

CHAPTER 1

INTRODUCTION TO BASQUE QUANTIFIERS

1.1. Introduction:

Basque syntacticians have mostly concentrated on a few typologically salient aspects of the language such as ergativity, discourse configurational properties, or pro-drop. Despite some exceptions (i.e. Goenaga (1991), Eguzkitza (1993), Laka (1993), Artiagoitia (1997, 1998, 2002)) very little effort has been devoted to analyse the structure of the Basque noun phrase. The main goal of this dissertation is to explore and contribute to the understanding of the internal structure of Basque quantification and natural language quantification within the framework of Generalized Quantifier Theory (see Montague (1973), Barwise & Cooper (1981), Keenan & Stavi (1986)).

I take as the point of departure of this dissertation the observation that Basque nominal quantificational expressions show behavioural differences that have not been previously observed: Some Basque quantificational expressions (so called strong quantifiers) must necessarily appear with the article while others (so called weak NPs) are not allowed to do so. Assuming that quantification in natural languages must always

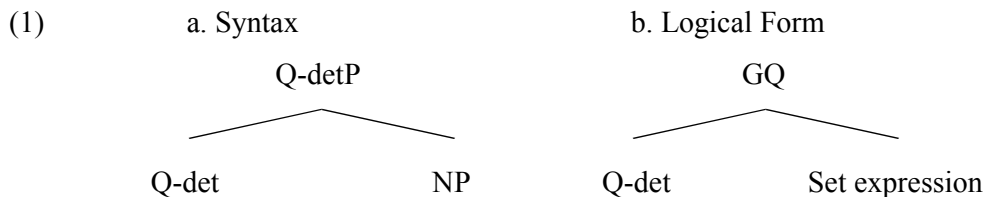
be contextually restricted and that quantificational domain restriction is always encoded syntactically (see Neale (1990), von Stechow (1994), Martí (2003), Stanley (2002), Stanley & Szabó (S&S) (2000)), this dissertation proposes, in line with a recent proposal put forward in Giannakidou (2004), a compositional structure for Basque strong quantifiers where the quantifier phrase internal definite determiner is taken to act as the quantificational domain restrictor. This analysis provides support for the conclusion that the standard analysis of Generalized Quantifiers is correct (contra Matthewson (2001)). I take the fact that the definite article is excluded from weak quantifiers as evidence for the idea that these elements are neither quantifiers nor contextually restricted, in agreement with what has been standardly defended in the literature (cf. Milsark (1979), Partee (1988), Diesing (1992), Cooper (1996), von Stechow (1998)). Basque weak quantifiers are shown to be base generated at the predicative type (cf. van Geenhoven (1996), Landman (2002)).

The important role that the determiner plays inside quantificational expressions in languages such as Basque makes it necessary to provide an analysis of the Basque definite article -A. This dissertation claims that the article is the definite determiner everywhere (in opposition to Artiagoitia (2002)), but very flexible in its ability to type shift. This property allows us to account for the various interpretations that the article can get.

The thesis begins with a short presentation of Generalized Quantifier Theory, illustrated with Basque data, and the introduction of some logical as well as some linguistic properties that help us differentiate strong from weak quantifiers in natural languages.

1.2. Generalized Quantifier Theory and Basque Nominal Quantification:

The seminal paper by Barwise & Cooper (1981) shows that natural languages contain quantifiers (such as *most*) that cannot be accounted for through Predicate Logic (which only presents the first-order logic universal (\forall) and the existential (\exists) quantifiers)¹. Montague (1973) was also aware of this problem: he tried to solve it by showing that natural language quantifiers do not quantify over all the elements of the domain, but just over a restricted set of objects. The solution to the problems posed by Predicate Logic came from defining and representing quantifiers as *restricted quantifiers*, an approach that combines the quantifier and the common noun in a complex quantificational expression which is assigned truth conditional content by means of Generalized Quantifier Theory (GQT)². An advantage of this representation is that the logical structure created by GQT is closer to the syntactic representation, and is able to solve the problem of compositionality in a neat way.



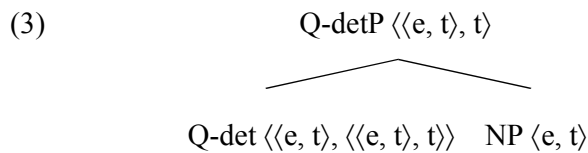
¹ This system was first introduced by Frege (1879).

² cf. von Stechow & Wunderlich (1991), Heim & Kratzer (1998), Kearns (2000), de Swart (1998), von Stechow (1994), García Murga (2002), among many others for a more detailed explanation of this point.

