

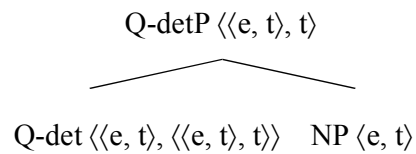
## CHAPTER 2

### CONTEXTUALLY RESTRICTED QUANTIFICATION

#### 2.1. Introduction:

As mentioned in Chapter 1, the standard analysis of quantification claims that the compositionality of a generalized quantifier, which denotes a set of sets, comes from combining a quantificational determiner with a Noun Phrase (NP) predicate (see Montague (1973), Barwise & Cooper (1981), Keenan & Stavi (1986)). In (1), the generalized quantifier (GQ) *every student*, which is of type  $\langle\langle e, t \rangle, t\rangle$ , results from the combination of the quantifier-determiner (Q-det) *every* of type  $\langle\langle e, t \rangle, \langle\langle e, t \rangle, t\rangle\rangle$  and the NP predicate *student* of type  $\langle e, t \rangle$ .

- (1) [Q-detP Every student]



Despite the wide acceptance this analysis has had in the formal semantic tradition, it has been noted that there are many languages that seem to lack the standard construction exemplified in (1). Matthewson (2001) (see also Jelinek (1995), Baker (1995), Marlett (2000) among others) argues that when submitted to crosslinguistic scrutiny, this analysis offers little comparative bite. Based on her analysis on St'át'imcets (a Lillooet Salish language) quantifiers, she proposes a new quantificational structure based on a two-step process where the quantifier combines with a Determiner Phrase (DP), not with an NP as the structure in (2b) shows.<sup>1</sup>

(2a) [QP *tákem* [DP *i* [NP *smelhmúlhats*]-a]]  
 [ all [ D.pl [ woman (pl)] -D]]  
 'All (of) the women'

(2b) [QP Q [DP D [NP N ]]]

In a recent paper, Giannakidou (2004) argues that Matthewson's central predictions can not be extended crosslinguistically. She argues that the Q-detP internal D is a nominal domain restrictor and that languages differ with respect to whether they overtly or covertly restrict their quantificational domain (see also Etxeberria (2004a)). As a consequence, she concludes (contra Matthewson (2001)) that the standard analysis of GQs can perfectly explain quantificational facts crosslinguistically.

In line with Giannakidou (2004), this chapter proposes a compositional analysis of Basque strong quantifiers and provides further support for the conclusion that the standard analysis of GQs is correct. With that aim, first Basque quantificational data

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<sup>1</sup> See next section for an extended presentation of Matthewson (2001)'s analysis.

will be offered, which provide clear evidence for the need of both nominal -with strongly interpreted weak quantifiers (see §2.6.1.2.- (Stanley (2002), Stanley & Szabó (S&S) (2000a)) as well as Q-det domain restriction -with lexically strong quantifiers (see §2.6.1.1.- (Westerståhl (1985), von Stechow (1994), Martí (2003)) and shows that Giannakidou's analysis must be correct. Crucially in Basque, the D domain restrictor (-A) only appears with strong quantifiers (lexically strong and strongly interpreted weak quantifiers), but is excluded from weak-cardinal quantifiers. This must be taken as evidence for the fact that these elements are neither quantifiers nor contextually restricted (cf. Milsark (1979), Partee (1988), Diesing (1992), Cooper (1996), von Stechow (1998)). The compositional behaviour of Basque weak quantifiers is presented in Chapter 3).

The chapter is organised as follows: Section 2.2 introduces Matthewson (2001)'s revision of Generalized Quantifier Theory. In section 2.3, some major problems with that proposal are presented. In section 2.4 I discuss two approaches that propose that the domain of quantification is contextually restricted by covert domain variables at LF and I argue (following Giannakidou (2004)) that both approaches are needed to account for the crosslinguistic quantificational data. Section 2.5 presents Giannakidou (2004)'s alternative proposal to Matthewson, where the Q-detP internal D is analysed as an overt contextual restrictor. In section 2.6 I present Basque quantificational data, which provides clear evidence for the necessity of both Q-det domain restriction as well as nominal domain restriction. Section 2.7 concludes the Chapter.

## 2.2. Generalized Quantifiers à la Matthewson (2001):

Matthewson (2001) questions whether the standard analysis of Generalized Quantifiers can be extended to cover the richness and variability shown by different natural languages.

After analyzing St'át'imcets, Matthewson (2001) notes that constructions paralleling the typical English case in (1) are systematically ungrammatical in this language and challenges the standard analysis of Generalized Quantifiers.

In St'át'imcets all argumental phrases require the presence of an overt Determiner (D). The omission of D results in ungrammaticality as the examples in (3), (4) and (5) show.

(3a) q'wez-ílç [ti smúlhats-a]<sup>2</sup>  
dance-intr. [D.sg woman-D]  
'The/one woman danced.'

(3b) \* q'wez-ílç [smúlhats]  
dance-intr. [woman]

(4a) léxlex [i semlhmúlhats-a]  
intelligent [D.pl woman-D]  
'The/some women are intelligent.'

(4b) \* léxlex [semlhmúlhats]  
intelligent [woman.pl]

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<sup>2</sup> All the St'át'imcets examples as well as the glosses and the translations in this chapter are copied from Matthewson (1999, 2001).

- (5a) wa7 ts'aqw-an'-ítas [i t'éc-a] [i míxalh-a]  
 prog eat-tr-3pl.erg [D.pl sweet-D] [D bear-D]  
 'The/some bears eat honey.'
- (5b) \* wa7 ts'aqw-an'-ítas [t'éc] [míxalh]  
 prog eat-tr-3pl.erg [sweet] [bear]

On the other hand, Ds can not appear with predicates, which must obligatorily lack a D. While the example in (6a), without the D, is completely grammatical; the example in (6b) is out.

- (6a) kúkwpi7 [kw-s Rose]  
 chief [D-nom Rose]  
 'Rose is a chief.'
- (6b) \* [ti kúkwpi7-a] [kw-s Rose]  
 [D chief – D] [D-nom Rose]

What the St'át'imcets examples in (3-6) illustrate is that in this language arguments are Determiner Phrases while nominal predicates are Noun Phrases.

Another property of St'át'imcets is that quantifiers in argumental phrases must always appear with determiners; as a result, arguments can not be of the form [Q NP] and the quantifier must always be sister to a DP.

- (7a) Léxlex [tákem i smelhmúlhats-a]  
 intelligent [all D.pl woman(pl)-D]  
 'All (of) the women are intelligent.'
- (7b) \* léxlex [tákem smelhmúlhats]  
 intelligent [all woman(pl)]

- (8a) Úm'-en-lhkan [zi7zeg' i sk'wemk'úk'wm'it-a] [ku kándi]  
 give-tr-1sg.subj [each D.pl child(pl)-D] [D candy]  
 'I gave each of the children candy.'
- (8b) \* Úm'-en-lhkan [zi7zeg' sk'wemk'úk'wm'it] [ku kándi]  
 give-tr-1sg.subj [each child(pl)] [D candy]
- (9a) [Cw7it i smelhmúlhats-a] léxlex  
 [many D.pl woman(pl)-D] intelligent  
 'Many of the women are intelligent.'
- (9b) \* [Cw7it smelhmúlhats] léxlex  
 [many woman(pl)] intelligent

Matthewson (2001: 152) argues that “all determiners (in St’át’imcets) which combine with quantifiers necessarily introduce variables over choice functions<sup>3</sup> (see Matthewson (1999)). Thus, these determiners apply to NPs of type  $\langle e, t \rangle$  and choose one (singular or plural) individual from the set denoted by the NP predicate. DPs containing these determiners are therefore of type  $e$ ”. Furthermore, Matthewson (1999) argues that choice functions must always be closed at the highest level (i.e., with widest scope).

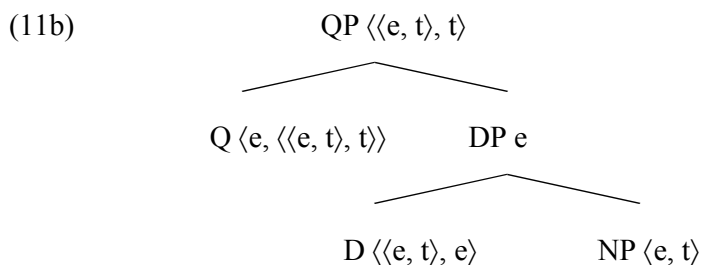
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<sup>3</sup> A choice function can be defined as follows: A function  $f$  is a choice function if it applies to any non-empty set and yields a member of that set. See also Reinhart (1997), Winter (1997), Kratzer (1998), and references therein. Reinhart (1997) and Winter (1997) defend that choice function variables can be bound at any level. On the other hand, Kratzer (1998) says that choice function variables remain free at LF and must be interpreted through context. This gives rise to wide-scope effects for choice function indefinites. According to Winter (1997), indefinites are always interpreted by means of choice function, while Reinhart (1997) --only suggests-- and Kratzer (1998) defend that indefinites are ambiguous between a choice function interpretation and a generalized quantifier interpretation. See Geurts (2001a) for arguments against Choice Functions.

- (10) a. q'wez-ílç [ti smúlhats-a] (Matthewson 2001: 152)  
 dance-intr. [D.sg woman-D]  
 'The/a woman danced.'
- b. danced (f(woman))
- c. Paraphrase: the woman who is chosen from the set of women by the contextually salient function f danced.

Based on all these data, Matthewson (2001) concludes (as we said before) that the standard analysis of Generalized Quantifiers (where quantifiers combine with  $\langle e, t \rangle$  type nominal predicates) can not account for the St'át'imcets quantificational facts and proposes a new compositional structure according to which quantification in natural languages must proceed in two steps. First, the Determiner of type  $\langle \langle e, t \rangle, e \rangle$  combines with the NP predicate of type  $\langle e, t \rangle$  to create an individual-denoting element; and in a second step, the resulting  $e$  type entity is taken as an argument by the Q-det (which is of type  $\langle e, \langle \langle e, t \rangle, t \rangle \rangle$ ), this last combination is the one that yields the generalized quantifier of the standard type  $\langle \langle e, t \rangle, t \rangle$  (see Matthewson (1998)).

- (11a) [QP zi7zeg' [DP i [sk'wemk'úk'wm'it]-a]]  
 [ each [ D.pl [child(pl) ]-D]]  
 'each of the children'



Matthewson (2001) assumes that there is no variation in the semantics of natural languages<sup>4</sup> and tries to apply her analysis crosslinguistically.

One of the problems that the ‘no variation hypothesis’ (following Matthewson’s terminology) has to face is that of partitive constructions such as those in (12).

(12a) Many of the students are on holidays.

(12b) Most of the politicians spoke in riddles.

(12c) Some of the teachers arrived late

Ladusaw (1982: 233) assumes “that quantifier determiners have the same denotation in Partitive NPs as they do in simple NPs” and proposes that partitive *of* is inserted to ensure that the Q-det receives an argument of type  $\langle e, t \rangle$ . What the partitive *of* makes is change the individual (type  $e$ ) denoted by the DP into a set of type  $\langle e, t \rangle$ , the correct input for the Q-det to quantify over.

(13)  $[[\text{of NP}]] = g(a)$  if  $[[\text{NP}]] = I_a$ ; undefined otherwise.

In (13),  $g$  is a ‘consist of’ function which takes any group-level individual and returns the set of atoms corresponding to the generator set<sup>5</sup>. *Of the students* is then the same

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<sup>4</sup> This goes against the so-called ‘transparent mapping’ hypothesis where there is no requirement for all languages to share the same semantics and a wide range of semantic variation is permitted (see Partee (1995), Jelinek (1995)).

<sup>5</sup> Szabolcsi (1997b: 14): Generalized Quantifiers with a non-empty unique witness set are called principal filters, and their unique witness  $A$  the generator set:

- (i) A Generalized Quantifier is a principal filter iff there is a set of individuals  $A$  such that  $A$  is not necessarily empty and for any set of individuals  $X$ ;  $X \in \text{GQ}$  iff  $A \subseteq X$

type of object as *students*, but instead of denoting the set of all students it denotes the set of all contextually relevant students.

However, if according to Matthewson (i) Q-dets combine directly with entities of type *e*, and (ii) there should be no semantic variation across different languages, Ladusaw's explanation must be rejected. Thus, Matthewson (2001) proposes that *of* is semantically vacuous; an alternative that makes the partitive construction (e.g. *many of the students*) parallel to the St'át'imcets structure where the Q-det combines with the DP and quantifies over the individual of type *e*. This assumption dispenses with Ladusaw's 'consist of' function.

According to Matthewson (2001: 161): "the semantic vacuity proposal raises the question of why the *of* should be there at all. An obvious possibility is that it is there for case reasons". Furthermore, the fact that St'át'imcets (a language that lacks the *of* element in partitives) lacks overt case marking supports the claim that *of* is there only for case reasons.

Summing up, the following are the basic features of St'át'imcets nominal quantificational elements that are of relevance to this chapter:

- (i) The same Ds (*ti...a* for singular, *i...a* for plural) create DPs that initially can be definite or indefinite (see examples (3), (4), (5) and (10)).
- (ii) DPs are always of argumental type, and as a consequence, they are never used as predicates (see example (6)).
- (iii) DPs are existentially closed at the highest level (see Matthewson (1999)).

- (iv) Q-dets must be combined with a Determiner Phrase (DP), not with a Noun Phrase (NP).
- (v) St'át'imcets lacks the *of* partitive preposition in partitive constructions.

### **2.3. Problems with Matthewson's Analysis:**

Giannakidou (2004) argues that Matthewson (2001)'s central predictions are problematic and can not be extended crosslinguistically:

#### **2.3.1. St'át'imcets DP Interpretation:**

According to Matthewson, in this language, Ds create DPs that initially can be definite or indefinite.

(14a) q'wez-ílç [ti smúlhats-a] (=3a)  
 dance-intr. [D.sg woman-D]  
 'The/a woman danced.'

(14b) danced (f(woman))

(14c) Paraphrase: the woman who is chosen from the set of women by the contextually salient function f danced.

(15) wa7 ts'aqw-an'-itas [i t'éc-a] [i míxalh-a] (=5a)  
 prog eat-tr-3pl.erg [D.pl sweet-D] [D bear-D]  
 'The/some bears eat honey.'

(15b) eat honey (f(bear))

(15c) Paraphrase: the bears that are chosen from the set of bears by the contextually salient function  $f$  eat honey.

Since there is no definiteness/indefiniteness contrast in St'át'imcets determiners, Matthewson (1999), (2001) decides to treat them as indefinites interpreted as a choice function existentially closed at the highest level (see Matthewson (1999: 109))<sup>6</sup>. This treatment however makes them equivalent to definites: A choice function interpreted at the highest level is equivalent to a referential DP (see the paraphrases offered in (14c) and (15c)<sup>7</sup>). That is, a DP that denotes a contextually salient choice function should be taken to be a definite rather than an indefinite (see section 2.5 for Giannakidou's reanalysis of these facts in terms of domain restriction).

Furthermore, as has been mentioned in the previous section, Matthewson's analysis makes the prediction that St'át'imcets DPs must always be interpreted as entities of type  $e$  and do never type-shift to type  $\langle e, t \rangle$  (predicative) or type  $\langle \langle e, t \rangle, t \rangle$  (quantificational). This goes against well established facts defended in Partee (1987), where it is shown that natural language DPs (both definites and indefinites) can freely type-shift to both predicative (by means of  $\text{Id}$ <sup>8</sup>) and quantificational type. Within Partee's system there is a natural map between individuals and predicates, i.e. sets containing them.

