# Number agreement in Basque: counting vs. measuring

Urtzi Etxeberria, Ricardo Rikardo, R. Etxepare

# Number agreement in Basque: Counting vs. Measuring[1]

*Urtzi Etxeberria & Ricardo Etxepare*

**Abstract**

This paper argues that Basque non-agreeing quantifiers are conceptually measures and that measures head their own functional projection in the expanded structure of the Noun Phrase. This functional projection is placed in-between the Classifier Phrase (where division occurs) and the Number Phrase (where counting occurs), following Borer (2005). The distinction we make between the measuring field (in Measure Phrase position) and the counting field (in NumP position) affects referentiality; in fact, agreement and reference only become relevant upon reaching NumP –not before that position, i.e. not in Measure Phrase position. We also show that non-agreeing quantifiers are sensitive to the nature of the predicates they associate with.

## 1    Introduction: the phenomenon

Usually, Basque plurality denoting nominal expressions trigger obligatory agreement in number with the inflected verb.[2]

(1)    Anek    liburu-ak    erosi ditu/*du
        Ane.erg book-D-pl  buy  have.pl/have.sg
        'Ane has bought (the) books'

However, it has been noted (see Rotaetxe 1979; Txillardegi 1977, 1978; EGLU 1985; Etxepare, 2000) that so called 'vague' weak quantifiers in Basque only optionally agree in number with the inflected verb (2a-d).[3,4]

(2)    a.    Bezero    asko etortzen    da/dira halako egunetan
              customer many come-hab is/are   such    days-in
              'A lot of customers come on such days'
        b.    Bezero    gehiegik        eskatu du/dute        arrain zopa
              customer too-many-erg asked aux-sg/aux-pl fish soup
              'Too many customers asked for fish soup'
        c.    Maiak    lagun gutxi ikusi du/ditu          gaur
              Maia.erg friend few   seen aux-sg/aux-pl today
              'Maia has seen few students today'
        d.    Gure bezero    ugari          aurkitu dut/ditut        beste denda horretan
              our   customer big-number found   aux-sg/aux-pl other  shop   that-in
              'I found a big number of our customers in that shop'

The notion of what we mean by 'vague' weak quantifier can be intuitively grasped by means of the following contrast:

(3) a. Mila    ikasle etorri dira/*da
       thousand student come aux-pl/aux-sg
       'One thousand students came'
    b. Milaka         ikasle etorri dira/da
       thousand-suffix student come aux-pl/sg
       'Thousands and thousands of students came'

Whereas (3a), which involves a definite quantity, triggers plural agreement in the inflected verb, (3b), which involves a non-definite quantity (equivalent to *thousands of* in English), only optionally triggers agreement. Cardinal quantifiers, in the varieties of Basque we focus on here, always trigger plural agreement. Vague quantificational expressions constructed out of them, on the other hand, may not.

This phenomenon is general in the Basque area, with some interesting dialectal variation that we will not be able to address here (see Etxeberria and Etxepare, to appear). The present paper offers a preliminary analysis of the phenomenon. We claim that non-agreeing quantificational expressions are not counting expressions, but *measure phrases*. Measures constitute the other quantificational domain in Basque that presents an agreement alternation in number:[5]

(4) Hiru litro ardo edan  du/ditu
    three liter wine drunk aux-sg/aux-pl
    'He/she drank three liters of wine'

We may wonder at this point what the agreement alternation is: is it an alternation between plural number features and singular ones? Or is the singular agreement form just a default, selected in the absence of any number feature? It is not easy to answer to this query directly in the context of the inflected forms. However, if we move to other syntactic contexts, the answer seems to favor the conclusion that third person singular agreement, in the context of vague quantifiers in Basque, is just a default, with no correspondence with actual number features. One such context is provided by secondary predication, which requires agreement in number (see Artiagoitia, 1994). The example in (5) gives an illustrative example with a Small Clause complement:

(5) Liburuak   hondatu(*-ak) ikusi ditut
    book-D.pl worn-out.pl     seen aux.pl
    'I've seen (the) books worn-out'

The sentence (5) contains a Small Clause predicate *hondatuak* 'worn-out' which obligatorily agrees in number with the subject *liburuak* 'books'. Now consider the contrast in (6):

(6) a. Liburu asko  hondatuak   ikusi ditut
       book   many worn-out.**pl** seen  aux.pl
       'I've seen many books worn-out'
    b. *Liburu asko  hondatua      ikusi dut
        book   many worn-out.**sg** seen  aux.sg
       'I've seen many books worn-out'

Whereas a vague quantifier that agrees in the plural with the inflected verb licenses a secondary predicate with a plural suffix -*k* on it, a vague quantifier that does not agree in the plural cannot license singular agreement in the secondary predicate either. The conclusion seems to be that agreement in the singular with the quantifiers that do not agree in the plural with the verb is impossible, and that therefore, the relevant quantifier forms must lack number features, either plural or singular.[6] That the problem is in number agreement and not, say, in the ability of non-agreeing quantifiers to license a secondary predication is shown by the following fact: if we allow for a secondary predicate that does not have number, secondary predication with vague quantifiers becomes possible. One relevant configuration involves the [-ta] adverbial ending for participles, which does not agree in number in Basque. When the participial substitutes for the [determiner+number] suffix, secondary predication with vague quantifiers becomes possible (7).

(7)    Liburu asko  hondatu-ta     ikusi dut/ditut
       book    many worn-out.part seen  aux.sg/aux.pl
       'I've seen many books worn-out'

The main hypotheses we defend in this paper are the following: first, we will argue that non-agreeing quantifiers are conceptually measures. Basque shows that measures head their own functional projection in the expanded structure of the Noun Phrase. This functional projection is placed in-between the Classifier Phrase (where division occurs), and the Number Phrase (where counting occurs, following Borer 2005). We also show that certain referential properties, such as the possibility of establishing a discourse variable, and the potential for the enumeration of individuals crucially require the projection of the counting number head. Besides projecting a dedicated functional structure, we also show that non-agreeing quantifiers are sensitive to the nature of the predicates they associate with. Measure Phrases seem to measure both individuals and events/states, as long as the latter denote non-trivial part-whole structures. The predicate sensitivity of measuring quantifiers, we claim, has two sources: one is the monotonicity constraint proposed by Schwarzschild (2002) as holding of measure functions universally; the other one is a homomorphism relation (Krifka 1989; Filip 1996; Nakanishi 2004, 2007) which maps the denotation of a noun phrase into the denotation of the predicate. The predicate sensitivity of non-agreeing quantifiers can thus be viewed as the result of this mapping relation.
The paper is organized as follows: in section 2 we present the received analysis concerning the agreement alternation in Basque. Section 3 provides arguments against this view. Section 4 shows that non-agreeing quantifiers must be interpreted distributively. This imposes certain restrictions on the class of predicates they can co-occur with. Section 5 discusses the nature of the quantifiers involved in the agreement alternation. It is shown that the relevant quantifiers are so-called degree-quantifiers (Doetjes 1997): quantifiers which combine with any syntactic constituent as long as it can be interpreted cumulatively. Section 6 suggests some cross-linguistic analogues of the Basque alternation. Section 7 discusses the semantic basis of predicate sensitivity. Section 8 proposes a syntactic structure for non-agreeing quantifiers. Section 9 presents the conclusions of this paper.


**2      A previous view: non-agreeing cases as masses**

The descriptive grammar of Euskaltzaindia (1985: 223-224) assimilates the absence of number agreement with weak quantifiers to the absence of number in mass terms. Take for instance the contrast in (8).

