. those that denote a part of the whole mass, are expressed in constructions headed by a mass noun that can only express a part of the whole by means of unit nouns (*litro* 'litre'), parts extralinguistically considered as the smallest unit (*molekula* 'molekula') or portions held in containers (*botila* 'bottle'). The Basque counterparts of Spanish constructions denoting other thematic relations with respect to a mass term are compounds headed by several nouns such as (*esne*) *flan* 'custard (of milk)', (*esne*) *orban* 'stain (of milk)'. Container nouns can head compounds having both container and content readings. *Molekula* heads compounds which in syntax obtain readings identical to those of their measure phrase counterparts. Thus part/whole readings are available for Basque measure phrases but sometimes they can be expressed by compounds. All of the other relations are expressed by compounds.

3.2. Specific-content readings in Basque compounds

The Basque compound words described in 3.1 show the same distribution of the determiner and (non-)specific readings as Basque standard noun phrases (→§1, §2.3). Determinerless counterparts (70) bear a non-specific reading for both content and container readings. The verb may take either a singular or a plural marker:

- (70) a Bi xanpain-botila edan dugu/ditugu
 two champagne bottle drunk it-have-we/ them-have-we
 lit. 'We have drunk two champagne bottle'
 'We have drunk two bottles of champagne'
- b Bi xanpain-botila apurtu dugu/ditugu
 two champagne bottle broken it-have-we/ them-have-we
 lit. 'We have broken two champagne bottle'
 'We have broken two bottles of champagne'

Counterparts with the determiner and the plural marker bear a specific reading for both content and container interpretations. The verb must take a plural marker:

- (71) a Bi xanpain-botilak edan ditugu/*dugu
 two champagne bottle_{pl} drunk them-have-we/*it-have-we
 lit. 'We have drunk the two champagne bottle'
 'We have drunk the two bottles of champagne'

- b Bi xanpain-botilak apurtu ditugu/*dugu
 two champagne bottle_{pl} broken them-have-we/*it-have-we
 lit. 'We have broken the two champagne bottle'
 'We have broken the two bottles of champagne'

A nude numeral with (73) and without (72) a determiner is also allowed:

- (72) a Bi edan dugu/ditugu
 two drunk it-have-we/them-have-we
 'We have drunk two'
- b Bi apurtu dugu/ditugu
 two broken it-have-we/them-have-we
 'We have broken two'
- (73) a Biak edan ditugu/*dugu
 two-the_{pl} drunk them-have-we/*it-have-we
 lit. 'We have drunk the two'
- b Biak apurtu ditugu/*dugu
 two-the_{pl} broken them-have-we/*it-have-we
 lit. 'We have broken the two'

In short, Basque compounds headed by a container noun may bear a specific-content reading by means of the determiner *-a* and plural markers, which are not available for Basque measure phrases.

4. Summary

The bibliography has shown that readings of constructions in human languages have no one-to-one relation with the constituent understood as the syntactic or morphological head. Exploring possessive relations between nouns, Castillo (2001) claims that nouns are not divided into rigid classes but instead take mass or count readings mainly depending on whether number is expressed syntactically. Furthermore, Castillo develops a theory based on a modular conception of grammatical categories so that (constructions headed by) mass nouns belong to a lower class that only accepts mass readings, whereas (constructions headed by) other count items such as part nouns appear in instantiations of both mass/content and container readings.

This paper shows that although it is true that readings have no one-to-one relation with the syntactic head, on the other hand it is the head that determines the set of available readings. The constructions called measure phrases are not syntactically the same in all languages. Spanish phrases with a prepositional phrase bearing a mass noun as a complement can express several thematic relations by means of several nominal heads. Spanish measure phrases are headed by container nouns, which allow either a container (ib) or a part-content (ia) reading.

- (i) a Hemos bebido dos botellas de cerveza
 have-we drunk two bottle_{pl} of beer
 'We have drunk two bottles of beer'

- b Hemos roto dos botellas de cerveza
 have-we broken two bottle_{pl} of beer
 'We have broken two bottles of beer'

Some other thematic relations allowed in Spanish constructions do not fulfil the requirements of verbs such as *beber* 'to drink':

- | | | | |
|--------|--|---|--|
| (ii) a | flan de leche
custard of milk
lit. 'custard of milk'
'Milk custard' | b | mancha de leche
stain of milk
lit. 'Stain of milk'
'Milk stain' |
|--------|--|---|--|

Spanish constructions headed by mass nouns take a reading related to the mass noun:

- (iii) Hemos bebido dos cervezas de botella
 have-we drunk two beer_{pl} of bottle
 lit. 'We have drunk two beers of bottle'
 'We have drunk two bottled beers'