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<sup>6</sup> That the choice function must close at the highest level is something that Matthewson (1999) particularly argues for St'át'imcets. Other scholars claim that the choice function can be interpreted at almost any level in order to account for intermediate scopal interpretations (see e.g. Reinhart (1997), Winter (1997), Kratzer (1998)).

<sup>7</sup> The paraphrase (14c) is copied from Matthewson (2001: 152); the one in (15c) has been derived following the previous paraphrase.

<sup>8</sup>  $\text{Id}: e \rightarrow \langle e, t \rangle$ :  $\text{Id}(x) = \lambda x[x \leq y]$  or  $\lambda x[x = y]$  in case  $x$  is a singularity.  $\text{Id}$  takes an individual (singular or plural) and turns it into the set that consists of the single individual identical to that individual. It undoes what  $\iota$  did via the 'part of' for plurals, and the identity relation for singulars.

### 2.3.2. Q-dets Do Not Usually Combine with Definites:

Matthewson's proposal (in (11b)) also predicts that Q-dets should be able to combine with definites crosslinguistically. Nonetheless, as the examples in (16), (17), (18) and (19) (from English, Spanish, Catalan and Greek respectively) show, the prediction is not borne out and the majority of quantifiers can not combine with a DP argument.

English:

- |                        |                     |
|------------------------|---------------------|
| (16a) * every the boy  | (16f) all the boys  |
| (16b) * most the boys  | (16g) only the boys |
| (16c) * many the boys  |                     |
| (16d) * three the boys |                     |

Spanish:

- |                                                        |                                          |
|--------------------------------------------------------|------------------------------------------|
| (17a) * cada los chicos<br>lit.: 'each the boys'       | (17f) todos los chicos<br>'all the boys' |
| (17b) * la mayoria los chicos<br>lit.: 'most the boys' | (17g) solo los chicos<br>'only the boys' |
| (17c) * muchos los chicos<br>lit.: 'many the boys'     |                                          |
| (17d) * tres los chicos<br>lit.: 'three the boys'      |                                          |

Catalan<sup>9</sup>:

- |                                                      |                                         |
|------------------------------------------------------|-----------------------------------------|
| (18a) * cada els nois<br>lit.: ‘each the boys’       | (18f) tots els nois<br>‘all the boys’   |
| (18b) * la majoria els nois<br>lit.: ‘most the boys’ | (18g) només els nois<br>‘only the boys’ |
| (18c) * molts els nois<br>lit.: ‘many the boys’      |                                         |
| (18d) * tres els nois<br>lit.: ‘three the boys’      |                                         |

Dutch<sup>10</sup>:

- |                                                            |                                            |
|------------------------------------------------------------|--------------------------------------------|
| (19a) * elke de jongen<br>lit.: ‘each the boys’            | (19f) al de jongens<br>‘all the boys’      |
| (19b) * de meerderheid de jongens<br>lit.: ‘most the boys’ | (19g) alleen de jongens<br>‘only the boys’ |
| (19c) * veel de jongens<br>lit.: ‘many the boys’           |                                            |
| (19d) * drie de jongens<br>lit.: ‘three the boys’          |                                            |

Greek (Giannakidou (2004)):

- |                                                       |                                          |
|-------------------------------------------------------|------------------------------------------|
| (20a) * kathe to aghori<br>lit.: ‘every the boy’      | (20d) ola ta agoria<br>‘all the boys’    |
| (20b) * merika ta aghoria<br>lit.: ‘several the boys’ | (20e) mono ta aghoria<br>‘only the boys’ |
| (20c) * tria ta aghoria<br>lit.: ‘three the boys’     |                                          |

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<sup>9</sup> Sergi Garcia and Angel J. Gallego (p.c.)

<sup>10</sup> Gretel de Cuyper (p.c.)

The grammatical examples in (16-17-18-19-20) are formed exclusively with *all* and *only*; elements that have been argued not to be quantifiers. For *all*, it has been said that it is a DP modifier with the semantics of an exhaustivity operator<sup>11</sup> (Brisson (1998, 2003))<sup>12</sup>, and for *only*, that it is a propositional operator (von Stechow (1997)). Note that many of the ungrammatical constructions above become automatically grammatical as soon as we introduce the partitive *of* (most of the boys, many of the boys, three of the boys). This behaviour also extends to the other languages in the illustrative set.

### **2.3.3. Partitive ‘of’ Is Not Vacuous:**

If Q-dets combine directly with entities (type *e*), *of* (e.g. in *many of the students*) as pointed out in section 2.2, must be semantically vacuous (contra Ladusaw (1982) where *of* ensures that the Q-det receives an input of type  $\langle e, t \rangle$ ), so that the crosslinguistic structure of quantification parallels St’át’imcets structure.

According to Matthewson (2001) the presence of the partitive preposition *of* in constructions such as (21) is only due to case reasons.

(21a) Many of the politicians did not tell the truth.

(21b) Some of the policemen dedicated the whole day to fine drivers.

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<sup>11</sup> Giannakidou (2004) has claimed that *all* is ambiguous between the DP modifier exhaustivity operator (à la Brisson) just described and the real quantificational (partitive) form *all of the NP*.

<sup>12</sup> In section 2.6.2.3 some occurrences of Basque *all* are argued to be analysable in Brisson (1998, 2003)’s terms.

However, this assumption is problematic: to begin with, *of* seems to be optional in some constructions, and this should not be so if the partitive preposition *of* is there only for case reasons.

(22a) all (of) the boys

(22b) half (of) the boys

(22c) both (of) the boys

In addition to this problem, Adams (2005b)<sup>13</sup> also poses a very interesting problem to Matthewson's analysis. Adams' analysis concentrates on Zulu (a Bantu language from South Africa) where there are no overt articles on nouns to show definiteness or indefiniteness, and as a consequence, they can be interpreted as definite or indefinite depending on context. (Examples taken from Adams (2005b: 1-2) with morphological breakup).

(23) Aba-fana ba-ya-dla.  
cl2-boy cl2-pres-eat  
'(The) boys are eating.'

(24) Um-fama u-ya-dla.  
cl1-boy cl1-pres-eat  
'A/The boy is eating.'

It is also possible to mark contextual restriction overtly in Zulu by means of demonstratives.

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<sup>13</sup> Thanks to Nikki Adams for bringing the Zulu as well as Lomongo data to my attention.

- (25) Laba-ba-fana ba-ya-dla.  
 cl2these-cl2-boy cl2-pres-eat  
 ‘These boys are eating.’

Partitive constructions in Zulu are used when an entity (*e* type element) is created overtly (e.g. *these boys*) or when the entity type is created covertly (through context). A quantifier can not combine directly with a type *e* element, as the following examples clearly show.

- (26) ?? Aba-ningi laba-ba-fana ba-ya-dla.  
 cl2-many cl2these-cl2-boy cl2-pres-eat  
 Lit.: ‘Many these boys are eating.’

- (27) \* Ezi-nye lezo-zi-nyoni zi-ya-cula  
 cl10-one cl10those-cl10-bird cl10-pres-sing  
 Lit.: ‘Some those birds are singing.’

According to Matthewson (2001), demonstratives (just like definite determiners) create *e* type elements, exactly the type that she claims quantifiers take as arguments crosslinguistically. However, the examples in (26) and (27) show that Zulu does not support this claim. Zulu also provides evidence for the fact that it is undesirable to maintain that *of* is there just for case reasons. Note that the following sentences are both grammatical.

- (28) Aba-fana aba-ningi ba-ya-dla.  
 cl2-boy cl2-many cl2-pres-eat  
 ‘Many boys are eating.’
- (29) Aba-ningi **b**-aba-fana ba-ya-dla  
 cl2-many cl2part-cl2-boy cl2-pres-eat  
 ‘Many of the boys are eating.’

The grammaticality of (28) and (29) shows that if the only role of the partitive preposition *of* is to assign case to the NP, it is unexpected that both sentences should be correct. Otherwise, we would have to claim (Adams (2005b: 4) “one of two things: that (i) this case is optionally checked in Zulu, which is not a generally acceptable syntactic statement or (ii) that is somehow required for a contextually-restricted NP but not for a non-contextually-restricted NP, also a very strange-sounding case”. This last statement can not be correct since there are quantifiers like *-nke* (=all) (in opposition to other quantifiers like *-ningi* in (29)) that are able to take contextually restricted NPs (e.g. *these NP*) but do not accept the partitive.

Furthermore, as we said in section 2.2, Matthewson (2001) defends the claim that the fact that St’át’imcets (a language that lacks the *of* element in partitives) lacks overt case marking supports the claim that *of* is there only for case reason. Zulu, just like St’át’imcets, lacks overt case marking but contra Matthewson’s assumption it possesses a partitive.

#### 2.3.4. Episodic *Most* and Contrast with *All*

According to Matthewson, non-partitive *all* and *most* contain bare NPs that can only be kind denoting (*e*-type arguments) in order for the Q-det to get the correct input.

(30a) Most football players are millionaires.

√ GENERIC

(30b) All football players are millionaires.

√ GENERIC

But this is not the only interpretation that non-partitive *most* or *all* may get as the following examples show.

(31a) Most golf players at yesterday's party were millionaires.

√ EPISODIC

(31b) ? All golf players at yesterday's party were millionaires.<sup>14</sup>

√ EPISODIC

Cooper (1996) claims that the difference between *most NP* and *most of the NP* is that the former can not be restricted to a particular situation in opposition to what happens with the latter. However, von Stechow (1998) shows that in fact, *most NP* can be restricted and need not always create non-restricted generic interpretations as the following example shows.

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<sup>14</sup> Not every English speaker agrees with the fact that sentence (31b) is not entirely natural. Thanks to Richard Larson and Bill Haddican (p.c.).

- (32) On our school trip, almost everyone stayed up late on the first night. The next morning, as was to be expected, the teachers were at the bus on time, but **most students** arrived late.

*Most students* in (32) is clearly non-generic since it makes reference to the students of the school trip. Thus, the episodic interpretation seems to be the only available interpretation in the case at hand.

The second prediction is that languages without kind denoting bare plurals will not allow *all/most* with bare NP arguments. Giannakidou provides Greek data to show that this prediction can not be on the right track. Greek does not possess kind denoting bare plurals, but still, *i perissoteri* (=most) allows both generic as well as episodic interpretations even when there is no D present as is the case in (33a)<sup>15</sup>.

- (33a) I perissoteri (i) fitites doulevoun sklira  
 D.pl most (D.pl) students work.3pl hard  
 Most students work (imperfective) hard  
 √ GENERIC

- (33b) I perissoteri (i) fitites efigan noris  
 D.pl most (D.pl) students left.past.perfective.3pl early  
 Most students left (perfective) early  
 √ EPISODIC

<sup>15</sup> Note that aspect (imperfective in (33a) and perfective in (33b)) plays a very important role in the interpretations that the sentences in (33) obtain. This observation seems to be valid for generic and episodic interpretations in general: *students* in example (i) is necessarily interpreted as generic, while in (ii) the interpretation we get is episodic (existential).

- (i) John works with students.  
 (ii) John is working with students.

### 2.3.5. Variable Position of Q-det and D

Languages show evidence for both [Q-det D] and [D Q-det] constructions so that it is not the case that an *e* type DP is always complement to the Q-det as Matthewson's analysis claims.

Although the majority of the St'át'imcets quantifiers combine with a DP argument (34a-b), Matthewson also presents some data where her own quantificational structure does not seem to be obeyed, see (35a), (35b) --both with strong quantifiers-- and (35c) --with weak quantifiers that receive wide scope interpretations--.

- (34a) *tákem i smelhmúlhats-a* [Q-det D]  
all D.pl woman(pl)-D  
Translated: all the women
- (34b) *zi7zeg' i sk'wemk'úk'wm'it-a* [Q-det D]  
each D.pl child(pl)-D  
Translated: each of the children
- (35a) *i tákem-a smúlhats* [D Q-det] (Matthewson 2001: fn.5)  
D.pl all-D woman  
Translated: all the women
- (35b) *i zi7zeg'-a sk'wemk'úk'wm'it* [D Q-det] (Matthewson 1999: 41c)  
det.pl each-det child(pl)  
Translated: each child
- (35c) *i nxwexw7útsin-a twéw'w'et* [D Q-det] (Matthewson 1999: 15)  
D.pl four(HUM)-D boy  
Translated: four boys

As Giannakidou (2004) shows, it is also possible to find examples in Greek where the Q-det appears under D as in (36b).

- (36a) Oli i fitites [Q-det D]  
 all det.pl students  
 Translated: all the students
- (36b) O kathe fititis [D Q-det] (Giannakidou 2004: 32b)  
 det.sg each students  
 Translated: each student

Basque also provides evidence in favour of the existence of these two constructions: Lexically strong Q-dets (see Etxeberria (to appear) as well as section 2.6.1.1.), and not their nominal arguments, are composed directly with the D in opposition to what Matthewson claims<sup>16</sup>.

- (37a) Mutil **guzti-ak** [Q-det D]<sup>17</sup> (=D Q-det)  
 boy all-D.pl

<sup>16</sup> Marlett (2000) analyses the counterpart of English *all* in Seri. In this language, the equivalent of *all* can apparently combine with a DP as in (i), or else appear under D as in (ii).

- (i) Haxaca coi **cooxo** haxöl coi iyóiiitoj  
 dogs the all clams the they.ate.them  
 ‘All the dogs ate the clams.’
- (ii) Ihámoc quih **coox** cah ziix\_ccah quih cazíim quih cohmqécól  
 night the all the/focus music the that.is pretty the I.listen.to.it  
 ‘Every night I listen to pretty music.’

Initially it would seem as though this language also shows both orders: [Q-det D] and [D Q-det]. However, the example in (ii) makes use of two determiners (*quih* with the noun, *cah* with the Q-det), thus, it may be too premature to conclude that Seri’s quantification also shows both quantificational orders and it might well be the case that these constructions are explained following different strategies. Basque does also show similar constructions, and as we will see later (see section 2.6.2.3), they are analysed following Brisson (1998), (2001). Brisson’s analysis might also be applicable to Seri *all*.

<sup>17</sup> Note that Basque is a head-final language and that lexically strong quantifiers are formed by the combination of the [NP+Q-det+D] what in a head-initial language would be [D+Q-det+NP].

Lit.: 'boy all the(pl)'

Translated: all the students

(37b) Mutil **bakoitz-a**

[Q-det D] (=D Q-det)

boy each-D.sg

Lit.: 'boy each the(sg)'

Translated: each student

Observing the problematic facts about Matthewson's analysis, Giannakidou (2004) makes the following proposal:

- (i) Q-detP internal D is a (nominal) contextual restrictor (see also Etxeberria (2004)<sup>18</sup>),
- (ii) domain restrictors can also appear in Q-dets,
- (iii) languages differ with respect to whether they overtly or covertly restrict their quantificational domain,
- (iv) the standard generalized quantifier analysis can explain quantificational facts crosslinguistically.

Before we move on to expose the assumptions that are going to be made in this chapter and the details of the proposal, the next section (§2.4) presents possible analyses that have been offered in the literature to defend that contextual variables have a

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<sup>18</sup> Despite the problems and inadequacies of Etxeberria (2004), I do still believe (and so I defend) that the intuition that the Basque definite determiner restricts the quantificational domain -proposed for the first time in Etxeberria (2004a)- is correct.

syntactic (explicit or implicit) realization (one of the core assumptions of this dissertation).

#### **2.4. Contextual Domain Restriction (Contextual Variables):**

Contextual variables are elements of the semantic representation that receive a value from the context and play a major role in natural language quantification (realised as a simple variable *C* in (38), but see below). In this dissertation it is assumed that quantificational expressions are associated with contextual variables at LF in languages like e.g. English (cf. Partee (1989), Neale (1990), von Stechow (1994, 1998), Stanley (2000, 2002), S&S (2000), Martí (2003)) while in some other languages this contextual domain restrictor appears in the overt syntax (Etxeberria (2004), Giannakidou (2004))<sup>19</sup>.