(8)   a.   Haragi asko   jaten   du
           meat    much eat-hab aux.sg
           'He eats a lot of meat'
      b.   Haragi asko   jaten   ditu
           meat    many eat-hab aux.pl
           'He eats many types of meat'

The presence of number agreement in (8b) triggers a count interpretation of the mass term *haragi* 'meat', which comes to denote a set of individualized meat types. The grammar of the Academy suggests that the absence of number agreement with count terms has the opposite effect: it converts count terms into mass terms. The grammar comments on the following sentences in (9).

(9)   a.   Liburu asko   erosi   dut
           book   many bought  aux-sg
           'I bought many books'
      b.   Liburu asko erosi    ditut
           book   many bought aux-pl
           'I bought many books'

According to the Academy's grammar, (9a) and (9b) do not have the same interpretation: whereas "in the first case we consider a mass of books; in the other case we consider one book and then another one, and another one, and so on" (1985: 223). To make things clearer, the grammar presents the following case.

(10)  a.   Harri  asko bota    dute
           stone  much thrown aux-sg
           'They threw a lot of stone'
      b.   Harri asko bota    dituzte
           stone many thrown aux-pl
           'They threw many stones'

In (10a) *harri* 'stone' is taken to be non-count, as a big quantity of stone. In (10b) it refers to a big quantity of stones (as a count term). The Academy's grammar does not go beyond the intuition above. Although we will not pursue this line of analysis, we share the intuition that (10b) offers more opportunities for an individualized treatment of the stone than (10a). For instance, (10b) would be more appropriate to describe a situation where demonstrators attack the police by throwing stones to them. This implies the existence of individualized pieces of stone, and a multiplicity of stone-throwing events. (10a) on the other hand, would be more appropriate to describe loads of stone being dumped during some road construction. For argument's sake, if we were to reformulate the Academy's proposal slightly, it could be stated as saying that number morphology coerces masses into counts (11), whereas absence of number morphology coerces count nouns into masses (12):

(11) Mass:
    a.    Ardoa  edan  dut
        wine-D drunk aux
        'I drank wine'
    Plural count:
    b.    Ardoak    edan  ditut
        wine-D-pl drunk aux-pl
        'I drank wines'

(12) Plural count:
    a.    Ikasle  asko  ikusi ditut
        student many seen  aux-pl
        'I have seen many students'
    Mass:
    b.    Ikasle  asko  ikusi dut
        student many seen aux
        'I have seen much student'

## 3    Are non-agreeing quantifiers mass?

It can be shown however that non-agreeing quantifiers are not mass terms. As a starting point, we consider Pelletier's well known thought experiment (1975) to characterize mass terms. He proposes the existence of two imaginary machines, that he calls the Universal Grinder and the Universal Objectifier. For the Universal Grinder, we are to imagine a device which can grind anything, no matter how big or small. Into one end of the device "is inserted an object of which some count expression is true, and from the other end spews forth the finely-ground matter of which it is composed. So a hat is entered into the grinder and after a few minutes there is hat all over the floor" (from Pelletier and Schubert 1989:342). This is so despite the fact that we could also have said that there is felt all over the floor, using a mass expression. Examples of this type "show that many count expressions can be seen to already have within them a mass sense or a mass use" (ibidem: 343). Taking the word *sagar* 'apple' as our putative count term, we could take (13) to involve the mass coming out of the Universal Grinder:

(13) Entsaladak   sagar pixkat dauka
     salad-D-erg apple bit     has
     'The salad has a bit of apple in it'

Take, however, something like (14), with a non-agreeing vague quantifier:

(14) Ikasle asko   ikusi dut    gaurko  batzarrean
     student a lot of seen I-have today's  meeting-D-in
     'I have seen a lot of students in today's meeting'

The sentence in (14), with a non-agreeing quantifier, does not involve a mass term, in Pelletier's sense: what I have seen in (14) is not scattered pieces of student, but a number of students, all of them of a piece. True, the force of this argument against a mass-approach to non-agreeing quantifiers depends on the force of Pelletier's metaphor to characterize mass terms as a whole. We know that in this sense, the metaphor is not comprehensive enough. Other mass terms appear to reflect objects that we would better locate in the entering side of the machine. This is the case of mass terms like *furniture* or *crockery* (Chierchia 1998): ground-up furniture and furniture do not mean the same, despite the mass status of the term. In any case, even with simple ambiguous nouns such as *apple*, the mass-approach falls short of accounting for the range of interpretations that non-agreeing cases have. Consider a sentence like (15):