The compositionality principle³ can be expressed as follows:

- (2) *Compositionality Principle*: The meaning of a linguistic expression is a function of the meanings of its parts plus the way in which they are syntactically combined.

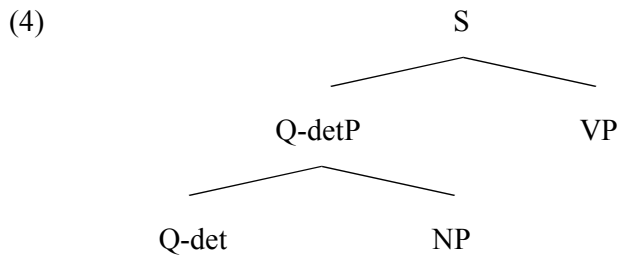
The combination of the parts of the meaning is expressed in terms of Type Theory. The compositionality of a generalized quantifier, which denotes a set of sets and is assumed to be of type $\langle\langle e, t \rangle, t\rangle$ ⁴, comes from combining a quantificational determiner $\langle\langle e, t \rangle, \langle\langle e, t \rangle, t\rangle\rangle$ (a function from sets to sets of sets (GQ)) with a Noun Phrase (NP) predicate of type $\langle e, t \rangle$.



As Barwise & Cooper (1981) claim, Q-dets are functions that map common noun denotations onto generalized quantifiers; the generalized quantifier in turn takes the VP as its argument to build a proposition.

³ About the Compositionality Principle, see Partee (1982), Pelletier (1994), Szabó (2000), García Murga & Rodríguez (2001) and references therein.

⁴ Cf. Heim & Kratzer (1998, ch.6) for discussion of why the semantic type of a GQ must be $\langle\langle e, t \rangle, t\rangle$, and not $\langle e \rangle$ or $\langle e, t \rangle$.



Taking a set-theoretic perspective, the denotation of a quantifier can be seen as a binary relation between sets of individuals (the set denoted by the NP) and the semantic value of the VP. The interpretation of Q-dets as relations between sets permits a unified interpretation of natural language Q-dets since the approach offered by Generalized Quantifier Theory takes into account the contribution of the head noun (NP). As Barwise & Cooper (1981) put it, natural language Q-dets ‘live on’ the denotation of the common noun. The ‘live on’ property has also been called ‘conservativity’⁵, and all generalized quantifiers are predicted to be conservative. What conservativity means is that the second argument of the quantifier (the VP) is evaluated in the context that the first argument (the NP) establishes. As expected, Basque nominal quantification is no exception when it comes to the property of conservativity as shown by Etxeberria (2002b); the reader is referred to this paper.

There are also certain properties that do not characterize natural language quantifiers in general, but are particular to subclasses of quantifiers. The following

⁵ *Conservativity*, *extension* and *quantity* are the three basic constraints that are usually mentioned as the constraints that must be satisfied by (logical) quantifier-determiners. See de Hoop (1992), de Swart (1998) for a detailed discussion of these three constraints. Conservativity being a logical/mathematical property, Chierchia & McConnell-Ginet (1990: 425-429) argue that it is possible to create non-conservative functions and that in fact natural languages have ways to express these non-conservative functions, but never by means of determiners. For more discussion on this see Westerståhl (1985) and Cohen (2001).

subsection will be dedicated to introduce some logical and linguistic properties that help us distinguish Basque strong quantifiers from weak ones.

1.2.1. Strong/Weak Distinction:

Barwise & Cooper (1981) provide the following definition in order to formalize the distinction between strong and weak⁶ quantifiers:

- (5) DEFINITION: A determiner is *positive strong* (or *negative strong* resp.) if for every model $M = \langle E, | | \rangle$ and every $A \subseteq E$, if the quantifier $|D| (A)$ is defined then $A \in |D| (A)$. (Or $A \notin |D|(A)$, resp.). If D is not (positive or negative) strong then D is weak.

They also provide a test-sentence which can decide whether a quantifier has to be classified as positive strong, negative strong, or weak.

- (6) Q-det N is a N/ are Ns

To classify the quantifiers it is necessary to check whether the above sentence is automatically valid, contradictory, or contingent. When applied to Basque quantifiers this test sentence yields the following illustrative cases⁷.

⁶ The terms *strong* and *weak* are taken from Milsark (1974, 1977). Milsark argues that weak determiners are *cardinal*, whereas strong quantifiers are *quantificational*.

⁷ Only three strong and three weak quantifiers are used in the examples in this chapter. The properties that these strong and weak quantifiers show apply to the rest of strong and weak quantifiers.