Consider a situation like (38):

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<sup>19</sup> Note that the analysis in terms of contextual variables is not the only possible analysis in the semantic literature. Some authors explain the same facts making use of *situations* (see e.g. Kratzer (2004), Carlson & Storto (to appear)). Kratzer (2004) e.g. is worried about the fact that (i) the variable is claimed to appear with the Q-det by some authors and with the nominal by others (both ways being able to explain some facts but unable to explain both nominal and adverbial quantification) and, that (ii) apparently every natural language makes use of (only) covert domain variables since no language has been shown to have overt contextual domain restrictors. According to Kratzer these problems are solved if we assume situations (partial worlds) to be what restrict both nominal as well as adverbial quantification.

However, if as this dissertation (following Giannakidou (2004)) claims Q-detP internal Ds are contextual domain restrictors (i) we would have evidence for overt contextual domain restriction in many different languages, (ii) it could be possible to assume that nominal and adverbial quantification are distinct. In nominal quantification the contextual variable would appear in the nominal element by default (and sometimes in the Q-det -see §2.3.5 and §2.6.1.1-) while in adverbial quantification the contextual variable would appear in the adverb (*situations* would restrict the adverbial quantificational domain). Note that it is in fact no non-sense to take nominal and adverbial quantification to be different: Nominal quantification always subcategorizes a syntactic domain, relates set of individuals, and as a consequence the contextual variable need be a set of individuals. Adverbial quantification on the other hand comes with a domain from the context, it relates sets of situations, and the contextual variable will be a set of situations.

(38) [Speaker A is relating to speaker B the experiences of last night, when A and some of her students went out for a pizza]

A: Everybody<sub>C</sub> had a great time (von Fintel (1994: 28))

It is standard assumption that in (38), the speaker A does not intend to convey the idea that everybody, literally, had a great time; instead, a sentence like (38) refers to a contextually restricted set of individuals, those who went out for a pizza last night with A.

A common notational device for contextual variables is the one presented in the example (38) by means of a subscript C; according to this notation, C is of a simple nature. C can be free or bound (see Martí (2003) where she defends that the contextual variable C is a (silent) pronoun)<sup>20</sup>. In the example in (38) the contextual variable is free

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<sup>20</sup> Cappelen & Lepore (2002, 2005) argue that C can not be a pronominal element since it does not behave as such in that e.g. it does not enter into anaphoric relations (as overt pronouns do, see example (i)). However, Martí (2003: 58) claims (contra Cappelen & Lepore (2002, 2005)) that it is possible to maintain that C behaves as a pronominal element. She argues that although in the sentence in (ii) C can not enter into anaphoric relations (*it* can not make reference to C); when the potential covert pronoun is made overt, anaphoric relations are possible as the example in (iii) shows where *it* can be dependent on C. Examples taken from Martí (2003a: 58-59). “Hence, (ii) is not an indication that C is not a pronoun. What seems to be wrong with the example is that a referent for C must be provided (Martí (2003a: 60))”

- (i) He’s a senator, but nobody respects him.
- (ii) \* Many students failed, and *it* is a big domain.
- (iii) Many students in this domain failed, and it is a big domain.

According to Cappelen & Lepore (2005: Ch.7), there are some conditions that an element must fulfil in order to be considered context sensitive. They argue that there are very few elements that are contextually sensitive (indexicals such as e.g. *I, here*) and that quantificational expressions should not be grouped with them. One of the conditions that a contextually sensitive element must fulfil is that it must block disquotational indirect reports. For an element to be contextually sensitive it must shift its semantic value from one context of utterance to another. Cappelen & Lepore argue that C (Basque definite determiner in nominal quantificational expression --see §2.6-- ) can not be context sensitive since it never shifts its value from a context to another the way indexicals do. In (iv) nothing needs to be changed and the report is true.

- (iv) Maia: Every student came late.  
Aritz: Maia said that every student came late.

and refers to a contextually salient property, the property of having gone out for a pizza with A.

However, the C (associated with the quantifier in (39), but see below) can also be bound by a preceding quantificational expression.

(39) Most of John's classes were so good that every<sub>C</sub> student passed the exam.

In (39), the domain of the second quantifier expression varies with the values of the first quantifier expression. Thus, the most salient reading of this sentence is 'for most x such that x is a class of John's was such that x was so good that every student in x passed the exam'.

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- (v) *Basque:*  
Maia: Ikasle guzti**ak** berandu etorri ziren.  
student all-D.pl late come aux.past  
'All of the student came late.'  
Aritz: Maiak esan zuen ikasle guzti**ak** berandu iritsi zirela.  
Maia-erg say aux.past student all-D.pl late come aux.past-comp  
'Maia said that all of the student came late.'

Indexicals do not support Inter-Contextual Disquotational Indirect Reports.

- (vi) Maia: **I** came late.  
Aritz: \* Maia said that **I** came late.  
Maia said that **she** came late.

However, the fact that C (Basque definite determiner) does not behave as an indexical does not necessarily mean that C is not contextual. The relevant comparison class (von Stechow (1994), Martí (2003a)) are third person pronouns that show exactly the same behaviour as C in terms of disquotational indirect reports. In both sentences in (vi), *he* can have the same value and I'm sure Cappelen & Lepore don't want to say that *he* is not contextually sensitive:

- (vi) Maia: He came late.  
Aritz: Maia said that he came late.

Thus, it is perfectly possible that the way indexicals vary from one context of utterance to another is different to the way in which other elements vary from context to context. And it seems clear that something like 'every student' picks out different sets in different contexts as the example in (38) shows. See also Szabó (2005b: 7) "To sum up: I think Cappelen and Lepore present strong arguments against radical contextualism, but only a weak case against moderate contextualism". According to Szabó, quantifiers (such as *every*) are indeed context sensitive.

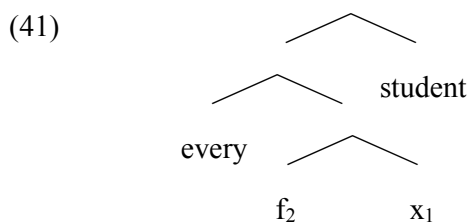
This reading, according to von Stechow (1998: 15), suggests that C can not just be a simple variable but that instead, it must have a more complex structure<sup>21</sup>:

$$(40) \quad C = f_i(x_j), i, j \in |N|$$

It will be composed of a free functor variable which takes an argument variable which in turn can be bound when another quantifier expression as in the example in (39) precedes it in the sentence. Therefore, the analysis of (39) will be as shown in (39')

(39') [Most of John's classes]<sub>1</sub> were so good that [every<sub>f<sub>2</sub>(x<sub>1</sub>) student] passed the exam.</sub>

The internal structure of a quantificational expression like *every student* would be as follows (Martí (2003a: 29))<sup>22</sup>:



<sup>21</sup> The complex structure of the contextual variable is accepted by every analysis (that assumes the existence of C) that is mentioned in this section. This structure is also assumed to be the correct representation for contextual variables in this dissertation. See Stanley (2002: 373) for arguments (mainly syntactic) in favour of the existence of the *functional* variable.

<sup>22</sup> Martí (2003) defends that adverbial quantification has the same structure. This dissertation does not treat adverbial quantification.

In (39'), the upstairs quantificational element (*most of John's classes*) binds the argumental variable (x1) of the complex contextual variable. Martí (2003b: 241): "The functional variable stays free and is assigned a salient function as its value (of type  $\langle e, \langle e, t \rangle \rangle$ ); a function that takes a class (of type  $e$ ) and gives back the set of individuals in that class (of type  $\langle e, t \rangle$ ). The functional variable takes the argumental variable as its argument and results in a set of individuals, which is intersected with the noun *student* via Predicate Modification".<sup>23</sup>

Up until now, the contextual variable C has been presented as being associated with the Q-det of the quantificational expression. One of the arguments in favour of the analysis that relates C to the Q-det comes from adverbial quantification (von Stechow (1994, 1998), Martí (2003)). In the example (42), the bound reading is available (only one summer x was so bad that all situations in which it rained during x were situations in which I missed the bus) but there are no nominal expressions present to which we could associate the contextual variable, since the quantificational element is an adverb (*always*).

- (42) Only one summer was so bad that, if it rained, I always missed the bus  
(Martí (2003: 36))

Yet, there is still an alternative possibility, one that associates the contextual variable to the nominal<sup>24</sup>. The alternative analysis that associates contextual variables to

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<sup>23</sup> According to Stanley (2002: 366) the intersection is done by means of set-theoretic intersection, and no Predicate Modification is mentioned.

<sup>24</sup> Pelletier (2003) argues that C should be associated with the whole Q-detP (i.e. *every student*)

the nominal is the one put forward by Stanley & Szabó (S&S) (2000a) and defended in Stanley (2002) and subsequent work.<sup>25</sup>

According to S&S (2000), a problem that the alternative supporting that the contextual domain variable is implemented in the quantifier, rather than in the nominal, would have to face are constructions involving cross-sentential anaphora.

(43) Most people regularly scream. They are crazy. (S&S (2000: 257))

S&S (2000: 257): “Suppose the domain is a set of things in a certain village. There are two anaphoric readings of the pronoun in the second sentence in (43). On the first reading, it refers to all the people in the village. On the second reading, it refers to those people in the village who regularly scream.”

The theories defending that the contextual variable is on the Q-det would have difficulties explaining the second reading because “ideally, one would wish to say that cross-sentential anaphora of this sort requires antecedents that are constituents of a preceding logical form. However, if the domain variable co-habits a terminal node with ‘most’, there is no single node in the logical form of the first sentence in (43) whose

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<sup>25</sup> In fact, Stanley & Szabó (2000a) consider many different approaches to how contextual information can give meaning to restricted quantificational domains and conclude that all but the one they defend (where they posit contextual variables at LF -semantic account-) are incorrect. Among those approaches they consider there is one where the contextual domain restrictor is associated to the whole Q-detP, but they discard it due to some compositional problems that this analysis would have to face (see Stanley & Szabó (2000a: 255)). Pelletier (2003) on the other hand, argues that C should be associated with the whole Q-detP (i.e. *most students*) since speakers have the intuition that it is the whole quantifier that is restricted and not just the Q-det or just the nominal. He argues against Stanley & Szabó (2000a)’s criticism to this approach claiming that if their analysis (where the domain restrictor is attached to the nominal) is compositional, so it is the one that he defends where C is associated with the whole Q-detP. Pagin (2005: fn.17) concludes: “however, since neither party of the debate clearly distinguishes between context dependence and context sensitivity, nor between different versions of compositionality for context dependence, it may well be that both are right in their way and that Pelletier misinterprets”. If Pelletier’s analysis turns out to be the correct one I don’t think that the analysis that is going to be proposed in this chapter would have to be changed radically.

associated semantic value is the set of people in the village” (S&S (2000:257)); in other words, since the contextual variable would be implemented in the Q-det there would be no possibility to refer back to the set of people in the village.<sup>26, 27</sup>

S&S (2000a) and Stanley (2000, 2002) generalize the use of contextual implicit variables to all common nouns<sup>28</sup>. Then, the nominal expression in combination with the contextual variable  $\langle \text{student}, f(i) \rangle$  of sentence (44a) would be analyzed as in (44b). This expression will then combine with the Q-det to create a generalized quantifier.

(44a) Every student failed the exam.

(44b)  $[\langle \text{student}, f(i) \rangle]_c = [\text{student}] \cap \{x: x \in c(f)(c(i))\}$  (S&S (2000: 253))

Thus, *every student* in (44a) refers to a contextually restricted set of students (not to the set of students in the whole world or in the universe) which results from intersecting the set of *students* with the set that results from applying the value given to  $f$  to the value given to  $i$  by the context. This intersection would give as a result the students in, say, Aristotle’s class.

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<sup>26</sup> See Stanley (2002: 372) for more arguments (attributed to Delia Graff) against the theory of implementing the contextual variable on the quantifier.

<sup>27</sup> Nothing is said in S&S (2000) about the way in which adverbial quantification should be treated. I guess they believe nominal quantification and adverbial quantification need not be analysed following the same pattern.

<sup>28</sup> The proposal that I am going to be put forward in this dissertation is in conflict with S&S (2000)’s as well as Stanley (2000, 2002)’s idea that all common nouns appear with a contextual implicit variable. As is made clear in section 2.6, Basque strong quantifiers (both lexically strong and strongly interpreted weaks) always appear with the definite determiner (that I claim to be a contextual domain restrictor when inside Q-detPs (in line with Giannakidou (2004))). The definite determiner is excluded from weak-cardinal quantifiers (see Chapter 3). If the current proposal is on the right track, the fact that D (contextual domain restrictor) does not appear with weak quantifiers shows that (i) weak quantifiers are not contextually restricted and by extension that (ii) the idea that all common nouns appears with a contextual implicit variable can not be correct.

See Chapter 3 for more discussion on whether cardinally interpreted weak quantifiers are contextually restricted or not.

In this dissertation, I will argue (following Giannakidou (2004) -see next section-) that both nominal as well as Q-det restriction must be allowed in order to explain crosslinguistic facts (see §2.6 for Basque data in favour of this argument). Furthermore, crosslinguistic data show that the default is to implement the contextual variable (implicitly or explicitly) on the nominal; restriction on the Q-det on the other hand, will only be assumed if there is evidence for it (e.g. the use of a definite, as is the case in Greek *o kathe*, St'át'imcets *i zí7zeg'-a* or Basque lexically strong quantifiers)<sup>29</sup>.

## **2.5. Giannakidou (2004)'s Proposal:**

The three basic assumptions made by Giannakidou (2004) are (i) that Quantificational Phrases are contextually restricted, (ii) that the definite article introduces context sets (Westerståhl (1985)) and, (iii) that definite descriptions can undergo predicative shift (Partee (1987)).

### **2.5.1. Nominal Restriction:**

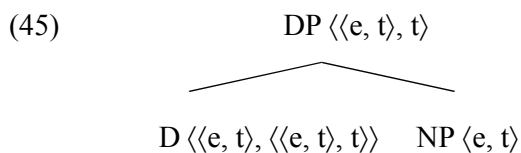
With these three assumptions in mind, Giannakidou claims that instead of altering the type of the NP argument (à la Matthewson), St'át'imcets data (and of those

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<sup>29</sup> Note that the majority of the languages do not compose Q-dets together with Ds. Giannakidou (2004: 14): “the overt option of domain restricting via D is occasionally also available in languages that exploit the implicit (covert) strategy. Crucially, in these languages D-restriction applies at the level of the Q-det, and not at the nominal, since overt nominal restriction is taken care by *of*”. Thanks to Anastasia Giannakidou (p.c.) for discussion on this matter.

languages that embed a DP under a Q-det) suggests that in order for a quantifier to combine with an NP argument, this must be first contextually restricted.

Restriction will be done overtly in the nominal via D (à la Stanley (2000, 2002), S&S (2000a)), which will embody saliency and supply the contextual variable  $C$  yielding a generalized quantifier with a contextually specified set as its generator  $set^{30}$ , in other words, the combination of the D and the NP creates a contextually salient  $set^{31}$ . This analysis explains the definite-like interpretation of St'át'incets DPs without the need to postulate choice functions which are existentially closed at the highest level (contra Matthewson (1999)). This explains the absence of definite/indefinite distinction in St'át'incets: In this language, every DP will be contextually restricted and will have unique contextually specified generators, hence St'át'incets DPs will always be referential and have widest scope.