(15)  Plater honetan sagar asko  ikusten dut
      dish    this-in   apple many see       aux-sg
      'I see a lot of apple in this dish' or
      'I see a lot of apples in this dish'

As shown by the translations, non-agreeing quantifiers can be interpreted in two ways: either as mass terms, referring to a quantity of apple, or as referring to a plural set of (whole) apples. In other words: the sentence in (15) can be interpreted as making reference to, say, a dish containing a set of piled-up entire apples. The mass-approach has nothing to say about this second interpretation.

Other properties distinguishing mass terms from non-agreeing cases lead us to reject the mass approach to non-agreeing quantifiers. Lonning (1987) shows that masses cannot entertain a predication relation with non-homogeneous predicates. Homogeneous predicates are those that are both cumulative and divisive. The examples in (16) involve a non-homogeneous predicate (to weigh more than 300 kilos). Whereas mass quantifications can not be the subject of the non-homogeneous predicate (16a), non-agreeing quantifiers with a count noun can (16b).

(16)  a.  *Ur    askok   300 kilo baino gehiago pisatzen    du
         water a lot of 300 kilo than   more    weight-hab aux
        '*A lot of water weights more than 300 kilos'
    b.  Zaldi askok   300 kilo baino gehiago pisatzen    du
        horse a lot of 300 kilo than   more    weight-hab aux
        'A lot of horses weight more than 300 kilos'

## 4    The distributive character of non-agreeing quantifiers

One of the characterizing properties of non-agreeing quantifiers (and which further distinguishes them from mass terms) is their distributive nature (Etxepare 2000). They can only be interpreted distributively, and this sets certain restrictions on the kind of predicate they can attach to.

### 4.1    Distributive readings

Consider for instance the contrast between (17) and (18).

(17)  Azkenean gazte  askok      altxatu behar izan  zuten    harria
        finally    young many-erg lifted    must  have aux-pl   stone-D
        'Ultimately, many youngsters had to lift the stone'
            √ collective
            √ distributive

(18)  Azkenean gazte  askok      altxatu behar izan zuen    harria
        finally    young a lot of-erg lift     must  have aux-sg stone-D
        'Ultimately, many youngsters had to lift the stone'
            ∗ collective
            √ distributive

(17) involves an agreeing vague quantifier. This yields two possible readings for the predicate: a distributive one, where each of the youngsters lifts the stone, and a collective one, where the entire set of youngsters lifts the stone. (17) also allows intermediate readings, where the set of youngsters divides in small groups to lift the stone. The range of distributive readings in (17) is typical of count plural entities (see Krifka, 1992). Unlike (17), (18) only allows a strict distributive reading, where youngsters individually lift the stone, and several stone-liftings (as many as there are youngsters) occur.

*4.2   Predicate classes*

Non-agreeing quantifiers are incompatible with collective predicates (predicates that do not allow event distribution). The examples in (19)-(21) all contain a predicate that does not naturally allow atomic distribution (distribution down to the atomic entities making up a plurality). Whereas agreeing quantifiers can be combined with those predicates (a), non-agreeing ones cannot (b):

(19)  a.    Ikasle  ohi askok     festa horretan topo egin  zuten
              student ex  many-erg party that-in   meet done aux-pl
              'Many ex-students met at that party'
        b.    *Ikasle  ohi askok        festa horretan topo egin zuen
                student ex  a lot of-erg party that-in   meet done aux-sg
              'A lot of ex-students met at that party'

(20)  a.    Lantegian,  langile asko  batzartu dira
              factory-in   worker many met   are
              'At the factory, many workers had a meeting'
        b.    ?*Lantegian, langile asko     batzartu da
                factory-in  worker a lot of met        is
              'At the factory a lot of workers had a meeting'