On the other hand, the Basque measure phrase consists of a numeral and a part/container noun, which is located to the left of the bare mass noun (iv). Unlike Spanish counterparts, Basque measure phrases only allow a part-content reading:

- | | | | |
|--------|--|---|--|
| (iv) a | bi edalontzi esne
two glass milk
lit. 'Two glass milk'
'Two glasses of milk' | c | bi litro esne
two litre milk
lit. 'Two litre milk'
'Two litres of milk' |
| b | bi katilukada esne
two cupful milk
lit. 'Two cupful milk'
'Two cupsful of milk' | d | bi molekula ur
two molecule water
lit. 'two molecule water'
'Two molecules of water'
'Two water molecules' |
| e | [[bi edalontzi] _{XP} esne _N] _{NP} | | |

Finally, Basque has other constructions headed by mass nouns which, similarly to those of Spanish in (iii), only accept a content reading:

- (v) Bi botilako garagardo edan dugu/ditugu
 two bottle-of beer drunk it-have-we/them-have-we
 lit. 'We have drunk two beer of bottle'
 'We have drunk two bottled beers'

Basque measure phrases barely take article-related specific readings. They are just instantiations of a count use of items generally considered mass terms and they never bear any other reading. This can be seen in the plural agreement marker required in the verb. This contrasts with mass readings that require the singular agreement marker in the verb.

Thematic relations based on nouns such *orban* 'stain' and *flan* 'custard' are expressed by Basque compounds headed by these nouns:

- | | | | |
|--------|--|---|---|
| (vi) a | esne-orban
milk stain
'Milk stain' | b | esne-flan
milk custard
'Milk custard' |
|--------|--|---|---|

Basque also allows a compound word headed by a container word that can take either a container or a content/part reading:

- | | | | |
|---------|---|---|---|
| (vii) a | esne-katilu
milk cup
lit. 'Milk cup'
'Cup of milk' | b | bi esne-katilu
[[bi] _{XP} [esne _N katilu _{N,N}] _{NP}
lit. 'Two milk cup'
'Two cups of milk' |
|---------|---|---|---|

Furthermore, article-related specific readings are allowed in structures based on compounds.

- (viii) Bi esne-katiluak edan dugu/ditugu
Two milk cup-the_{pl} drunk it-have-we/them-have-we
lit. 'We have drunk the two milk cups'
'We have drunk the two cups of milk'

Bibliography

- Artiagoitia, X., 1998, 'Determinatzaile Sintagmaren Hipotesia Euskal Gramatikan'. *Uztaro* 27, 33-61.
- , 2000, *Hatsarreak eta parametroak*. Euskal Herriko Unibertsitatea.
- , 2002, 'The functional structure of the Basque noun phrase'. Erramu Boneta: *Festschrift for Rudolf P.G. de Rijk*. Supplements of *International Journal of Basque Linguistics and Philology*, pp. 73-90.
- Azkarate, M., 1990, *Hitz elkartuak euskaraz*. Mundaiz. Donostia.
- Bosque, I., 1999, '1. El nombre común' *Gramática descriptiva de la lengua española*. Real Academia Española. Espasa. Madrid.
- Castillo, J. C., 2001, *Thematic relations between nouns*. PhD. University of Maryland.
- Euskaltzaindia, 1985, *Euskal Gramatika. Lehen urratsak*. Iruñea, 1991.
- Estopà, R., 1996, 'Noms que forment part d'un determinant complex'. *Séries monographiques*. Universitat Pompeu i Fabra. Barcelona.
- Grimshaw, J., 1990, *Argument structure*, The MIT Press, Cambridge.
- Laka, I., 1993, 'The structure of inflection: A case study on X^o Syntax' in J. I. Hualde & J. Ortiz de Urbina (eds.), *Generative Studies in Basque Syntax*: 21-70. Amsterdam, John Benjamins.
- Laka, I., 1995, *A Brief Grammar of Euskara, the Basque Language*. www.ehu.es/grammar.
- Odrizola, J. C. & M. Martínez, 2003, 'Kimikako erreakzioen irakurbidea eta idazkera'. *Ekaia* 17, 107-19.
- Sánchez, C., 1999, '16. Los cuantificadores: clases de cuantificadores y estructuras cuantificativas'. *Gramática descriptiva de la lengua española*. Real Academia Española. Espasa. Madrid.
- Trask, L., 2001, '3.1. The noun phrase: Nouns, determiners and modifiers; pronouns and names'. *A Grammar of Basque*. J. I. Hualde and J. Ortiz de Urbina (eds.) (in press).
- Wiese, H., 1999, 'Empty classifiers in German: A cross-linguistic approach to restaurant talk'. *Germanic Linguistics Annual Conference*. Austin, Texas.