Once we get the combination in (45), Partee (1987)'s type-shifting comes into play and shifts (by means of BE or Id<sup>32</sup>) the GQ of type  $\langle\langle e, t \rangle, t\rangle$  (or the individual of

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<sup>30</sup> See footnote 5.

<sup>31</sup> It might well be the case that St'át'incets DPs create individuals of type  $e$ , rather than generalized quantifiers of type  $\langle\langle e, t \rangle, t\rangle$ . In case this is so, the D would be of type  $\langle\langle e, t \rangle, e\rangle$ . Nothing relevant for the general analysis changes if we assume that determiners in St'át'incets create individuals; the DP would be referential and would have widest scope. In fact, this is what I will be assuming for Basque definite determiners (see section 2.6.1.2).

<sup>32</sup> Giannakidou (2004: 10): "Partee (1987) postulates shift to  $et$  from either a GQ meaning (by applying BE), or a referential meaning (by applying Id). Given that the St'át'incets DP contains a generator, we might want to identify  $X...a$  as a definite, as suggested in earlier work by Matthewson, or merely trivialize

type  $e$ ) to an element of predicative type  $\langle e, t \rangle$  in order for it to combine with the Q-det (the type the standard theory of generalized quantifiers assumes a Q-det to combine with).

(46a) BE:  $\langle \langle e, t \rangle, t \rangle \rightarrow \langle e, t \rangle: \lambda P_{e,t} [\lambda x [\{x\} \in P]]$ .

BE is a type shifter functor that is applied to the generalized quantifier meaning of an NP whenever we find the NP is of type  $\langle e, t \rangle$ . In other words, it applies to a generalized quantifier, finds the singletons that are contained in it and collects their elements in a set.

(46b) Id:  $e \rightarrow \langle e, t \rangle: \text{Id}(x) = \lambda x [x \leq y]$  or  $\lambda x [x = y]$  in case  $x$  is a singularity.

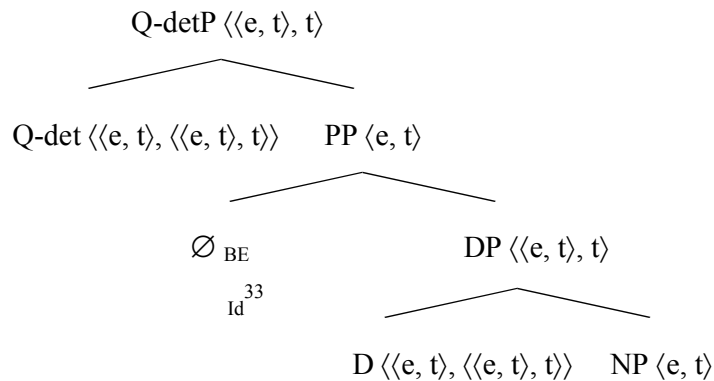
Id takes an individual (singular or plural) and turns it into the set that consists of the single individual identical to that individual. It undoes what  $\iota$  did via the ‘part of’ for plurals, and the identity relation for singulars.

Assuming that type-shifters are syntactic elements, in St’át’imcets, the BE (or Id) type-shifter will be covert and its function will be that of a partitive (see ex. (47)). This will allow us to keep the standard GQT while accounting for the St’át’imcets facts: Quantifier Phrases in this language will be partitives.

(47) [tákem i Ø smelhmúlhats-a]  
 [all D.pl (of) woman (pl)-D]  
 ‘all of the women’

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the question of whether it is a definite or an indefinite”. In other words, the type shifter can be BE or Id depending on whether the DP is assumed to create a GQ or an  $e$  type individual (see examples (46a-b) for a description of these type shifters.



Additional evidence in favour of this analysis comes from the fact that there are no overt partitive forms in St'át'imcets (see Matthewson (2001))<sup>34</sup>. In languages with overt partitive *of* forms, the covert shift (realised by BE or Id as in St'át'imcets) will be blocked and the direct combination of the Q-det and DP will not be possible (Chierchia (1998c)). This assumption is going to be crucial for the proposal that is put forward in this dissertation as will be made explicit in section 2.6 below.

### **2.5.2. Q-det Restriction:**

Apart from the possibility of restricting the nominal, as is the case in St'át'imcets (where restriction happens overtly) or in languages like English, Spanish, Greek or Basque (see section 2.6.1.2), there are also cases where restriction must be postulated to apply to the Q-det itself favouring the analysis put forward in von Fintel

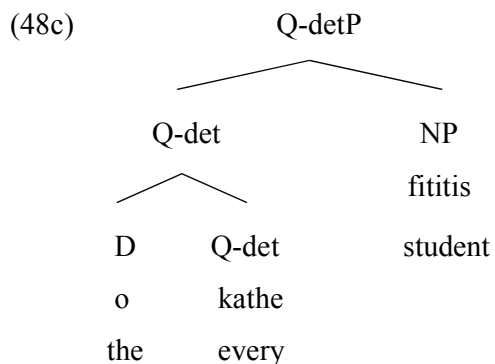
<sup>33</sup> In case the DP is treated as an entity of type *e*. See footnote 31.

<sup>34</sup> Matthewson (2001), in order to apply her quantificational structure crosslinguistically claims that *of* in languages such as English is there just for case reason. However, this has been claimed not to be correct, see section 2.3.3.

(1994, 1998) or Martí (2003) (contra Stanley (2000, 2002), S&S (2000a)). This is, for example, what appears to be happening with Greek *o kathe* or with St’át’imcets *i zíʔzeg’-a*. See § 2.6.1.1 for Basque.

(48a) O kathe fititis [D Q-det] (Giannakidou (2004: 12))  
 det.sg each students  
 Translated as: each student

(48b) o kathe fititis = [kathe (C)] (student) ‘each student’



As shown by the structure in (48c)<sup>35</sup>, the D attaches to the Q-det to form a new complex Q-det; a complex Q-det that will contain the variable C and will be contextually restricted.

Note that when domain restriction applies to the Q-det, no further definite is allowed. This shows that restriction is already accomplished and that the construction in (49) would yield a type mismatch.

<sup>35</sup> See section 2.6.1.1, where the Basque data offered provides evidence in favour of the correctness of this analysis.

- (49) \* o      kathe o      fititis  
         det.sg each det.sg students  
         Lit.: ‘the each the student’

The example in (49) also shows that the quantificational domain restriction can only happen once, in the quantificational element or in the nominal element.

### **2.5.3. Subsection Conclusion:**

This section has shown that the quantificational domain restriction is needed both in the nominal and in the Q-det (never in the two positions together). The next section presents Basque quantificational data, a language that provides further evidence in favour of Giannakidou’s analysis.

## **2.6. Basque Nominal Quantification**

From Chapter 1, we know that the Basque quantifiers are classified in the following way (see also Etxeberria (2002b)):

(50)

**Strong Quantifiers:** *guzti* (all), *den* (all), *gehien* (most)<sup>36</sup>, *bakoitz* (each).<sup>37</sup>

**Weak Quantifiers:** *batzu(e)k* (some), *zenbait* (some), *hainbat* (some), *asko* (many), *gutxi* (few), *ugari* (a lot), numerals, *numeral baino gehiago* (more than numeral), *numeral baino gutxiago* (less than numeral), etc.

One crucial difference between the strong and weak quantifiers is that Basque strong quantifiers (*guzti* (all), *den* (all), *gehien* (most), *bakoitz* (each)) must necessarily appear with the article -A/-AK.

(51a) [Ikasle **guzti-ak**] berandu etorri ziren.  
[student all-D.pl(abs)] late come aux.past.pl  
'All of the students came late.'

(51b) \*[Ikasle **guzti**] berandu etorri ziren.

(52a) [Ikasle **gehien-ak**] berandu etorri ziren.  
[student most-D.pl(abs)] late come aux.past.pl  
'Most of the students came late.'

(52b) \*[Ikasle **gehien**] berandu etorri ziren.

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<sup>36</sup> See section 2.6.2.1.1 where I defend that *gehien* and its crosslinguistic counterparts are not quantifiers but rather superlative expressions.

<sup>37</sup> There is an element that the Basque linguistics literature has analysed as a universal quantifier: *oro* (cf. i.e. Euskaltzaindia (1993: 110), Artiagoitia (2003)). I treat this element as ambiguous between a real quantificational interpretation and a reading where it functions as a DP exhaustive modifier (à la Brisson (1998, 2003)). See section 2.6.2.3.

On the other hand, and in contrast to what happens with strong quantifiers, Basque weak quantifiers (*batzu(e)k* (some), *zenbait* (some), *asko* (many), *gutxi* (few), *ugari* (many), numerals<sup>38</sup>, *numeral baino gehiago* (more than numeral N), *numeral baino gutxiago* (less than numeral N)) do not take -A/-AK no matter where the article is placed, as can be observed in the following examples (see Chapter 3).

- (53a) [**Zenbait**<sup>39</sup> politikari] berandu iritsi ziren.  
 [some politician] late arrive aux.pl.past  
 ‘Some politicians arrived late.’
- (53b) \*[**Zenbait(-ak)** politikari(-ak)] berandu iritsi ziren.
- (54a) [Politikari **asko**] berandu iritsi ziren.  
 [politician many] late arrive aux.pl.past  
 ‘Many politicians arrived late.’
- (54b) \*[Politikari(-ak) **asko(-ak)**] berandu iritsi ziren.

Following a crosslinguistic pattern, Basque weak quantifiers can also be interpreted in a strong manner (partitive), in such a case they must appear with the overt (or covert --through context-- see section 2.6.1.2) version of the partitive *of*.

- (55) [Ikasle-**etatik gutxi**] berandu iritsi ziren.  
 [student-D.pl/of few] late arrive aux.pl.past  
 ‘Few of the students arrived late.’

<sup>38</sup> Numerals do accept appearing with the definite determiner; in that case, the interpretation is necessarily definite. See Chapter 3, section 3.3.

<sup>39</sup> See Chapter 3, section 3.3, where I try to explain the reason why some weak quantifiers must appear before the noun while others must follow it. See also Artiagoitia (2003).

(56) [Ikasle-**etatik asko**] berandu iritsi ziren.  
 [student-D.pl/of many] late arrive aux.pl.past  
 ‘Many of the students arrived late.’

(57) [Ikasle-**etatik batzuk**] berandu iritsi ziren.  
 [student-D.pl/of some] late arrive aux.pl.past  
 ‘Some of the students arrived late.’

These quantifiers (strongly interpreted weak quantifiers) are necessarily proportional and the partitive *ikasleetatik* (of the students) denotes the set of contextually relevant *students* in (55, 56, 57) (cf. Ladusaw (1982))<sup>40</sup>.

### 2.6.1. Basque Quantifiers and Domain Restriction:

I take the Basque quantificational data presented in the previous section to provide clear evidence for the necessity of both Q-det domain restriction as well as nominal domain restriction. These data supports, I think, the claim that (i) the Q-detP internal D is a domain restrictor<sup>41</sup>, (ii) Q-det domain restriction and nominal domain

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<sup>40</sup> Ladusaw (1982) assumes that *of* plays the role of a ‘consist of’ function which takes any group-level individual and returns the set of atoms corresponding to the generator set. *Of the students* is then the same type of object as *students*, but instead of denoting the set of all students it denotes the set of all contextually relevant students.

(i) [[of NP]] = g(a) if [[NP]] = I<sub>a</sub>; undefined otherwise

<sup>41</sup> The idea of considering the Q-detP internal Ds domain restrictors can be related to the fact that in many languages determiners have been derived from demonstratives, and demonstratives are very much contextually linked elements. The Spanish determiner for example has been derived from the Latin demonstrative (see Lapesa (1961)). So is also the case in Basque, the definite determiner -A has been historically derived from the distal demonstrative (see Azkarate & Altuna (2001), see also Ch. 4, §4.6.1).

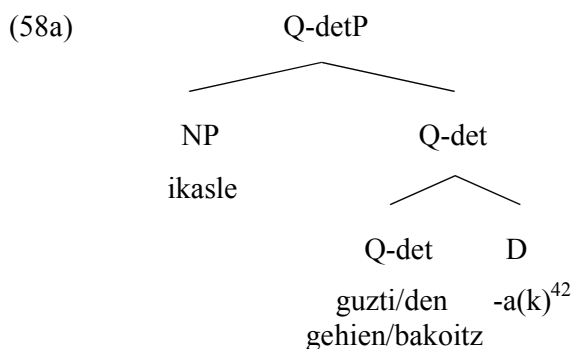
(i) hura / (h)a → -a

restriction are needed to explain crosslinguistic facts, and (iii) the standard analysis of GQ can explain quantificational facts crosslinguistically.

### 2.6.1.1. Basque Lexically Strong Quantifiers:

Unlike in Greek, English or Spanish, all of the Basque inherently strong Q-dets (*guzti* (all), *den* (all), *gehien* (most), *bakoitz* (each)) compose directly with D yielding [NP [Q-det D]] as the only possible grammatical order.

So, in line with Giannakidou's proposal, I propose that the syntactic structure of a lexically Basque strong quantifier will go as in (58).



(58b) *ikasle guztiak* = (ikasle) [guzti (C)]

(58c)  $[[\text{guzti}]] = \lambda P \lambda C \lambda Q . \{x: C(x)=1 \ \& \ P(x)=1\} \subseteq \{x: Q(x)=1\}$

(58d)  $[[\text{-ak}]] = \lambda x. x \text{ is a silent individual}$

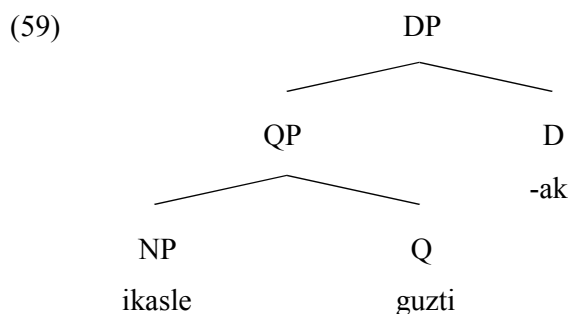
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Vangsnes (2001: 271-272): “The demonstrative carries information about the locational orientation of the speaker with respect to the referent of the noun phrase it is contained in. The article, on the other hand, entails something like a default deictic reading: it points to a given referent, but rather than picking out one which is located in certain ways spatially, it merely picks out the most salient one in the discourse.”

<sup>42</sup> In Chapter 3 I propose that the base positions of -A and -K are different. Thus, -A will be the definite determiner while -K will be considered the plural marker (contra Artiagoitia (1998, 2003)); see Chapter 4 for a semantic analysis of the Basque definite determiner -A. The current discussion can be continued without undertaking such an assumption.

In fact, Basque lexically strong quantifiers suggest that the Q-det and the D compose together by means of an adjunction procedure (or by incorporating the D to the Q-det)<sup>43</sup>. Hence, the domain restriction introduced by the definite determiner creates a new complex Q-det which will contain the contextual variable C and will be contextually restricted. The proposal is then that Basque lexically strong quantifiers take three arguments as expressed in (58c).

Now, an alternative analysis could be to assume that instead of a Quantifier Phrase, what Basque strong quantifiers create are DPs with the structure in (59).



Let us assume, just for the sake of argument, that the structure in (59) is the correct one. If this was so, it should be possible to conjoin two QPs (that is, two [NP+Q] sequences in (59)) under the same single D in the same way that it is possible to conjoin two NPs or two AdjPs under the same D (see also section 2.6.1.3).

<sup>43</sup> Giannakidou (2004: 12) “*o kathe* is a complex determiner and we can view this as incorporation of D to Q-det (perhaps D having moved from a lower NP internal position, or directly adjoining to Q-det)”.