(21)  a.    Jonek    liburu asko   ordenatu ditu
              Jon-erg book   many arranged aux-pl
              'Jon arranged many books'
        b.    ??Jonek  liburu asko     ordenatu du

Jon-erg book  a lot of arranged aux-sg
'Jon arranged a lot of books'

Having a meeting, reaching an agreement or arranging books in a certain order denote relations that require more than one individual and give rise to collective readings. Predicates that denote such a relation are incompatible with non-agreeing quantifiers.

*4.3   Once-only predicates*

Consider (22):

(22) a.    Polizi      askok    kolpatu dute    manifestaria
           policemen many-erg beat      aux-pl demonstrator-D
           'Many policemen have beaten the demonstrator'
     b.    Polizi      askok    kolpatu du      manifestaria
           policemen a lot of-erg  beat      aux-sg demonstrator-D
           'A lot of policemen have beaten the demonstrator'

A predicate like *manifestaria kolpatu* 'beat the demonstrator' does not, unfortunately, make reference to a unique event: it is something that can happen more than once, even with the same demonstrator (leaving aside fatal events). In this context both the agreeing and the non-agreeing quantifier are possible.

Now take (23a), a sentence that contains the predicate *putrea hil* 'kill the vulture'. This is something that can only occur once, if the same vulture is involved. Let us call this type of predicate a 'once-only predicate'. Once-only predicates cannot combine with non-agreeing quantifiers, as shown in (23b). The reason must be the same that precludes the occurrence of non-agreeing quantifiers with collective predicates. Although once-only predicates are not collective, they don't license a distributive relation, by definition. But non-agreeing quantifiers must be interpreted distributively.

(23) a.    Baserritar askok     hil zuten putrea
           farmer     many-erg kill aux-pl vulture-D
           'Many farmers killed the vulture'
     b.    *Baserritar askok        hil zuen   putrea
            farmer     a lot of-erg kill aux-sg vulture-D
           'A lot of farmers killed the vulture'

## 5    What do these quantifiers quantify over?

Non-agreeing quantifiers show certain restrictions with regard to the predicate they combine with. In abstract terms, we can talk of their 'predicate sensitivity'. Those constraints must at least include the impossibility of combining with (i) collective predicates (section 4.2); and (ii) once-only predicates (section 4.3).

The predicate sensitivity shown by those quantifiers indicates that their domain of quantification includes events, not only objects. We propose that an appropriate paraphrase for a sentence with a non-agreeing quantifier (24a) is something like (24b):

(24) a.     Ikasle  asko  etorri da gaur
            student many come  is today
            'Many students came today'
     b.     Ikasle  etorrera    asko  egon da gaur
            student come-Nom many been is today
            'There has been a lot of student-coming today'

This view of the non-agreeing quantifiers approaches them to so-called 'event-related readings' of weak quantifiers, as presented in Krifka (1990) and Doetjes and Honcoop (1996). We compare the Basque structures with event-related readings in section 6.4.

Together with their vagueness, there is a further property that characterizes the quantifiers entering into the agreement alternation: they seem to operate across a large class of domains. The set of domains that the relevant quantifiers operate on includes plural nouns, with and without agreement:

(25) Plural agreement:
     a.     Ikasle  asko  etorri dira gaur
            student many come  are  today
            'Many students came today'

     No agreement:
     b.     Ikasle  asko    etorri da gaur
            student a lot of come  is today
            'A lot of students came today'

Mass nouns:

(26) Jonek   garagardo asko edan  du  gaur
     Jon-erg  beer       much drunk aux  today
     'Jon drank a lot of beer today'

And it extends also to the verbal domain. Simple vague quantifiers like *asko* 'much/many', *gutxi* 'few/little', *ugari* 'abundant', *gehiegi* 'too much' can be used as adverbial quantifiers:

(27) Jonek   asko    dantzatu  du
     Jon-erg  much  danced     aux.sg
     'Jon danced a lot'

In this sense, vague weak quantifiers in Basque correspond to what Doetjes (1997, 2004) calls "degree-quantifiers": Degree Quantifiers are insensitive to the categorial properties of the phrase they combine with, as far as the latter can be interpreted cumulatively. Cumulativity can be defined in the following terms:

(28) Cumulativity (Krifka, 1998):

$$\forall X \subseteq UP \ [\text{CUMP}(X) \leftrightarrow \exists x,y \ [X(x) \land X(y) \land \neg x=y] \land \forall x,y \ [X(x) \land X(y) \rightarrow X(x \oplus y)]]$$

(*X* is cumulative iff there exist *y, x* with the property *X* (and *x* distinct from *y*) such that for all *x* and *y*, if *x, y* have the property *X*, then *X* is a property of the sum of *x* and *y*)

Doetjes (1997) argues that Degree Quantifiers measure their domain of quantification; in other words, they are measures. We conclude that this naturally applies to Basque non-agreeing quantifiers and that non-agreeing quantifiers in Basque are conceptually measures.

## 6    Crosslinguistic connections

The predicate sensitivity shown by non-agreeing quantifiers in Basque finds interesting correlates in other languages. Predicate sensitivity is, in those languages, also the result of a structural alternation that involves measuring quantifiers. We point out two cases here: split quantification as described by Nakanishi (2004, 2007); and so-called Quantification at a Distance (Obenauer 1983; Doetjes 1997).[7]

### 6.1   Split measure phrases

An alternation in meaning analogous to the Basque one arises in Japanese, with what Nakanishi calls Measure Phrases (MPs). For Nakanishi (2004), Measure Phrases in Japanese are all weak quantifiers, including cardinals, and they can occur under two different configurations: the measuring element can show up close to the noun it measures, or it can show up detached from it (so-called split MPs) (Nakanishi, 2004, 2007). In (29a) and (30a), the measure quantifier and its nominal restriction are adjacent to each other, and occur inside the quantificational phrase. In (29b) and (30b), the nominal restriction occurs in the left periphery as a topic, and the measuring quantifier appears adjacent to the verbal predicate. Note however, that in (29b) the measuring quantifier is followed by a classifier. The presence and the shape of a classifier depend on the presence and the nature of the following noun. (29b) shows that the topicalized nominal in (30b) is somehow present inside the measure phrase. For present purposes, we can think of this presence as a copy of the topicalized noun.

(29) a.   [Gakusei san-nin]-ga     ie-ni      kaet-ta
          [student   three-CL]-nom home-to went
          'Three students went home'
     b.   Gakusei-ga ie-ni       san-nin   kaet-ta
          student-nom home-to three-CL went
          'Three students went home'

(30) a.   [Mizu san-rittoru]-ga   tukue-nouede kobore-ta
          [water three-liter]-nom table-in          spilt
          'Three liters of water were spilt on the table'
     b.   Mizu-ga     tukue-nouede san-rittoru kobore-ta

water-nom table-in        three-liter    spill-past

Non-split MPs and split MPs give rise to a certain number of asymmetries: whereas non-split cases can occur in any context, split cases show certain restrictions with regard to the predicate. First, split measures cannot occur with once-only predicates.

(31) a.    [Gakusei san-nin]-ga       kinoo      Peter-o   korosi-ta
           [student   three-CL]-nom yesterday  Peter-acc kill-past
           'Three students killed Peter yesterday'
     b.    ??Gakusei-ga  kinoo        san-nin Peter-o    korosi-ta
              student-nom yesterday  three-CL  Peter-acc kill-past

(32) a.    [Gakusei san-nin]-ga       kinoo       Peter-o    tatai-ta
           [student   three-CL]-nom yesterday Peter-acc beat-past
           'Three students beat Peter yesterday'
     b.    Gakusei-ga   kinoo        san-nin Peter-o   tatai-ta
           student-nom  yesterday  three-CL Peter-acc beat-past

(31), as opposed to (32), contains a once-only predicate. In this context, the split MP is impossible. Split MPs, on the other hand, are possible in contexts like (32), which do not involve a once-only predicate.