- (7a) Baserritar guzti-ak baserritarrak dira.
 farmer all-D.pl farmer be.pl
 ‘All the farmers are farmers.’
- (7b) Baserritar gehien-ak baserritarrak dira.
 farmer most-D.pl farmer be.pl
 ‘Most of the farmers are farmers.’
- (7c) Baserritar bakoitz-a baserritar bat da.⁸
 farmer each-D.pl farmer one be.sg
 ‘Each farmer is a farmer.’
- (7d) Baserritar batzuek baserritarrak dira.
 farmer some farmer be.pl
 ‘Some farmers are farmers.’
- (7e) Baserritar asko baserritarak dira / baserritarra da.⁹
 farmer many farmer be.pl/ farmer be.sg
 ‘Many farmers are farmers.’
- (7f) Baserritar gutxi dira baserritarrak / da baserritarra.¹⁰
 farmer few be.pl farmer / be.sg farmer
 ‘Few farmers are farmers.’

According to Barwise & Cooper a quantifier is positive strong if the statement created is a tautology in every model in which the quantifier is defined. A quantifier

⁸ For many speakers Q-detPs formed with the quantifier *bakoitz* cannot appear in the subject position of intransitive sentences due to its’ inherently distributive properties. See Etxeberria (2001, 2002a) for a more extensive account of the behaviour of *bakoitz*.

⁹ *Zenbait*, *hainbat*, *asko*, *gutxi*, and *ugari* can agree with the verb in plural or in singular. This variation yields differences with respect to the strong (proportional) or weak (cardinal) interpretations of these quantifiers (cf. Etxepare (2000), Etxeberria (2001)). These facts will not be discussed in this dissertation (see Etxeberria (in progress)).

¹⁰ *Gutxi* (agreement in plural) and *numeral baino gutxiago* are also more natural in preverbal position. The outcome is ungrammatical otherwise (see Etxeberria (in progress)). See footnote 22. One of the overt effects (among others) of focalization in Basque is the strict adjacency of the verb and the focused phrase (cf. Eguzkitza (1986), Ortiz de Urbina (1999), Uriagereka (1999) and references therein).

will be negative strong if it is a contradiction, and a quantifier will be weak if the truth of the statement depends on the model.

Universal quantifiers will be easy to classify since they always come out true even in an empty domain. Therefore, *guzti*, *den*, and *bakoitz* will be defined as positive strong. The quantifier *gehien* will be defined only if there are elements in the domain, and, when that is the case, it will be described as positive strong (following Barwise & Cooper (1981:182)). Therefore, the Basque quantifiers *guzti* (all), *den* (all), *bakoitz* (each) and *gehien* (most) should be considered positive strong quantifiers since they yield tautologies.

It is interesting to mention the fact that Basque does not have quantifiers such as English *neither*. An English sentence like (8) is translated into Basque making use of a more complex construction. *Bakar bat ere* is a Negative Polarity Item and must necessarily be licensed by a negative¹¹. Despite this difference, *bakar bat ere* behaves like English *neither* and (9) is false in every model in which the domain is defined.

(8) Neither superhero is a superhero.

(9) [Superheroi bakar bat ere]ez da superheroia.
[superhero single one even] not be.sg superhero

The characterization of weak quantifiers depends on the model, in other words, if a sentence is sometimes true and sometimes false, it is neither a tautology nor a contradiction, and the quantifier is classified as weak. Following this reasoning, a quantifier like *batzu(e)k* (some) in (7d) is described as weak because when the model

¹¹ See Etxepare (2003).

contains two or more than two farmers the sentence is judged true; but when the model contains less than two farmers the sentence will be false. The Basque quantifiers that behave this way are: *batzu(e)k* (some), *zenbait* (some), *hainbat* (some), *asko* (many), *gutxi* (few), *ugari* (many), numerals, *numeral baino gehiago* (more than numeral), *numeral baino gutxiago* (less than numeral) --cf. Etxeberria (2002b)--.¹²

1.2.1.1. Logical Properties of Basque Quantifiers:

1.2.1.1.1. Symmetry and Intersectivity:

One of the logical properties that can be used to differentiate strong quantifiers from weak quantifiers is symmetry. For a quantifier to be symmetric it must fulfil the

¹² Although Barwise & Cooper's analysis helps in making a division between strong and weak quantifiers, Keenan (1987) claims that it has to face some (intuitive) problems

- (i) given that numerals like *two farmers* or quantifiers like *some farmers* are considered weak (have no denotation defined) in models where the denotation of the common noun is the empty set,
- (ii) when the class of quantifiers is extended to more complex but trivial quantifiers such as *at least zero*, *either infinitely many or else just finitely many*, *fewer than zero*, etc. These quantifiers would be wrongly predicted to be strong according to Barwise & Cooper's approach since existential sentences created with these quantifiers are completely grammatical

Keenan (1987)'s analysis solves these two problems by (i) introducing the zero property in the domain of quantifiers like *two* or *some* and (ii) positing a new definition that correctly predicts which quantifiers can appear in existential sentences.