NP conjunction

- (60a) [<sub>DP</sub> [Ikasle] eta [irakasle]-ak] azterketa garaian daude.  
[student and teacher]-D.pl(abs) exam period-(ines.) aux.  
'The students and teachers are in exams period.'

AdjP conjunction

- (60b) Maiak [<sub>DP</sub> [zaldi haundi] eta [elefante txiki]-ak] ikusi ditu.  
Maia-erg horse big and elephant small-D.pl(abs) see aux.  
'Maia has seen the big horses and small elephants.'

But contrary to what this alternative analysis predicts, the following examples are completely ungrammatical in Basque.

- (61a) \*[[Ikasle gehien] eta [irakasle guzti]-ak] goiz iritsi ziren.  
student most and teacher all-D.pl(abs) early arrive aux.pl.past  
'All of the students and all of the teachers arrived early (intended).'
- (61b) \*[[Neska bakoitz] eta [mutil guzti]-ek] sari bat irabazi zuten.  
girl each and boy all-D.pl(erg) prize one win aux.pl.  
'Each girl and all of the boys won a prize (intended).'

Then, what these sentences come to show is that, as predicted by the analysis put forward in this chapter, (i) Basque strong quantifiers create Q-detPs and not DPs headed by the definite determiner, and that (ii) the Basque article --definite determiner-- (at least in quantificational phrases) is behaving as a contextual variable that composes together with the Q-det, its function being that of restricting the quantificational domain.

According to Giannakidou (2004: 8), the D composing with the Q-det should be correlated to the property of veridicality<sup>44</sup> (a property that requires a non-empty domain) and the property of distributivity (a property that would disallow these quantifiers to appear with collective predicates). The fact that D composing with the Q-det should be correlated to both the property of veridicality and the property of distributivity is due to the fact that in Greek and St’át’imcets the quantifiers that show this structure are *o kathe* (each) and *i zi7zeg’a* (each) (but see section 2.3.5 and below). The English quantifier *each* is both veridical and distributive, and Giannakidou believes that these properties also apply to those quantifiers that compose together with D.

This predicts that Basque strong quantifiers should be veridical and distributive. However, Basque strong quantifiers provide evidence that these two properties must not necessarily be obeyed in order for a quantifier to compose directly with D. Furthermore, Matthewson (2001: fn.5) also notes a construction in which St’át’imcets strong quantifiers (not only *i zi7zeg’a* (each)) co-occur with the D “but the order of Q and D is reversed”.

- (62) [i tákem-a smúlhats] [D Q-det] (Matthewson 2001: fn.5)  
 [D.pl all-D woman]  
 Translated: all the women

This example would show that not only veridical and distributive quantifiers (it remains to be established whether St’át’imcets *i tákem-a* is veridical but it is clear that it is not

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<sup>44</sup> The following definition of *veridicality* is taken from Giannakidou (1998: 132):

- (i) In a context *c*, a determiner is veridical with respect to its NP argument iff the truth of DET NP VP requires that  $|NP| \neq \emptyset$  hold in *c*

necessarily distributive) compose together with the Q-det and that other strong quantifiers can also be composed together with the determiner.

Basque strong quantifiers behave as predicted when it comes to veridicality and do not license Negative Polarity Items (NPIs).<sup>45</sup>

(63a) ?\* Inor ikusi zuten ikasle guzti-ek atezaina abisatu zuten.  
 anybody see aux. student all-D.erg.pl porter-D.abs.sg report aux.  
 ‘All of the students who saw anyone reported to the porter.’

(63b) ?\* Inor ikusi zuten ikasle den-ek atezaina abisatu zuten.  
 anybody see aux. student all-D.erg.pl porter-D.abs.sg report aux.  
 ‘All of the students who saw anyone reported to the porter.’

(63a) ?\* Inor ikusi zuten ikasle gehien-ek atezaina abisatu zuten.  
 anybody see aux. student most-D.erg.pl porter-D.abs.sg report aux.  
 ‘Most of the students who saw anyone reported to the porter.’

(63a) \* Inor ikusi zuen ikasle bakoitz-ak atezaina abisatu zuten.  
 anybody see aux. student each-D.erg.pl porter-D.abs.sg report aux.  
 ‘Each student who saw anyone reported to the porter.’

Now, it is also true that all four Basque strong quantifiers are presuppositional in that they presuppose the set denoted by the NP to be a non-empty salient domain. In fact, in the sentences in (64), the set of *akats* (mistakes) is presupposed to be non-empty.

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<sup>45</sup> The vast majority of Basque speakers agree with the data in (63); however, there are some speakers that only judge as ungrammatical the sentence where the Basque inherently distributive *bakoitz* appears (Itziar Laka (p.c.)). Even then, as I said before, Basque provides evidence for the fact that both veridicality and distributivity are not necessary conditions for a quantifier to combine together with a determiner since clearly not all Basque strong quantifiers are distributive.

- (64a) Akats guzti-ak aurkitzen badituzu, goxoki bat emango dizut.  
 mistake all-D.abs.pl find if-aux. candy one give aux.  
 ‘If you find all the mistakes, I’ll give you a candy.’
- (64b) Akats den-ak aurkitzen badituzu, goxoki bat emango dizut.  
 mistake all-D.abs.pl find if-aux. candy one give aux.  
 ‘If you find all the mistakes, I’ll give you a candy.’
- (64c) Akats gehien-ak aurkitzen badituzu, goxoki bat emango dizut.  
 mistake most-D.abs.pl find if-aux. candy one give aux.  
 ‘If you find most of the mistakes, I’ll give you a candy.’
- (16c) Ikasle bakoitzak liburu bat irakurtzen badu, goxoki bat emango diot.<sup>46</sup>  
 student each-D.erg.sg book a read if-aux candy a give aux.  
 ‘If each student reads a book, I’ll give (each student) a candy.’

However, the prediction is not borne out when it comes to distributivity. I have argued elsewhere (Etxeberria (2002a)) that distributive interpretation is closely related to singularity (cf. Gil (1995)). The single Basque strong quantifier that is inherently distributive is *bakoitz*, crucially, the only strong quantifier that agrees with the verb in singular. The rest of strong quantifiers, those that agree with the verb in plural, can force both distributive as well as collective interpretations.

- (65a) Ikasle guzti-ek/den-ek/gehien-ek abesti bat abestu zuten.  
 student all/all/most-D.erg.pl song one-abs.sg sing aux  
 ‘All/all/most of the students sang a song.’  
 √ DISTRIBUTIVE  
 √ COLLECTIVE

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<sup>46</sup> See Chapter 1, footnote 17.

(65a) *Ikasle bakoitz-ak abesti bat abestu zuten.*

student each-D.erg.sg song one-abs.sg sing aux

‘All/all/most of the students sang a song.’

√ DISTRIBUTIVE

\* COLLECTIVE

An argument in favour of concluding that distributivity is related to singularity is the following: most Basque weak quantifiers (*asko* -many-, *zenbait* -some-, *gutxi* -few-, etc.) can agree with the verb in plural or in singular (despite their plural interpretation). In singular cases the only possible interpretation is the distributive one as the example in (66) shows.

(66) *Ikasle askok abestu **zuen**<sup>47</sup> abesti bat.*

student many sing aux.sg song one-abs.sg

‘Many students sang a song.’

√ DISTRIBUTIVE

\* COLLECTIVE

However, the differences that have just been sketched out (between Giannakidou’s predictions and Basque data) do not change the basic proposal of this chapter and dissertation: the D that appears in QPs is a contextual domain restrictor. Actually, note that when contextualisation happens at the Q-det level (which is the case with Basque strong quantifiers), the addition of another definite results in

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<sup>47</sup> The plural form of the auxiliary would be *zuten*; instead of *zuen* as in (66). Note also that these weak quantifiers must usually appear in preverbal position (see Etxepare (2000)). Focused phrases occur immediately to the left of the verb in Basque, see e.g. Ortiz de Urbina (1999). For analyses of focus in Basque, see de Rijk (1978), Ortiz de Urbina (1989a, 1999), Etxepare (1997), Elordieta (2000), Etxepare & Ortiz de Urbina (2003), Arregi (2003), Irurtzun (2004) among many others.

ungrammaticality due to type mismatch, since the Q-det would receive an *e* type argument rather than an  $\langle e, t \rangle$  type argument, as required.

(67a) \* ikasle-**ak** guzti-**ak**

student-D.pl all-D.pl

‘The all the students’

(67b) \* ikasle-**ak** den-**ak**

student-D.pl all-D.pl

‘The all the students’

(67c) \* ikasle-**ak** gehien-**ak**

student-D.pl most-D.pl

‘The most the students’

(67d) \* ikasle-**a** bakoitz-**a**

student-D.pl each-D.pl

‘The each the students’

As expected, and since the quantificational domain is already restricted, the overt partitive form will also be out.

(68a) \* ikasle-**etatik** guzti-**ak**

student-the.pl/of all-D.pl

‘The all of the students’

(68b) \* ikasle-**etatik** den-**ak**

student-the.pl/of all-D.pl

‘The all of the students’

(68c) ?? ikasle-**etatik** gehien-**ak**<sup>48</sup>

student-the.pl/of most-D.pl

‘The most of the students’

(68d) \* ikasle-**etatik** bakoitz-**a**

student-the.pl/of each-D.pl

‘The each of the students’

Observe that the partitive structure of the examples in (68) does not produce any kind of type mismatch. In other words, the partitive *ikasleetatik* (lit.: student the.pl of) would yield the correct argument (an  $\langle e, t \rangle$  type predicative argument) for the quantifier to quantify over; but still, the constructions in (68) are out. Thus, the ungrammaticality of these sentences must be (as correctly predicted by this analysis) due to the fact that domain restriction is already fulfilled by means of the D that appears together with the strong Q-dets. This should be taken as further evidence in favour of the fact that quantificational domain restriction can only happen once, and not twice as in the ungrammatical examples in (68).

Note that the constructions in (68) become grammatical when *ikasleetatik* (lit.: student the.pl of) and the strong Q-dets *guztiak/denak/gehienak/bakoitza* are pronounced with a pause in between, i.e. separated by a comma. However, the constructions in (69b-c) and the ones in (68) can not be said to be parallel; when pronounced with a pause, apart from being grammatical as the example in (69b) shows, quantifiers are allowed to float, as in (69c), but with no pause, the sentences are completely out as the example in (69a) shows:

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<sup>48</sup> See section 2.6.2.1.1.

- (69a) \* *Ikasleetatik guztiak berandu iritsi ziren.*  
 students-D.pl/of all-D.abs.pl late arrive aux  
 ‘Lit.: The all of the students arrived late.’
- (69b) *Ikasleetatik, guztiak berandu iritsi ziren.*  
 students-D.pl/of all-Dabs.pl late arrive aux  
 ‘Of the students, all (of them) arrived late.’
- (69c) *Ikasleetatik, berandu iritsi ziren guztiak.*  
 students-D.pl/of late arrive aux all-D.abs.pl  
 ‘Of the students, all (of them) arrived late.’

What the examples in (69) suggest is that in fact we are not talking about the same construction:

- The ones in (69a) and (68) would be real quantifiers and they behave as such in that (as predicted) they do not accept further restriction, since domain restriction has already taken place in the Q-det.
- In the examples in (69b) and (69c) on the other hand, there seems to be a left dislocation of the partitive and the elements do not form a single constituent.

Basque also possesses another partitive construction (*-etako*) parallel in meaning to *-etatik*. Unlike the latter (see (69b-69c)), *-etako* forces the whole structure to be necessarily a constituent and this is why the sentences in (70a-b-c) are out<sup>49</sup>.

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<sup>49</sup> Thanks to Ricardo Etxepare (p.c.) for pointing this out to me.

- (70a) \* Ikasleetako guztiak berandu etorri ziren.  
 students-of the all-D.abs.pl late arrive aux  
 ‘Lit.: The all of the students arrived late.’
- (70b) \* Ikasleetako, guztiak berandu etorri ziren.  
 students-of the all-D.abs.pl late arrive aux  
 ‘Of the students, all (of them) arrived late.’
- (70c) \* Ikasleetako, berandu etorri ziren guztiak.  
 students-of the late arrive aux all-D.abs.pl  
 ‘Of the students, all (of them) arrived late.’

The proposal put forward in this dissertation avoids a problem that Matthewson (2001)’s analysis would have to face when applied to Basque nominals. The Basque definite article (-A/-AK) does not only create *e* type elements and can also appear at the quantificational ( $\langle\langle e, t \rangle, t \rangle$ ) or at the predicative ( $\langle\langle e, t \rangle$ ) type, as expected.

(71) **Quantificational:**

Irakasle guzti-ak eta ikasle-a goiz iritsi dira.  
 professor all-D.pl and student-D.sg early arrive aux.  
 ‘All of the professors and the student have arrived early.’

(72) **Predicative:**

Esther bizkaitarr-a da.  
 Esther Bizkaian-D.sg is  
 ‘Esther is (a) Bizkaian.’

### 2.6.1.2. Strongly Interpreted Weak Quantifiers:

In opposition to what happens with Basque lexically strong quantifiers, strongly interpreted weak quantifiers incorporate partitive forms to be interpreted proportionally. As is the case in e.g. English, Greek, Catalan or Spanish, nominal restriction happens overtly (or pragmatically --see below--) with partitive *of+the* (Basque *-etatik*) which consists of the definite determiner plus the preposition *of*.

(73) [Ikasle-etatik **gutxi**] berandu iritsi ziren. (=55)  
[student-D.pl/of few] late arrive aux.pl.past  
'Few of the students arrived late.'

(74) [Ikasle-etatik **asko**] berandu iritsi ziren. (=56)  
[student-D.pl/of many] late arrive aux.pl.past  
'Many of the students arrived late.'

(75) [Ikasle-etatik **batzuk**] berandu iritsi ziren. (=57)  
[student-D.pl/of some] late arrive aux.pl.past  
'Some of the students arrived late.'

As just mentioned, apart from the overt partitive version, weak quantifiers can also obtain a proportional interpretation even when the partitive construction is not overt. This dissertation assumes that weak quantifiers can obtain both cardinal/weak (see Chapter 3) interpretations as well as proportional/strong ones.

- (76) [Ikasle **gutxi**] iritsi ziren berandu.<sup>50</sup>  
 [student few] arrive aux.pl.past late  
 ‘Few (of the) students arrived late.’
- (77) [Ikasle **asko**] berandu iritsi ziren.  
 [student many] late arrive aux.pl.past  
 ‘Many (of the) students arrived late.’
- (78) [Ikasle **batzuk**] berandu iritsi ziren.  
 [student some] late arrive aux.pl.past  
 ‘Some (of the) students arrived late.’

It is a standard assumption that the proportional/strong interpretation of weak quantifiers is obtained through an (overt/covert) partitive construction.

- Partee (1988: 16): “These essentially quantificational cases are almost paraphrasable by partitives even when there is no partitive structure.”
- de Hoop (1992: 39): “On its existential reading, some is unstressed. On its partitive reading, the meaning of some can be paraphrased as ‘some, but not others’ and hence, it is next to synonymous with the ‘some of the’ interpretation.”

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<sup>50</sup> See Chapter 1, footnote 22.

However, the present proposal departs from this standard assumption (see Chapter 3) and claims instead, following Büring (1996) (see also Partee (1991a)), that the proportional/strong interpretation in examples such as those in (76-78) (unless there is an overt partitive construction as in (73-75)) is not obtained by means of a covert partitive construction but rather it is obtained pragmatically.