Another property shown by split MPs is that they go with distributive predicates but not with collective ones.

(33) a.    [Otokonoko san-nin]-ga     kinoo        isu-o      tukut-ta
           [guy          three-CL]-nom yesterday  chair-acc do-past
           'Three guys made up chairs/a chair yesterday'
                 √ collective
                 √ distributive
     b.    Otokonoko-ga kinoo        san-nin  isu-o       tukut-ta
           guy-nom         yesterday  three-CL chair-acc do-past
                 * collective
                 √ distributive

(34) a.    [Tomodati huta-ri]-ga     kyonen     kekkonsi-ta
           [friend     two-CL]-nom last-year   married
           'Two friends got married last year'
                 √ collective = a single couple
                 √ distributive = two couples
     b.    Tomodati-ga  kyonen    huta-ri kekkonsi-ta
           friend-nom     last-year  two-CL marry-past
                 * collective = a single couple
                 √ distributive = two couples

Nakanishi observes the same meaning effects for split Quantifier Phrases in German, Greek and Catalan. He concludes that split quantifiers quantify over both individuals (denoted by their nominal restriction) and events (provided by their verbal argument).

*6.2    Quantification at a distance*

Quantification at a Distance (QaD) refers to a construction that contains a Degree Quantifier that can alternatively have both adverbial and adnominal properties (Obenauer 1983; Doetjes 1997).

(35)  Quantification at a Distance:
    a.    Jean a    lu    beaucoup de livres
            Jean has read many       of  books
            'Jean read a lot of books'
    b.    Jean a    beaucoup lu    de livres
            Jean has many       read of books
            'Jean read a lot of books'
    c.    *Jean a    lu    de livres
            Jean has read of books

(35a) is an ordinary sentence with a quantified object. (35b) is a construction that involves a split quantifier phrase. The Degree Quantifier *beaucoup* 'much/many' is in an adverbial position, to the left of the past participle. The form of the direct object *de livres* corresponds to the one we find in the context of an adnominally used Degree Quantifier, as in (35a). The use of *de NP* is excluded in the absence of the quantifier, as shown in (35c), suggesting that there is some relation between the Degree Quantifier and the *de NP* in QaD constructions.

As in the case of split MP in Japanese, QaD is predicate-sensitive. It is impossible with once-only predicates (example from Doetjes, 1997):

(36)  a.    *En soulevant le   couvercle il a    beaucoup trouvé de pièces d'or
           lifting          the lid        he has a-lot       found of coins  of-gold
    b.    En soulevant le   couvercle il a    trouvé beaucoup de pièces d'or
           lifting          the lid        he has found  a-lot       of coins  of-gold
           'Lifting the lid he found a lot of gold coins'

And it must have a distributive interpretation (Obenauer 1983: 83):

(37)  a.    La délégué a   salué beaucoup de militants
           the  delegate has salute a-lot       of militants
           'The delegate greeted many militants'
               √ collective
               √ distributive
    b.    La délégué  a    beaucoup salué de militants
           the  delegate has a-lot        salute of  militants
           'The delegate greeted many militants'
              * collective
              √ distributive

*6.3    Differences between Split MPs / QaD and Basque Non-agreeing Quantifiers*

Despite the common features of the Basque agreement alternation and the split quantification cases, the Basque non-agreeing quantifiers show important differences with regard to both split MPs and Quantification at a Distance. First, Basque non-agreeing quantifiers differ from Split-MP cases in that cardinal quantifiers in Basque do not show the same alternation: cardinals always agree in number in Basque (cf. (3)).