- (iii) DEFINITION:
 - a. A basic determiner is called *existential* iff it is always interpreted by an existential function, where
 - b. A function f from properties to sets of properties is *existential* iff for all properties p, q

$$p \in f(q) \quad \text{iff} \quad 1 \in f(q \ \& \ p)$$

The division we get between Basque strong and weak quantifiers following Keenan's definition is identical to the division we got following the test sentence introduced by Barwise & Cooper (1981). The Basque quantifiers that this dissertation is trying to describe does not cover the Basque counterparts of such complex expressions as *at least zero*, *either infinitely many or else just finitely many*, *fewer than zero*, etc.

equivalence presented in (10); and if that is the case, the quantifier will be described as weak.

(10) Symmetry:

$$D(A)(B) \leftrightarrow D(B)(A)$$

The prediction is then that *guzti*, *den*, *gehien*, and *bakoitz* (described as strong quantifiers in the previous section) will not show the equivalence presented in (10). This prediction is borne out as the examples (11a-d) show.¹³

(11a)	Euli guzti-ak itsusiak dira. fly all-D.pl ugly be 'All of the flies are ugly.'	←/→	(gauza) itsusi guzti-ak euliak dira. thing ugly all-D.pl fly be 'All of the ugly (thing)s are flies.'
(11b)	Euli den-ak itsusiak dira. fly all-D.pl ugly be 'All of the flies are ugly.'	←/→	(gauza) itsusi den-ak euliak dira. thing ugly all-D.pl fly be 'All of the ugly (thing)s are flies.'
(11c)	Euli gehien-ak itsusiak dira. fly most-D.pl ugly be 'Most of the flies are ugly.'	←/→	(gauza) itsusi gehien-ak euliak dira. thing ugly most-D.pl fly be 'Most of the ugly (thing)s are ugly.'
(11d)	Euli batzuk itsusiak dira. fly some ugly be 'Some flies are ugly.'	← →	(gauza) itsusi batzuk euliak dira. thing ugly some fly be 'Some ugly (thing)s are flies.'
(11e)	Euli asko itsusiak dira. fly many ugly be 'Many flies are ugly.'	← →	(gauza) itsusi asko euliak dira. thing ugly many fly be 'Many ugly (thing)s are ugly.'

¹³ The strong quantifiers *guzti* and *den* have different origins. *Guzti* historically derived from an adjective, *-ti* is a suffix that creates adjectives (see Chapter 2, §2.6.1.3). *Den* on the other hand derived from the relative form *den*; *dena*, a free relative, would mean 'what there is', implying that we make reference to 'everything there is', probably due to the article (*den-a*).

- (11f) Euli gutxi dira itsusiak. ← → (gauza) itsusi gutxi dira euliak.
fly few be ugly thing ugly few be fly
'Few flies are ugly.' 'Few ugly (thing)s are ugly.'

The quantifiers in the examples (11d-f) are symmetric and must therefore be considered weak. These quantifiers give the cardinality of a set defined as the intersection of the sets A and B; since intersection is symmetric, the roles of the A set and the B set in the relation can not differ.

(12) Intersectivity:

$$D(A)(B) \leftrightarrow D(A \cap B)(B)$$

(13) A = the set denoted by *euli* (fly).

B = the set denoted by *itsusia izan* (be ugly).

(14) Strong Quantifiers

$$[[A \text{ guzti-ak } B \text{ dira}]] \quad A \subseteq B$$

A all-D.pl B are

$$[[A \text{ den-ak } B \text{ dira}]] \quad A \subseteq B$$

$$[[A \text{ bakoitz-a } B \text{ da}]] \quad A \subseteq B$$

$$[[A \text{ gehien-ak } B \text{ dira}]] \quad |A \cap B| > |A - B|^{14}$$

¹⁴ It is because of the fact that *guzti*, *den*, and *bakoitz* are universal quantifiers that the three elements are described the same way in (14), that is, the set denoted by the common noun is a subset of the set denoted by the VP. *Gehien* is not a universal quantifier and what $|A \cap B| > |A - B|$ means is that the cardinality of the intersection of the set A and the set B is bigger than the cardinality of the set of elements in A that are not B. The important thing to observe is that with these four quantifiers it is necessary to know the elements in A (that are B) in order to derive the truth values of the sentence, and the rest of the set B is not relevant to the truth conditions. However, see Chapter 2, 2.6.2.1.1, where it is defended that *gehien* and its crosslinguistic counterparts are not quantificational expressions, but rather superlatives.