Büring (1996) approaches the covert partitive phenomenon from a pragmatic point of view and proposes that weak quantifiers are not ambiguous; whether they are presuppositional (partitive) or not depends on the Topic/Focus/Background Structure (TFBS).<sup>51</sup>

Büring (1996: 20) argues that sentences of the kind in (79) involve two accents, the first of which is not a focus accent, but a contrastive topic accent. Such a sentence triggers the reconstructions of a particular set of potential contexts, the ones obtained by substituting *some* for its contextually relevant alternatives given in (80).

(79) SOME students drank BEER.

(80a) What did all of the cowboys drink?

(80b) What did every cowboy drink?

(80c) What did most cowboys drink?

(80d) What did many cowboys drink?

....

This way, there is no need to postulate a covert version of the partitive; those apparently weak quantifiers that form overt partitive constructions (as in (73-75)) will

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<sup>51</sup> See Chapter 4, section 4.2 for an extended view of Büring's ideas.

be considered strong quantifiers (as has been already claimed, see also below). The presuppositional reading emerges as a result of the contexts required pragmatically by the sentence.

In Basque, the overt partitive form *-etatik* (which forms necessarily strong quantifier) is divided between the definite determiner *-A* that is not seen due to assimilation with the plural marker *-eta*<sup>52</sup> (the usual plural marker is *-k*), and finally the ablative marker *-tik*<sup>53</sup>. In Basque, case is marked by means of suffixes; morphologically, it is possible to distinguish between the indeterminate and the determinate paradigms<sup>54</sup>.

(81)

	indeterminate	determinate sg.	determinate pl.
Ergative	etxe <sup>55</sup> -k	etxe-ak	etxe-ek
Ablative	etxe-ta-tik	etxe-tik	<b>etxe-eta-tik</b>

The fact that the definite determiner is also included in *-etatik* can be noticed from the following: It is known that partitive constructions like the ones we are considering denote the set of all contextually relevant *houses* (in this case) and we are arguing that for such constructions the definite determiner is necessary. Now, in

<sup>52</sup> See Azkarate & Altuna (2001) for the historical analysis of the plurality marker *-eta*.

<sup>53</sup> See Eguzkitza (1997).

<sup>54</sup> This difference is usually addressed as *indefinite* vs. *definite* (see e.g. Hualde & Ortiz de Urbina (2003)). In this dissertation I use the terms *indeterminate* and *determinate* not to mix them with the terms *definite* and the *indefinite* determiners.

<sup>55</sup> The meaning of *etxe* is 'house'.

principle it would seem possible to create a partitive with the indeterminate form of the ablative, but as the example in (82a) shows, it is not.

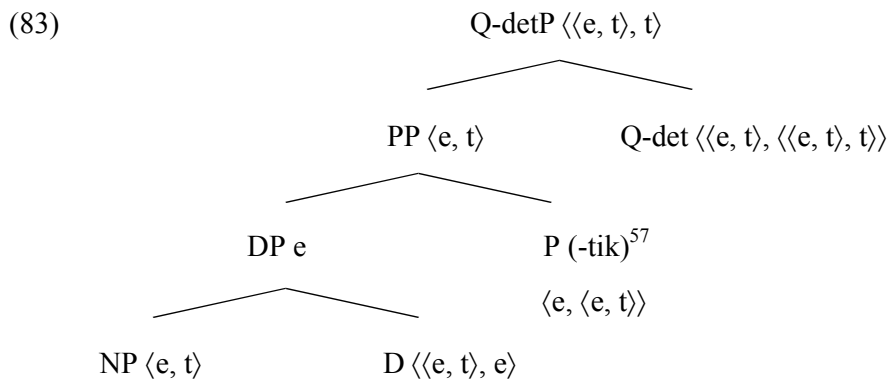
- (82a) \* etxe-ta-tik asko  
house-pl.-abl many
- (82b) etxe-eta-tik asko  
house-D+pl.-abl many

Thus, *-eta* should be taken as a portmanteau morpheme that marks features such as number and definiteness in a single morpheme.

As the structure in (83) shows, the partitives in (73), (74) and (75) are the typical partitive constructions where first, the combination of the NP and the D (the contextual restrictor) creates an individual of type *e*. The Basque partitive suffix *-tik* will be the overt type shifter (equal to the function fulfilled by *Id*<sup>56</sup>) that takes its complement of type *e* and shifts it back to  $\langle e, t \rangle$  so that the quantifier is taking the proper type argument. From this last combination, we get a generalized quantifier of type  $\langle \langle e, t \rangle, t \rangle$ . Something like *ikasleetatik* (lit.: student the.pl of) will thus be the same type of object as the noun *ikasle* (student), but instead of denoting the set of all students, denotes the set of all contextually relevant students (Ladusaw (1982)).

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<sup>56</sup> See example (46b).



Strongly interpreted weak quantifiers (partitive and proportional), just like lexical strong quantifiers, are also presuppositional and the set denoted by the NP must be non-empty and salient. In the sentences in (84), the set of *aldizkari* (magazine) is presupposed to be non-empty.

(84a) Aldizkari-etatik asko irakurtzen badituzu, 150 euro lortuko dituzu.

Magazine-D.pl/of many read if-aux. euro get aux.

‘If you read many of the magazines, you’ll get 150 euros.’

(84b) Aldizkari-etatik gutxi irakurtzen badituzu, 150 euro lortuko dituzu.

Magazine-D.pl/of few read if-aux. euro get aux.

‘If you read few of the magazines, you’ll get 150 euros.’

<sup>57</sup> Following Russell (1905)’s idea (see Neale (1990)), it could also be possible to treat D (definite article) as a kind of universal quantifier with a contextually specified set as its generator. For a sentence like (i), Russell gives the logical form in (ii), according to which a definite description in a sentence involves a claim of existence, a uniqueness claim, and a predicative claim:

- (i) The P is Q
- (ii)  $\exists x (P(x) \ \& \ \forall y (P(y) \rightarrow x=y) \ \& \ G(x))$

In such a case, NP+D would create a GQ and the function fulfilled by *-tik* would be that of BE (which applies to a generalized quantifier, finds the singletons that are contained in it and collects their elements in a set, that is, it takes a GQ of type <<e, t>, t> and returns a set of type <e, t>) in order to get a correct type argument for the quantifier to quantify over. See example (46a).

See Strawson (1950) for some problems Russell’s analysis has to face. This dissertation assumes that the definite article creates referential (individuals and GQs) as well as predicative readings (à la Strawson).

- (84c) Aldizkari-etatik batzuk irakurtzen badituzu, 150euro lortuko dituzu.  
 Magazine-D.pl/of some read if-aux. euro get aux.  
 ‘If you read some of the magazines, you’ll get 150 euros.’

As was the case with Basque lexically strong quantifiers, and as predicted by the fact that strongly interpreted weak quantifiers are also contextually restricted (since they are taken to be quantifiers), further definites will not be allowed.

- (85a) \* Ikasleetatik asko-**ak**  
 student-D.pl/of many-D  
 ‘The many of the students’  
 (85b) \* Ikasleetatik gutxi-**ak**  
 student-D.pl/of few-D  
 ‘The few of the students’  
 (85c) \* Ikasleetatik zenbait-**ak**  
 student-D.pl/of some-D  
 ‘The some of the students’

Note also the difference between the structure offered for the quantifiers of St’át’imcets (see ex. (47)) and the one we are offering for Basque strongly interpreted weak ones. Recall that St’át’imcets does not possess overt partitive forms and a covert type shifter has been proposed in order for the Q-det to get an argument of the correct type. On the contrary, Basque does possess an overt partitive form (*-tik*) and this excludes the possibility of covertly type-shifting the contextually restricted noun as the examples in (86) clearly show.

(86a) \* **Ikasle-ak** Ø asko.  
student-D.pl many  
'Many the students'

(86b) \* **Ikasle-ak** Ø gutxi.  
student-D.pl few  
'Few the students'

(86c) \* **Ikasle-ak** Ø zenbait.  
student-D.pl some  
'Some the students'

Thus, it seems correct to conclude that:

- (i) contextual restriction happens only once,
- (ii) when domain restriction happens in the Q-det partitive forms (that restrict the nominal expression) are not allowed and vice versa and,
- (iii) Giannakidou (2004)'s proposal is correct.

The following subsection addresses the different compositional structures shown by the Basque lexically strong quantifiers and strongly interpreted weak quantifiers respectively. While the former compose the Q-det and the definite determiner (which plays the role of the domain restrictor on the Q-det) together, the latter create partitive constructions where the partitive *-etatik* (lit.: the.pl of) is attached to the nominal element restricting the nominal.

### 2.6.1.3. Two Ways to Construct Strong Quantifiers:

As has been made explicit, lexically strong quantifiers and strongly interpreted weak quantifiers behave differently in that the former restrict the Q-det while the latter create partitive structures and restrict the nominal. The reason why this is so may be due to the fact that Basque lexically strong quantifiers historically derive from adjectives and adjectives in Basque necessarily appear with -A/-AK<sup>58</sup>.

Trask (2001:128) gives the following example: “In traditional Basque society, a farmhouse always has a name, and a resident of a house is commonly addressed, and referred to, by the house name. Thus Yvan Labéguerie of Milafranga is addressed by the men of the village as *Bakoitza* (unique), the name of his family house”<sup>59</sup>. There is no doubt that in this case *bakoitza* behaves as an adjective. *Guzti* has also been used as an adjective, mainly because the suffix *-ti* is used to form adjectives: *beldur* (fear) + *ti* = *beldurti* (coward).

Some authors do still maintain that what I treat as lexically strong quantifiers are not quantifiers but simple adjectives. Following this line of reasoning Trask (2001: 106) claims that “certain words with quantifier-like meanings are strictly adjectives, including *guzti-guzi* ‘all’, *bakoitz* ‘each’, *gehien* ‘most’...”<sup>60</sup>.

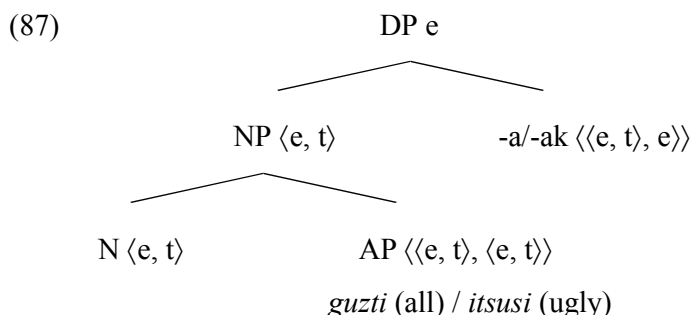
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<sup>58</sup> Thanks to Joseba Lakarra for discussion on this point.

<sup>59</sup> See *Orotariko Euskal Hiztegia* for more examples of this kind.

<sup>60</sup> Artiagoitia (2003: 4) takes Trask’s argument as valid.

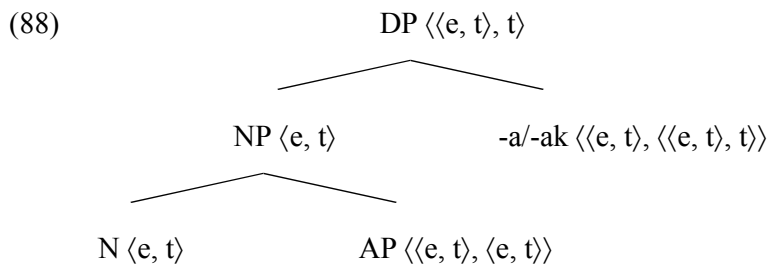
I do agree with the fact that what I described as Basque lexically strong quantifiers have been historically used as adjectives, but I believe that this usage is nowadays lost (see Chapter 1). The implementation of such a claim in terms of type theory would give us something along the following lines.



In (87) the common noun of type  $\langle e, t \rangle$  combines with the adjective (standardly assumed to be) of type  $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$  to create another one place predicate which combined with the article -A/-AK would give as a result an individual of type  $e$ <sup>61</sup>.

One of the problems for this analysis is that it is already an established fact that Basque quantifiers create GQs (sets of sets of type  $\langle \langle e, t \rangle, t \rangle$ ) (see Chapter 1 as well as Etxeberria (2002b)). If that is the case, and if we continue assuming that the so called Basque strong quantifiers are ‘strictly adjectives’, the article -A/-AK would have to be the element that forces the whole phrase to be a generalized quantifier and it would thus have to be of type  $\langle \langle e, t \rangle, \langle \langle e, t \rangle, t \rangle \rangle$  instead of  $\langle \langle e, t \rangle, e \rangle$  as example (88) shows.

<sup>61</sup> The reason why I say that -A/-AK creates an individual of type  $e$  is because I do assume that a phrase like *mutil lodia/ak* (the fat boy/boys) denotes a (singular or plural) individual. See Link (1983), see also Chapter 4.



In the compositional structure introduced in (88) the combination of the common noun and the adjective yields a one-place predicate of type  $\langle e, t \rangle$ .

However, if we have a model composed of four boys like the one defined in (89), the combination of *mutil* and *gehien* does not denote a single set of type  $\langle e, t \rangle$  (as ex. (88) shows),

(89)  $M = \{a, b, c, d\}$

it would denote something similar to what is described in (90) instead.

(90)  $mutil\ gehien = \{\{a, b, c\}, \{a, b, d\}, \{a, c, d\}, \{b, c, d\}, \{a, b, c, d\}\}$

A second problem that this analysis would have to face is that *guzti* and the like do not behave as simple adjectives. Adjectives can interchange their position while the sentence continues being equally grammatical (example (91) is taken from Euskaltzaindia (1993: 119)<sup>62</sup>.

<sup>62</sup> Euskaltzaindia (1993:118): “Zer gertatzen da izen baten ondoan izenondo bat baino gehiago jarri nahi dugularik? Zer ordenatan jartzen dira hauek? Lege zehatzik ez den arren...” (What happens when we want to put more than one adjective beside a noun? What order do they follow? Even though there is no specific rule...)

(91a) Herri txiki polit-a.  
village small nice  
'A small nice village'

(91b) Herri polit txikia.  
'A nice small village'

A strong quantifier on the other hand cannot change positions with an adjective as example (92) shows.

(92a) Herri txiki guzti-ak.  
village small all-D.pl  
'All small villages.'

(92b) \* Herri guzti txiki-ak  
village all small-D.pl

It could be argued that the so called strong quantifiers are *degree* adjectives (a concept that is quite closed to quantification) since in Basque this kind of adjectives must always appear last in the adjectival string. A simple way to express degree is the process of reduplication.

(93a) Ur bero zikin-zikina.  
water hot dirty-dirty  
'Dirty-dirty hot water.'

(93b) \* Ur zikin-zikin beroa  
water dirty-dirty hot

- (94a) Ur zikin bero-beroa.  
 water dirty hot-hot  
 ‘Hot-hot dirty water.’
- (94b) \* Ur bero-bero zikina.  
 water hot-hot dirty

But if we assume that *guzti*, *den*, *gehien*, and *bakoitz* are degree quantifiers due to the fact that they must always occupy the last position in the adjectival string, what are they degrees of? In a sentence like *ikasle guztiak berandu etorri dira* (all the students came late) *guzti* does not measure the degree of being student. Moreover, (95) is not ungrammatical, contra prediction.

- (95) Ur zikin-zikin guzti-a  
 water dirty-dirty all-D.sg  
 ‘All the dirty-dirty water.’

Further evidence against the claim that things like *guzti*, *den*, etc. are adjectives comes from their impossibility to appear in positions where adjectives are allowed, e.g. predicative positions (see Higginbotham (1987)).

- (96a) Lapurrak azkarrak ziren.  
 thief-D.pl smart-D.pl be  
 ‘The thieves were smart.’
- (96b) \* Lapurrak **guztiak/denak/bakoitza** ziren/zen.  
 thief-D.pl all-D.pl/all-D.pl/each-D.sg be.pl/be.sg  
 ‘The thieves were all/all/each.’