Weak Quantifiers

[[A batzu(e)k B dira]]	$ A \cap B \geq 2$
[[Zenbait A B da/ dira]]	$ A \cap B \geq 2$
[[Hainbat A B da/ dira]]	$ A \cap B \geq 2$
[[A asko B da/ dira]]	$ A \cap B = \text{asko}$
[[A gutxi B da/ dira]]	$ A \cap B = \text{gutxi}$
[[A ugari B da/ dira]]	$ A \cap B = \text{ugari}$
[[Numeral A B dira]]	$ A \cap B = \text{numeral}$
[[Numeral A baino gehiago B dira]]	$ A \cap B > \text{numeral}$
[[Numeral A baino gutxiago B dira]]	$ A \cap B < \text{numeral}$

While Basque strong quantifiers express a proportion of the A set, weak quantifiers denote the cardinality of the set derived from the intersection of the sets A and B. For example, in a sentence like *euli guztiak itsusiak dira* the Q-det *guztiak* denotes a relation between the sets A (flies) and B (the individuals which are ugly). For the sentence to be true the set A must be a subset of B. If there is a member of the set A that is not also a member of the set B, the sentence will be considered false.

1.2.1.2. Linguistic Properties of Basque Quantifiers:

1.2.1.2.1. Existential Sentences:

It was Milsark (1974, 1977) who first pointed out that the strong/weak distinction plays an important role in the interpretation of existential *there be* constructions. Existential sentences exhibit the so-called *definiteness effect*, which means that although some noun phrases (indefinites) are acceptable in *there*-insertion

sentences, others (definites) are not. As a consequence, we distinguish between weak quantifiers which are acceptable in the position after *there be*, and strong quantifiers, which are unacceptable in this context. As predicted, and unlike weak quantifiers (15e-m), Basque strong quantifiers are not acceptable in existential sentences (15a-c).

- (15a) * Badira zientzilari guzti-ak laborategi honetan.
 yes-be.pl scientist all-D.pl laboratory this-in
 ‘* There are all of the scientist at this laboratory.’
- (15b) * Badira zientzilari gehien-ak laborategi honetan.
 yes-be.pl scientist most-D.pl laboratory this-in
 ‘* There are most of the scientist at this laboratory.’
- (15c) * Bada zientzilari bakoitz-a laborategi honetan.
 yes-be.sg scientist each-D.sg laboratory this-in
 ‘* There is each scientist at this laboratory.’
- (15d) Badira zientzilari batzuk laborategi honetan.
 yes-be.pl scientist some laboratory this-in
 ‘There are some scientists at the laboratory.’
- (15e) Bada/Badira zientzilari asko laborategi honetan.
 yes-be.pl scientist many laboratory this-in
 ‘There are many scientists at this laboratory.’
- (15f) Laborategi honetan zientzilari gutxi dago/daude.
 laboratory this-in scientist few be.sg/pl
 ‘There are few scientists at this laboratory.’
- (15g) Laborategi honetan bi zientzilari baino gutxiago daude.
 laboratory this-in two scientist than less be.pl
 ‘There are less than two scientists at this laboratory.’¹⁵

¹⁵ Freeze (1992) claims that existential sentences can be expressed in two different ways: on the one hand, there are languages that make use of what has been called ‘locative inversion’ (represented in (ib) in boldface) (see also Bresnan (1994) where arguments are provided to claim that there exists a universal argument structure for ‘locative inversions’); on the other hand, “in a few languages, instead of a

constituent order alternation, we find a proform in the existential (Freeze 1992: 556)” which can never be adjacent to the locative phrase as the English example in (iib) shows.

FINNISH

- (ia) mies on huonee-ssa. LOCATIVE: Theme V Locative
 man.NOM is room-INESSIVE
 ‘The man is in the room.’
- (ib) huonee-ssa on mies. EXISTENTIAL: **Locative V Theme**
 room-INESSIVE is man.NOM
 ‘There is a man in the room.’