This section has first introduced and then given some arguments against the possibility of considering Basque strong quantifiers adjectives.

The next section deals with two residual cases: (i) Spanish *la mayoría de los NP* appears to be problematic for the proposal put forward in this Chapter due to the fact that it seems to restrict its quantificational domain twice; the counterparts of English *most* in Spanish, Catalan, Dutch, Basque etc. are treated in section 2.6.2.1, (ii) section 2.6.3 tries to account for the Basque constructions where *denak* (all-D.pl) and *guztiak* (all-D.pl) appear directly combined with a DP formed by a demonstrative (*mutil hauek guztiak* --lit.: boy these all-D.pl--), as well as the Basque constructions where *oro* (all) -- see footnote 37--, an element that can combine directly both with a definite DP or a bare noun.

## **2.6.2. Some (Crosslinguistic) Residual Cases:**

### **2.6.2.1. Most as a Superlative Crosslinguistically:**

Crosslinguistically, there seems to be at least one counter argument against the claim that quantifiers can only be restricted once and that the domain restrictor (the definite determiner) can not appear in both the nominal and the quantifier at the same time. The counterpart of English *most* in Spanish, Catalan, Dutch, Basque (see section

2.6.2.1.1) etc. besides being necessarily partitive also needs to appear with a determiner at the beginning of the quantificational expression.

Let us concentrate first on the Spanish counterpart of *most* which happens to be necessarily partitive but quite unexpectedly it also needs a D at the beginning of the construction as can be observed in the following examples.

(97a) **La** mayoría **de los** estudiantes suspendieron el examen.

D.sg majority of D.pl students failed the exam

Lit.: 'The(sg) most of the(pl) students failed the exam.'

(97b) **La** mayoría de **la** gente llega tarde a las reuniones.

D.sg majority of D.sg people arrive late to the.pl meetings

Lit.: 'The(sg) most of the(sg) people arrives late to the meetings.'

If we follow the reasoning of the argumentation presented in this chapter (and if this argumentation happens to be on the right track) this construction should not be grammatical since contextual domain restriction can only take place once: in the quantificational element, or in the nominal element, but never in both elements at the same time. This property makes *la mayoría de DP* different from the rest of Spanish (as well as other languages e.g. Basque) strong quantifiers (e.g. *cada chico* --each boy--, *todo chico* --every boy--, *muchos de los chicos* --many of the boys--) which strictly follow what the current analysis predicts.

(98a) \* **Los** muchos **de los** turistas estaban en la playa.

D.pl many of D.pl tourists were in the.sg beach

Lit.: 'The many of the students were on the beach.'

(98b) \* La policía no detuvo a **el/los** todo **de los** traficantes.

D.sg police neg. arrest to D.sg/pl all of D.pl drug-dealers

Lit.: ‘The police did not arrest the all of the drug-dealers.’

In (98a), the partitive *muchos de los NP* can not appear with an extra D at the beginning of the construction, hence the ungrammaticality. In (98b), on the other hand, the quantifier *todo* can not appear neither with the D at the beginning of the construction nor the partitive form (nor with the two together), which would show that this quantifier restricts its domain covertly (on the nominal element, see footnote 29). Since the domain restrictor has already taken place covertly, no other restrictor is needed, hence the ungrammaticality of (98c) --D at the beginning of the construction-- and (98d)-- partitive-- as well<sup>63</sup>.

(98c) \* La policía no detuvo a **el/los** todo traficantes.

D.sg police neg. arrest to D.sg/pl all drug-dealers

Lit.: ‘The police did not arrest the all drug-dealers.’

(98d) \* La policía no detuvo a todo **de los** traficantes.

D.sg police neg. arrest to all of D.pl drug-dealers

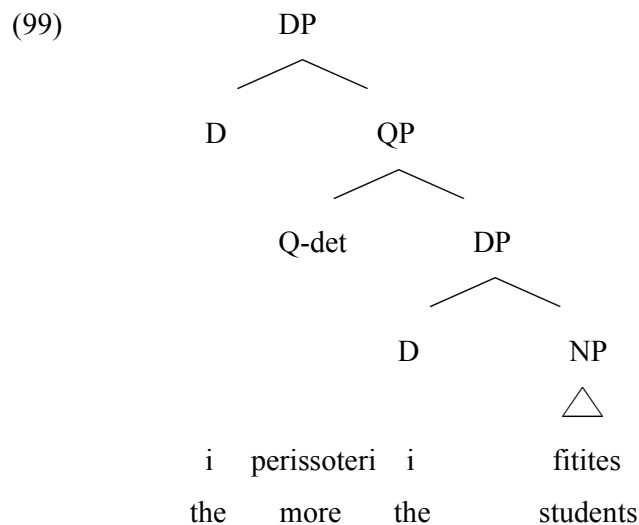
Lit.: ‘The police did not arrest all of the drug-dealers.’

Something similar to what happens in Spanish with *la mayoría de los NP* seems also to be happening with Greek *i perissoteri* (‘most’) (Giannakidou 2004: 13) “which exhibits the D QP order while at the same time optionally allowing a definite argument”. Giannakidou solves the problem of Greek *i perissoteri* appealing to definite

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<sup>63</sup> The same explanation applies to English *every*.

reduplication (overwhelming in Greek) and proposes the following structure where *i perissoteri i fitites* is treated as a DP constituent and not a quantifier.



This solution might appear initially appropriate for Spanish if we only look at sentences like the one in (97b) where both Ds are equal, singular feminine definite determiner *la*. However, Giannakidou’s idea does not seem to be easily applicable to all the cases where *la mayoría de DP* appears. In the example in (97a) e.g., the first D does not depend on the second D (the one inside the partitive) and it might well be the case that they are different. In fact, they look as though they are different, note that *la* is the Spanish singular feminine definite determiner while *los* is the plural masculine form of the Spanish definite determiner<sup>64</sup>.

A possible general solution that I consider might be on the right track is the one outlined by Moltmann (to appear: fn. 25): “Perhaps *most* is not an ordinary quantifier at

<sup>64</sup> Utpal Lahiri (p.c.) suggests that it may be the case that in Spanish *la mayoría de DP* only the definite feature (no number, no gender) of the determiner is reduplicated.

all with a meaning approximating something like *more than half* (Barwise & Cooper (1981)), but rather has the status of a referential expression meaning something like ‘the greatest relevant subgroup or subquantity’ of the entity in question, just like the comparative superlative *the most*’.

Now, if we take this analysis seriously, there seems to be a clear relation between the behaviour shown by the counterparts of *most* crosslinguistically<sup>65</sup>. In fact, it does not seem to be a coincidence that:

- (100a) Basque *gehi-en* is the superlative form of the comparative *gehi-ago* (more); in fact, *-en* is the suffix that Basque uses to form superlatives; then, to this superlative the Basque D *-a/-ak* is added (see next section).
- (100b) Greek *i* is attached to the comparative form to get the superlative *i perisoteri i NP*<sup>66</sup>.
- (100c) Spanish *la mayoria de DP* does not seem to be a case of reduplication (see above), in fact, Spanish does not provide reduplication structures with Ds.
- (100d) French *la plupart de(s) NP* seems to be behaving just like the Spanish *la mayoria de DP*.
- (100e) Catalan does not make use of definite reduplication and *la majoria dels NP* behaves just like the Spanish and French counterparts.<sup>67</sup>

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<sup>65</sup> Many languages express *most* by means of a partitive. If as I defend these elements crosslinguistically are not quantifiers but superlatives; the example that showed (*most NP*) that the Predicate Logic was unable to express quantificational expressions and that the Generalized Quantifier Theory was necessary does not appear to be so general.

It might well be the case that English *most of the NP* (not *most NP*) does not behave as a superlative and is really a quantifier. Notice that this structure never accepts a definite determiner at the beginning (*\*the most of the students*), and notice also that English does have a superlative *the most*. This is just a suggestion; I do not have an interesting answer at the moment.

<sup>66</sup> Thanks to Anastasia Giannakidou (p.c.) for help with the Greek data.

<sup>67</sup> Note that in both Catalan and French the partitive construction is a single element: *des* and *dels* respectively. These partitive forms have been claimed to be divided into the partitive preposition and the definite determiner.

(100f) Dutch *de meerderheid van de NP* (lit.: the most of the NP)<sup>68</sup> shows the same structure as the Spanish, French and Catalan counterparts.

#### **2.6.2.1.1. A Closer Look at Basque *Gehien*:**

Up to this point, Basque *gehien* has been treated as a generalized quantifier. However, this section provides evidence in favour of the idea that this element is not a real quantifier, but rather, a superlative (and hence should be analysed as such).

In Basque, adjectives are compared by means of suffixation; the superlative form takes the suffix *-en* as shown by the example (101b).

(101a) *Ikasle altua Jon da.*

student tall-D Jon is

‘The tall student is Jon.’

(101b) *Ikasle altu-en-a Jon da.*

student tall-sup.-D Jon is

‘The tallest student is Jon.’

Usually, the noun phrase representing the group being compared is uninflected as in the example in (101b). However, it can also bear the partitive case *-rik* as in (101c), take the partitive construction (ablative case) *-etatik* (101d) or the locative suffix (101e).

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<sup>68</sup> Gretel de Cuyper (p.c.).

- (101c) *Ikasle-rik altu-en-a Jon da.*  
 student-part. tall-sup.-D Jon is  
 ‘The tallest student is Jon.’
- (101d) *Ikasle-etatik altu-en-a Jon da.*  
 student-the of tall-sup.-D Jon is  
 ‘The tallest (of the) student is Jon.’
- (101e) *Ikasle-etan altu-en-a Jon da.*  
 Student-loc. tall-sup.-D Jon is  
 ‘The tallest student is Jon.’

Let us now concentrate on the behaviour shown by Basque *gehien*. *Gehi* means *plus* in Basque and its comparative form is created by means of the comparative suffix: *-ago*. For the superlative form, the suffix *-en* is used, then, to this superlative the Basque *D* is added to get the final form in (102).

- (102a) *Diputatu gehi-en-ak berandu iritsi ziren Legebiltzarrera.*  
 M.P. most-sup.-D.pl late arrive aux.past Parliament  
 ‘Most of the MPs arrived late to the Parliament.’
- (102b) *Mikelek ikasle gehi-en-ak goxokiak jaten ikusi zituen.*  
 Mikel-erg student most-sup.-D.pl candy-D.pl eating see aux.past  
 ‘Mikel saw most of the students eating candies.’

Apart from the use given to *gehien* in examples as the ones above, *gehien* can appear without the article and still create superlative forms<sup>69</sup>. According to Hualde & Ortiz de Urbina (2003b: 609), there is a difference in interpretation between these two

<sup>69</sup> There are Basque speakers (the author included) who do not accept superlative forms without the presence of the article. For these speakers, the only possible superlative construction needs to appear with the Determiner.

constructions. In an example like (103a), *fama gehien* obtains the superlative interpretation. Now, Hualde & Ortiz de Urbina claim that once you introduce the singular determiner, something like *fama gehiena* in (103b) turns out to be ambiguous between a superlative interpretation and a different one where *gehiena* is interpreted as a quantifier without comparative content.

(103a) Bera da fama **gehien** duena. (Hualde & Ortiz de Urbina (2003b: 609))

he is fame most has.comp.D

‘It is him that has the most reputation.’

(103b) Bera da fama **gehien-a** duena.

he is fame most.D.sg has.comp.D

‘It is him that has the most reputation.’

What this section is trying to show is that the Hualde & Ortiz de Urbina’s so called quantificational interpretation is not really quantificational, but rather, a superlative interpretation. It is true that the previous example does not show in a clear manner the point that I am trying to make since there does not seem to be a real difference between the two interpretations (superlative and quantificational).

However, the following examples can be used to prove that in fact both *gehien* in (104a) and the [*gehien*+D] sequence in (104b) are superlatives (example taken from Hualde & Ortiz de Urbina (2003b: 609)). Note that according to Hualde & Ortiz de Urbina, the difference between the sentences in (104) is similar to the one given for the previous examples; in this particular case, they claim that (104a) is the superlative form, while (104b) is just a regular quantifier, never superlative.

(104a) Liburutegi honek ditu liburu gehien

library this-erg has book most

‘This library has the most books.’

(104b) Liburutegi honek ditu liburu gehien-ak

library this-erg has book most-D.pl

‘This library has most (of the) books.’

From my point of view, the sentence in (104a) --without the D-- makes a comparison between libraries according to the quantity of books they have. Imagine a situation where we compare 5 libraries, the first library contains 1132 books, the second library 1101, the third 965, the fourth 951, and the fifth 873. In such a situation, the library that the sentence in (104a) makes reference to is the first one, the one that contains more books when compared to the other four.

I agree with Hualde & Ortiz de Urbina that sentence (104b) could not be correctly used in the context given above. Now, that does not necessarily mean that (104b) does not have comparative content and does not create a superlative interpretation. Let us imagine a situation where we know that the University of the Basque Country has bought 2000 books that are going to be donated to the different libraries on the different campuses of the university. The Araba Campus in Vitoria-Gasteiz is given 1500 out of those 2000 that has been bought, the Bizkaia Campus in Bilbao 275, and the Gipuzkoa Campus in San Sebastian 225. In this context, there seems to be a clear comparison between the three campuses, and the one campus that has been given the most books out of those 2000 is the one that the sentence in (104b) makes reference to, in this case, the library of the Araba Campus.

If we take back the intuition outlined by Moltmann (to appear) (“Perhaps *most* is not an ordinary quantifier at all with a meaning approximating something like *more than half* (Barwise & Cooper (1981)), but rather has the status of a referential expression meaning something like ‘the greatest relevant subgroup or subquantity’ of the entity in question, just like the comparative superlative *the most*”), it seems plausible to apply this explanation to Basque *gehien* and defend that the interpretation that this element forces is the superlative one, in the example in (104b): the greatest relevant subgroup or subquantity of books.

Let me address a potential objection to the argument that Basque *gehien* is a superlative rather than a simple quantifier. In section 2.6.1.1 I have claimed that Basque strong quantifiers do not allow appearing with the partitive form *-etatik* (of the) due to the fact that quantifiers restrict their quantificational domain just once. Since Basque strong quantifiers restrict their quantificational domain on the quantifier, no further restriction is needed in the nominal.

- (105a) \* ikasle-**etatik** guzti-**ak**  
 student-the/of all-D.pl
- (105b) \* ikasle-**etatik** den-**ak**  
 student-the/of all-D.pl
- (105c) ? ikasle-**etatik** gehien-**ak**  
 student-the/of most-D.pl
- (105d) \* ikasle-**etatik** bakoitz-**a**  
 student-the/of each-D.sg

Again, if the analysis for Basque nominal quantification presented in this chapter is on the right track, and if Basque superlative forms can appear together with partitive structures (see example (101d)), one of the two ideas presented in this section ((i) that quantificational domain restriction must happen just once or (ii) that *gehien* and its counterparts in other languages are superlatives) would seem to be incorrect.

What this section defends is that none of the two analyses presented here necessarily excludes the other. A thorough revision of the data shows that the examples in (105a-b-d) are completely out, but that most speakers agree on that (105c) --with *gehien*-- is not fully ungrammatical<sup>70</sup> and even some judge the sentence as totally natural and grammatical.

All four constructions in (105) become grammatical when *ikasleetatik* (lit.: student the.pl of) and the strong Q-dets are pronounced with a pause in between, i.e. separated by a comma (see section 2.6.1.1). In such a case, apart from being grammatical (106b), quantifiers are allowed to float, as in (106c), but with no pause, the sentences are completely out as the example in (105) and (106a) shows. (Example (106) is repeated from example (69) for convenience).