ENGLISH

- (ia) The book is on the table. LOCATIVE: Theme V Location
- (iib) There is a book on the table. EXISTENTIAL: **Proform V Theme Location**

“The predicate locative and the existential contain essentially the same constituents but display them in different order [...]: if the theme argument is definite, it is the subject, but if it is indefinite, the locative phrase is the subject. [...] No language allows the existential to have a definite theme; if the theme is definite, the structure must be that of a predicate locative. [...] An indefinite theme is restricted to the existential, though the subject of the predicate locative may be either definite or indefinite (Freeze 1992: 557)”.

Freeze also claims that in opposition to what occurs in SVO languages, where the two kinds of existentials (‘locative inversion’ and proform) are found, all SOV languages (Persian, Mayo (Uko-Aztecán), and Japanese in his analysis) have ‘locative inversion’ kind of existential constructions and none has a proform existential.

Basque is also an SOV language, and as described by Freeze, it can make use of ‘locative inversion’ in order to create existential sentences (iiiib). Definites can also appear in ‘locative inversion’ constructions in the western dialects of Basque (cf. example (iiic)). Note however that Labourdine (an eastern Basque dialect) does not accept the construction in (iiic) (thanks to Maia Duguine and Beñat Oihartzabal (p.c.) for this information and for noting that eastern dialects do not use *dago/daude* (is/are-egon) but simply *da/dira* (is/are)); what this would show is that these constructions are necessarily existentials (not locatives) in this dialect (although further research is required I believe this is also the case in the other two eastern dialects: Zuberoan and Low Navarrese).

The grammaticality of sentences like those in (iiic) in western dialects however, is not such a strong argument against Freeze’s generalization, since although the definite appears in a ‘locative inversion’ context (contra what Freeze predicts) and there is an alteration in the word order, the sentence can not be interpreted existentially, and must be taken as locative instead.

BASQUE

- (iiiia) Gizon-a gelan dago. LOCATIVE: Theme Locative V
 man-ART room-LOC is-egon.SG
 ‘The man is in the room.’
- (iiiib) Gelan gizon bat dago. EXISTENTIAL: **Locative V Theme**
 room-LOC man a is-egon.SG
 ‘There is a man in the room.’
- (iiic) Gelan gizon-a dago. * EXISTENTIAL
 room-LOC man-ART is-egon.SG ✓ LOCATIVE
 ‘The man is in the room.’

Nevertheless, ‘locative inversion’ is not the only way in which Basque can form existential sentences. Against the prediction made by Freeze’s generalization, Basque (an SOV language) has a proform *ba-* used to create, among other things, existential sentences. For other uses of *ba-* see Oyharçabal (1984), Etxepare (2003) and references therein.

- (iva) Bada gizon bat gelan. EXISTENTIAL: **Proform V Theme Location**
 yes-is man a room-LOC
 ‘There is a man in the room.’

1.2.1.2.2. Presuppositionality:

The property of presuppositionality¹⁶ with regard to quantificational elements is illustrated by means of a classical paradigm introduced by Lumsden (1988) (examples (43a-d) are taken from Zucchi (1995)). Considering the examples in (16) we conclude that only the strong quantifiers *guzti*, *den*, *gehien*, and *bakoitz* presuppose the existence denoted by the set they are applied to (*akats* (mistake) in the case at hand). Weak quantifiers on the other hand would not be described as presuppositional since they do not presuppose the existence of the denotation of the common noun.

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- (iv) Badira gizon batzuk gelan. EXISTENTIAL: **Proform V Theme Location**
yes-are man some room-LOC
'There are some men in the room.'

Observe that the constituent order of the sentences in (iv) is equal to the English example in (iib). Note also that definites give rise to ungrammatical sentences when existentials are formed making use of the proform *ba-* as the following example shows.

- (va) * Bada gizon-a gelan. EXISTENTIAL: **Proform V Theme Location**
yes-is man-ART.sg room-LOC
'* There is the man in the room.'
- (vb) * Badira gizon-ak gelan. EXISTENTIAL: **Proform V Theme Location**
yes-are man-ART.pl room-LOC
'* There are the men in the room.'

¹⁶ The classical definition of presuppositional relations can be described as follows:

- (i) The sentence A presupposes B if and only if A entails B and the negation of A entails B.

It follows from this definition that (in bivalent systems) B has to be true for A to have a truth-value. In other words, if B is false A can not receive a classical truth-value. This is the logical test that is used to test whether a sentence A presupposes a sentence B. The pragmatic test relates the presupposition of a sentence with old/salient/given information. See Garcia Murga (1998) for discussion of this point. The notion of presuppositionality has been widely discussed in the literature, cf. Stalnaker (1974), Karttunen (1974), Geurts (1995), Garcia Murga (1998) and references therein.

- (16a) Akats guzti-ak aurkitzen badituzu, goxoki bat emango dizut.
 mistake all-D.pl find if-aux. candy one give aux.
 ‘If you find all of the mistakes, I’ll give you a candy.’
- (16b) Akats gehien-ak aurkitzen badituzu, goxoki bat emango dizut.
 mistake most-D.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.¹⁷
 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.’
- (16d) Akats batzu(e)k aurkitzen badituzu, goxoki bat emango dizut.
 mistake some find if-aux. candy one give aux.
 ‘If you find some mistakes, I’ll give you a candy.’
- (16e) Akats asko aurkitzen badituzu, goxoki bat emango dizut.
 mistake many find if-aux. candy one give aux.
 ‘If you find many mistakes, I’ll give you a candy.’
- (16f) Akats gutxi aurkitzen badituzu, goxoki bat emango dizut.
 mistake few find if-aux. candy one give aux.
 ‘If you find few mistakes, I’ll give you a candy.’¹⁸

¹⁷ Due to its inherent distributive properties, *bakoitz* is grammatical only in those situations where there is an element (a distributee which can not be the event variable) deeper in the structure over which to distribute (cf. Etxeberria (2002b)). This is the reason why I have changed the example in (16c). Note that the majority of Basque speakers judge the sentence in (i) (parallel to those in (16)) as ungrammatical

- (i) ?* Akats bakoitz-a aurkitzen baduzu, goxoki bat emango dizut.
 mistake each-D.pl find if-aux. candy one give aux.
 ‘If you find each mistake, I’ll give you a candy.’

¹⁸ Note that in conditional sentences the presupposition can disappear (Kartunnen (1974)). I.e., the presupposition of a factive verb (*realise* in (i)) disappears when in the antecedent of a conditional sentence.

- (i) If George realises that he didn’t tell the truth about the atomic weapons, he will resign the party leadership.

However, there is still a clear distinction between the sentences in (16a-c), with strong quantifiers, and those in (16d-f), with weak quantifiers. The former clearly presuppose the existence of the denotation of the common noun, the latter do not necessarily do so. Thanks to Fernando Garcia-Murga (p.c.) for extensive discussion on this point.

Once we consider all these properties, the division we get between Basque strong and weak quantifiers is the following (cf. Etxeberria (2002b)):

(17)

Strong Quantifiers: *guzti* (all), *den* (all), *gehien*¹⁹ (most), *bakoitz* (each).

Weak Quantifiers²⁰: *batzu(e)k* (some), *zenbait* (some), *hainbat* (some)²¹, *asko* (many), *gutxi* (few), *ugari* (many), numerals, *numeral baino gehiago* (more than numeral), *numeral baino gutxiago* (less than numeral)²², etc.

¹⁹ See footnote 13 and 14.

²⁰ Montague (1973) or Barwise & Cooper (1981) treat weak/cardinal quantifiers as quantificational determiners of type $\langle\langle e, t \rangle, \langle\langle e, t \rangle, t \rangle\rangle$, which combined with a one-place predicate of type $\langle e, t \rangle$ create a GQ of the standard type $\langle\langle e, t \rangle, t \rangle$. For ease of exposition and following standard terminology, these elements have been and will be referred to as *weak quantifiers* throughout the whole dissertation. However, as will be made explicit in chapter 3, I do not treat *weak quantifiers* as real quantifiers (see Partee (1987), Diesing (1992), van Geenhoven (1996), Landman (2002) and references therein).

²¹ *Batzu(e)k*, *zenbait*, and *hainbat* are translated as ‘some’. However, there is a subtle distinction between the three. While *batzu(e)k* can be used when we refer to a set of just two members, the other two seem to make reference to a bigger plurality.

- (i) Lagun batzu(e)k etorri dira, Mikel eta Jon hain zuzen ere.
friend some come aux Mikel and Jon so correctly too
‘Some friends have come, precisely Mikel and Jon.’
- (ii) *? Zenbait/Hainbat lagun etorri dira, Mikel eta Jon hain zuzen ere.
some/some friend come aux Mikel and Jon so correctly too
‘Some friends have come, precisely Mikel and Jon.’

²² *Gutxi* (few) and *numeral baino gutxiago* (less than numeral) show some particular properties that make them different from the rest of the weak quantifiers. The behaviour of these Basque downward monotonic quantifiers is similar to focus operators in that they induce a change in the basic word order of the clause (see Haegeman (2000)). They must necessarily occupy the preverbal position, irrespective of their grammatical function. Thus, *gutxi* and *numeral baino gutxiago* in (ia) and (iia) respectively, appear in preverbal position and are grammatical; in case they are moved from this preverbal position, the sentences become ungrammatical as (ib) and (iib) show.