(106a) \* *Ikasleetatik guztiak/denak/bakoitza berandu iritsi ziren/zen.*

students-D.pl/of all-D.pl/all-D.pl/each-D.sg late arrive aux.pl/sg

Lit.: 'The all/all/each of the students arrived late.'

(106b) *Ikasleetatik, guztiak berandu iritsi ziren.*

students-D.pl/of all-D.abs late arrive aux

'Of the students, all (of them) arrived late.'

<sup>70</sup> Those speakers (the author included) that do not judge (105c) completely grammatical, find a clear contrast between the examples (105a-b-d), which are completely ungrammatical, and the example (105c) with *gehien*.

(106c) *Ikasleetatik, berandu iritsi ziren guztiak.*  
 students-D.pl/of late arrive aux all-D.abs.pl  
 ‘Of the students, all (of them) arrived late.’

Note that *gehien* accepts the three word orders presented in (106): it can be pronounced without a pause (107a) --something disallowed to real quantifiers--, with a pause (107b), and can also be separated from the noun by structure in between (107c) (see below).

(107a) ? *Ikasleetatik **gehienak** berandu iritsi dira.*  
 student-D.pl/of most-D.pl late arrive aux  
 Lit.: ‘The most of the students arrived late.’

(107b) *Ikasleetatik, **gehienak** berandu iritsi dira.*  
 Student- D.pl/of most-D.pl late arrive aux  
 Lit.: ‘Of the students, the most arrived late.’

(107c) *Ikasleetatik, berandu iritsi dira **gehienak**.*  
 Students- D.pl/of late arrive aux most-D.pl  
 Lit.: ‘Of the students, arrived late the most.’

Section 2.6.1.1 has shown that all of the sentences in (106) can not be treated alike: The ones in (106a) and (105a-b-d) would be real quantifiers, and they behave as such in that (as predicted) they do not accept further restriction, since quantificational domain restriction has already taken place in the Q-dets. In the examples in (106b) and (106c) on the other hand, the partitive and the Q-dets *guztiak*, *denak*, and *bakoitza* do not form a constituent.

However, the grammaticality of all the examples in (107) shows that *gehien* does not behave exactly as the Basque lexically strong quantifiers: in opposition to real quantifiers' behaviour, it can appear with both the partitive construction plus the determiner (107a). Of course, it can also be separated from the noun by a pause (107b), or separated from the noun introducing more structure in between (107c).

Some extra evidence in favour of the fact that *gehien* is a superlative (and not a quantifier) comes from the parallel behaviour shown by genuine superlatives and *gehien*. As we have previously said, in superlative constructions, the noun phrase representing the group being compared can be uninflected (108a), it can also bear the partitive case *-rik* as in (108b), take the partitive construction (ablative plural) (108c) or the locative suffix (108d).

- (108a) *Ikasle altu-en-a Jon da.* (=101b)  
 student tall-sup.-D Jon is  
 'The tallest student is Jon.'
- (108b) *Ikasle-rik altu-en-a Jon da.* (=101c)  
 student-part. tall-sup.-D Jon is  
 'The tallest student is Jon.'
- (108c) *Ikasle-etatik altu-en-a Jon da.* (=101d)  
 student-the.pl/of tall-sup.-D Jon is  
 'The tallest (of the) student is Jon.'
- (108d) *Ikasle-etan altu-en-a Jon da.* (=101e)  
 Student-the.pl/loc. tall-sup.-D Jon is  
 'The tallest student is Jon.'

It is already known that *gehien* can appear with the uninflected noun (104b) (repeated here for convenience), with the partitive construction *-etatik* (107); and

although *gehien* can not appear with the locative suffix (109d), it has no problem to appear with the Basque partitive case *-rik* (109c).

(109a) *Liburutegi honek ditu liburu gehienak.* (=104b))

library this-erg has book most-D.pl

‘This library has most (of the) books.’

(109b) *Liburutegi honek ditu liburu-etatik gehienak.*

library this-erg has book-the/of most-D.pl

‘This library has most (of the) books.’

(109c) *Liburutegi honek ditu liburu-rik gehienak.*

library this-erg has book-part. most-D.pl

‘This library has most (of the) books.’

(109d) \* *Liburutegi honek ditu liburu-etan gehienak.*

library this-erg has book-loc most-D.pl

‘This library has most (of the) books.’

Furthermore, superlatives may also be found separated from the noun (110b), just like *gehien* as the example in (110a) shows; hence, these facts can be explained without necessarily relating *gehien* to the Basque strong Q-dets.

(110a) *Ikasleetatik, berandu iritsi ziren gehienak.* (=107c))

students-of the late arrive aux most.sup.-D.pl

‘Of the students, most (of them) arrived late.’

(110b) *Euskal Herriko herrietatik, hau da ederrena.*

Basque Country village-the/of this is beautiful.sup.-D.sg

‘Among the villages of the Basque Country, this is the most beautiful one.’

Crucially, note that none of the Basque strong Q-dets are able to create grammatical sentences when combined with the partitive construction *-etatik* or with the partitive form *-rik*, in clear opposition to the behaviour shown Basque *gehien*. Lexically strong quantifiers are only grammatical when the NP is uninflected and the Q-det and the NP form a constituent as in (111a).

(111a) *Telebista guztiek/denek/bakoitzak saio txarrak dituzte/ditu.*  
 television all-D.pl/all-D.pl/each-D.sg program bad aux.pl/aux.sg  
 ‘All/all/each TV(s) have/has bad programs.’

(111b) \* *Telebistarik guztiek/denek/bakoitzak saio txarrak dituzte/ditu.*  
 television .part all-D.pl/all-D.pl/each-D.sg program bad aux.pl/aux.sg

(111b) \* *Telebistetatik guztiek/denek/bakoitzak saio txarrak dituzte/ditu.*  
 Television-the/of all-D.pl/all-D.pl/each-D.sg program bad aux.pl/aux.sg

### **2.6.2.2. Summing Up:**

Moltmann’s idea of treating *most* not as an ordinary quantifier at all with a meaning approximating something like *more than half* (Barwise & Cooper (1981)), but rather as a referential expression meaning something like ‘the greatest relevant subgroup or subquantity’ of the entity in question, just like the comparative superlative *the most* seems to be on the right track. The adoption of this analysis and its application to crosslinguistic data prevents us from having to apply special properties to elements such as Spanish *la mayoría de los NP*, Greek *i perisoteri i NP*, French *la plupart de(s) NP*, Catalan *la majoria dels NP* or Basque *NP gehien-ak* (which accepts partitive *-etatik*). If we adopted the analysis that these elements are quantifiers, some independent

explanation would be needed in order to explain why these elements (synonyms across different languages) are able to restrict their quantificational domain twice (in the quantifier and in the nominal element), an undesirable conclusion if as we have shown quantifiers only restrict their domain once.

### **2.6.2.3. Basque [DP + Guztiak/Denak/Oro]:**

Another residual case is that of Basque [DP + denak/guztiak] sequence that unexpectedly is allowed to combine directly with a DP (only when the D is a demonstrative). According to the proposal put forward for Basque quantification in this chapter, this construction should not be grammatical since we are defending that the standard Generalized Quantifier Theory is correct. In the standard Generalized Quantifier Theory Q-dets combine with component of predicative type  $\langle e, t \rangle$  (bare NP or partitive *of the NP*) and not with elements of individual type  $e$  as is the case with this construction.

(112a) Ume hauek guztiak mozorrotu egin ziren ihauterietan.  
child these all-D.pl dress up do aux.past carnivals-in  
'All these children dressed up for the carnivals.'

(112b) Ume hauek denak mozorrotu egin ziren ihauterietan.  
child these all-D.pl dress up do aux.past carnivals-in  
'All these children dressed up for the carnivals.'<sup>71</sup>

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<sup>71</sup> Although the Basque literary tradition makes use of the structure shown in (112), many Basque speakers (the author included) find these sentences a bit weird. For these speakers, the most natural construction to express something like *all of these students* would be the something like the following.

To explain the unexpected facts of (112) one could argue that the DP argument of the universal quantifiers became of predicative type<sup>72</sup> (the type expected by the quantifier to quantify over) by means of a covert type shifting procedure, hence, the ungrammaticality of the following construction with the partitive *-etatik*.

(113a) \* Ume hauetatik guztiak mozorrotu egin ziren ihauterietan.  
 child these-pl.-of all-D.pl dress up do aux.past carnivals-in  
 ‘All of these children dressed up for the carnivals.’

(113b) \* Ume hauetatik denak mozorrotu egin ziren ihauterietan.  
 child these-pl.-of all-D.pl dress up do aux.past carnivals-in  
 ‘All of these children dressed up for the carnivals.’

However, we already defended that covert type shifting is blocked by overt type shifters (see section 2.6.1.1). In order to avoid this residual case, it is possible to argue that both *den* and *guzti* are ambiguous between a real quantificational nature and a DP modifier with the semantics of an exhaustivity operator<sup>73</sup> (à la Brisson (1998, 2003)). In the examples in (112) they will behave as DP modifiers while in (113) they will have to be considered quantifiers. In (113) the partitive structure, which makes the sequence [NP DEM.pl-OF Q-D.pl] to be a constituent<sup>74</sup>, renders the sentences ungrammatical due

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- (i) Ikasle guzti hauek berandu etorri ziren.  
 student all these late come aux  
 ‘All these students arrived late.’

<sup>72</sup> Very unlikely considering demonstratives can not be predicates.

<sup>73</sup> English *all* is also ambiguous between these two interpretations. *All* in *all the NP* is not a Q-det but a DP modifier with the semantics of an exhaustivity operator. In *all of the NP* on the other hand *all* behaves as a Q-det and this is why it needs the partitive construction.

<sup>74</sup> Unless a pause is inserted between the partitive *NP-etatik* and the quantifier (see section 2.6.1.1).

to the double domain restriction (as predicted by the proposal put forward in this chapter).

Note also that *bakoitz*, the Basque inherently distributive quantifier does not accept an *e* type argument and the resulting sentence is completely out<sup>75</sup>. This shows that *bakoitz* must necessarily be a quantifier and can not function as a DP modifier with the semantics of an exhaustivity operator (à la Brisson (1998, 2003)).

- (114) \* Ume hau bakoitzak      goxoki bat jan du.  
         child this each-D.sg.erg candy one eat aux.pres.  
         Lit.: ‘Each this child has eaten a candy’

There is an element that Basque linguistics literature has analyzed as a universal quantifier and that has not been mentioned until now: *oro* --all-- (cf. i.e. Euskaltzaindia (1993: 110), Artiagoitia (2003)). This element<sup>76</sup>, just like *den* and *guzti* in (112), combines directly with DP arguments. If *oro* is taken to be a real quantifier, this behaviour is unexpected under the current approach to quantification, since as has already been argued and defended, quantifiers can not combine with argument of individual type *e*.

- (115) Gizonak oro hilkorak      dira.                      (Euskaltzaindia (1993: 113))  
         man-D.pl all mortal-D.pl are  
         ‘All men are mortal.’

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<sup>75</sup> Basque *gehien* has already been defended not to be a quantifier but a superlative.

<sup>76</sup> Mainly used in the western Basque dialects.

Again, to assume a covert type shifting of the noun from an individual to predicative type is problematic (see above). In order to circumvent this challenging case, and following the logic of the argumentation of this subsection, *oro* will not be treated as a quantifier in constructions such as the ones in (115), but rather as an exhaustive modifier (à la Brisson (1998)).

Now, *oro* can also combine with a bare noun as in (116). In such a case, *oro* appears to be behaving as a common quantifier since it combines with an element of type  $\langle e, t \rangle$ .

(116a) Gizon oro hilkorra da.  
man all mortal is  
'All men are mortal.'

(116b) Gizon orok badaki.  
man all.erg know  
'All men know it.'

One of the exceptional properties of this element is that (in opposition to the rest of Basque lexical strong quantifier) the definite determiner never composes together with the quantifier as the following example shows.

(117) \* Gizonak oro-**ak** hilkorrak dira.  
man-D.pl all-D.pl mortal-D.pl are  
'All men are mortal.'

Again, the behaviour of this element is problematic for the proposal put forward for Basque strong quantifiers. However, there is one possible way in which this problem

can be solved: It could be argued that just like English *every* or Spanish *todo*, this quantifier restricts its quantificational domain covertly in the nominal. One crucial argument in favour of this solution is that *oro* does not allow the partitive to appear with the NP.

- (118) \* Gizon-etatik oro hilkorra da.  
man-D.pl-of all mortal is  
'All of the men are mortal.'

Neither does it accept a definite determiner in the quantifier.

- (119) \* Gizon oro-ak hilkorra da.<sup>77</sup>  
man all-D.pl mortal is  
'All men are mortal.'

If this solution is on the right track, it would prove on the one hand that once the quantificational expression is restricted no more restriction is needed, and on the other that the default is to restrict the quantifier in the nominal<sup>78</sup> and that restriction on the Q-

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<sup>77</sup> The ungrammaticality of this sentence is not due to the contrast between the plural subject and the singular agreement. The following example, with both plural subject and agreement is still ungrammatical.

- (i) \* Gizon oro-ak hilkorrak dira.  
man all-D.pl mortal are  
'All men are mortal.'

<sup>78</sup> Note that English *every* and Spanish *todo* do not accept neither a partitive restricting the noun nor a determiner restricting the quantifier itself

det is only postulated if we have evidence for it (e.g. the use of a definite determiner, or other kind of marking)<sup>79</sup>.

## **2.7. Conclusion to Chapter 2:**

(i) Natural language quantification is contextually restricted by overt or covert domain variables (von Stechow (1994, 1998), S&S (2000a), Stanley (2002), Martí (2003)); crosslinguistically we must allow for both nominal restriction (St'át'imcets language) as well as for Q-det restriction, and languages differ with respect to whether they overtly or covertly restrict their quantificational domain (Giannakidou (2004)).

(ii) Basque generalized quantifiers provide clear evidence for the need of both nominal (Stanley (2002), S&S (2000a)) as well as Q-det domain restriction (Westerståhl (1985), von Stechow (1994), Martí (2003)) depending on whether the quantifiers are lexically strong or strongly interpreted weak quantifiers. Lexically strong quantifiers (*guzti* (all), *den* (all), *bakoitz* (each)) show clear evidence for Q-dets composing with D. Strongly interpreted weak quantifiers on the other hand, either incorporate partitive forms, or introduce a restriction by pragmatic means à la Büring (1996).

(iii) Assuming that Q-detP internal definite D is a nominal domain restrictor (Giannakidou (2004)), there is no need to reanalyze the standard generalized quantifier

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<sup>79</sup> Although the proposal seems to correctly follow the ideas put forward in the chapter, more analysis is needed.

theory, since it gets things right crosslinguistically. Basque data provides further support in favour of this conclusion.

(iv) It has been shown that *most NPs* (maybe not *most of the NP* --see fn. 64--) and its crosslinguistic counterparts in languages like Spanish, Greek, Catalan and Dutch do not behave as a Q-det, but rather have the status of a referential expression and behave as a superlative. A closer look at Basque *gehien* has shown that this conclusion is on the right track.

(v) *Guzti*, *den* and *oro* (not *bakoitz* that always behaves as a quantifier) have been treated as ambiguous between a real quantificational interpretation and a reading where they function as a DP exhaustive modifier (à la Brisson (1998, 2003)). *Oro*, in its quantificational interpretation seems to be behaving just like English *every* and Spanish *todo* in that it can not form a partitive construction and does not accept a definite determiner. This would show that Basque also possesses strong quantifiers that restrict their quantificational domain covertly, and as expected, the restriction will have to be done on the nominal (recall that the partitive *ikasleetatik oro* is completely out).