- (ia) Politikari gutxi irakurri zituzten Michael Moore-en liburuak.
politician few-erg read aux.past.pl -gen book-D.pl.abs.
‘Few politicians read Michael Moore’s books.’

1.3. Overview of the Dissertation:

This dissertation consists of five chapters, including this first one.

In Chapter 2 I first present Matthewson (2001)'s proposal, who claims that the standard analysis of quantification offers little comparative scope and puts forward a new quantificational structure based on a two-step process, where the quantifier must be combined with a DP, not with an NP as the standard analysis of Generalized Quantifiers defends. Then, I present Giannakidou (2004)'s proposal who argues that Matthewson's analysis can not be extended crosslinguistically and that the Q-detP internal D functions as a domain restrictor. She concludes that the standard analysis of GQs is in fact perfectly able to explain quantificational facts crosslinguistically. The only extra assumption that we need to make is that languages differ with respect to whether they overtly or covertly restrict their quantificational domain (see also Etxeberria (2004a)).

Assuming that quantification in natural languages must always be contextually restricted and that quantificational domain restriction is always encoded syntactically (see Neale (1990), von Stechow (1994), Martí (2003), Stanley (2002), Stanley & Szabó (2000)); Chapter 2, in line with Giannakidou (2004), proposes a compositional structure

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- (ib) * Politikari gutxik Michael Moore-en liburu-ak irakurri zituzten.
politician few-erg -gen book-D.pl.abs read aux.past.pl
'Few politicians read Michael Moore's books (intended).'
- (iia) Bost kazetari baino gutxiagok ikusi zituzten Woody Allen-en filmak.
five journalist than fewer-erg watch aux.past.pl -gen film-D.pl.abs.
'Less than five journalists watched Woody Allen's movies.'
- (iib) * Bost kazetari baino gutxiagok Woody Allen-en filmak ikusi zituzten.
five journalist than fewer-erg -gen film-D.pl.abs watch aux.past.pl
'Less than five journalists watched Woody Allen's movies (intended).'

See Ortiz de Urbina (1989b), Etxepare (2003). See also Etxeberria (in progress).

for Basque strong quantifiers where the quantifier internal definite determiner (obligatory with strong quantifiers) is taken to function as the (overt) quantificational domain restrictor. This analysis provides further support for the conclusion that the standard analysis of GQs is correct (contra Matthewson (2001)).

Chapter 3 proposes an analysis for Basque weak quantification. Considering that the Basque definite determiner (-A) is excluded from weak quantifiers (except numerals) these elements are shown to be neither quantifiers nor contextually restricted (cf. Milsark (1977), Partee (1988), Diesing (1992), Cooper (1996), von Stechow (1998)). For situations where there is no overt definite determiner but still the proportional interpretation is available, I assume Büring (1996)'s proposal where the Topic/Focus/Background Structure accounts for the proportional reading of weak quantifiers. Basque weak quantifiers are claimed to be base generated in the predicative type, in the functional projection Number Phrase -NumP- (either in the specifier or in the head position of NumP, some allowing both positions), located below DP.

In Chapter 4, in contrast to what has been assumed by other scholars (i.e. Goenaga (1980, 1991), Euskaltzaindia (1993), Ticio (1996), Artiagoitia (1997, 1998, 2002), Rodriguez (2003), Trask (2003), among others), the Basque definite determiner -A and plural marker -K are claimed to be base generated in different syntactic positions: the base position of the plural marker -K will be [Head, NumP] while the base position of the Basque definite determiner -A is argued to be [Head, DP]. Thus, it is proposed that the Basque definite article -A, is just that, a definite article and as such must always be base generated in the DP head; in short, -A will be argued to be a definite determiner everywhere, but very flexible in its ability to type-shift (note that bare nouns are not allowed in Basque). Then, the different interpretations that definites can get in Basque

(kind, specific, existential) will be shown to follow from the Neocarlsonian approach (see Chierchia (1998c), Dayal (2004), Zamparelli (2002a, 2002b) and references therein). In that approach, the existential interpretation of definites (in object position) is dependent on the kind-level reading (see Chierchia (1998c)). Basque is claimed to be typologically in between English and French in this regard: the former makes use of bare nouns to get the existential interpretation while the latter needs the definite plus the partitive preposition *de* (*du* (< *de le*) for mass terms, *des* (< *de les*) for plural count terms) to express the same meaning; in Basque, the article is overt while the preposition is claimed to be covert.

Finally, Chapter 5 presents the concluding remarks of the thesis.