(38)   Hiru  lagun etorri dira/*da
         three friend come aux-pl/*aux-sg
         'Three friends came'

Second, non-agreeing quantifiers differ from QaD, which only affects incremental themes (Tenny 1994), in that the phenomenon extends to all arguments of the verb: transitive subjects (39a), indirect objects (39b) and objects (39c).

(39)   a.    Azkenean gazte  askok        altxatu behar izan zuen   harria
              finally    young a lot of-erg  lift     must  have aux-sg stone-D
              'Ultimately, many youngsters had to lift the stone'
         b.    Ugazabak langile askori      eskatu dio      aparteko orduak egiteko
              boss-erg   worker a lot of-dat ask    aux-sg extra      hours  do
              'The boss asked a lot of workers to work overtime'
         c.    Mirenek   liburu asko   ikusi du       liburutegian
              Miren-erg book   a lot of see   aux-sg  library-in
              'Miren has seen a lot of books in the library'

Finally, non-agreeing quantifiers differ from both split MPs and Quantification at a Distance cases in that the quantifiers are not adjuncts (or adverbs), unlike the floated quantifiers in Split-MPs and Quantification at a Distance (see Doetjes 1997 or Nakanishi 2007 for arguments in this regard). The sequence [Noun Phrase+Non-agreeing Quantifier] behaves as a constituent for intents and all purposes. Non-agreeing quantifier phrases show morphological Case, and they condition the selection of the appropriate auxiliary (which varies depending on the intransitive, transitive or ditransitive status of the VP). Syntactically, the sequence behaves as a constituent, and splitting its terms is not possible under any circumstance. (40) gives an illustrative example:

(40)   a.    **\*Ikasle** gaur **asko**  etorri da
              student today many came aux-sg
         b.    **\*Ikasle** gaur  etorri da      **asko**
              student today came  aux-sg many

A 'floating' or adverbial approach to the Basque cases therefore does not seem appropriate. We explore the possibility that predicate sensitivity in Basque is the result of a semantic mapping process affecting Measure Phrases in any position (see section 7).

*6.4   A note on event-related readings*

The predicate-sensitivity of non-agreeing quantifiers in Basque led us to conclude that their measure function applies not only to their nominal restriction, but also to the verbal predicate. That is, non-agreeing quantifiers in Basque quantify over both individuals and events. (41a, b), repeated below, give an intuitive paraphrase of the meaning we have in mind:

(41)   a.    Ikasle  asko  etorri da gaur
               student many come  is today
               'Many students came today'
         b.    Ikasle  etorrera     asko  egon da gaur
               student come-Nom many been is today
               'There has been a lot of student-coming today'

The paraphrase in (41b) is reminiscent of what Krifka (1990) has called 'event-related readings'. Event-related readings are illustrated in (42), from Krifka (1990):

(42)   Four thousand ships passed through the lock last year

The sentence in (42) is ambiguous between two different readings: in the first one, the number of different ships that passed through the lock last year amounts to four thousand. In the other reading, it is the number of passing events that amounts to four thousand. The latter reading is still true even if less than four thousand different ships did the passing, and this is the case if there are ships that have passed through the lock more than one time a year. It is natural to ask whether the Basque agreement alternation is related to the ambiguity above. The analogy would go in the following sense: we have shown that non-agreeing quantifiers are predicate-sensitive, and this follows if non-agreeing quantifiers quantify over events. We would therefore expect that event-related readings would correspond only to those cases where weak quantifiers do not agree in number with the verb. This is not the case: first, cardinal quantifiers do not enter the alternation (they always agree in plural). On the other hand, agreeing cardinal quantifiers give rise to event-related readings, as shown in (43).

(43)   4000 itsasontzi sartu   **dira**   aurten     kanalean
         4000  ship      got-into aux-pl this-year lock-in
         '4000 thousand different ships entered the lock today' or
         'There have been 4000 thousand events of ship-passing this year'

This is the case for the rest of the agreeing weak quantifiers: all of them allow event-related readings:

(44)   Untzi asko sartu    dira   gaur  kanalean
         ship  many got-into aux-pl today lock-in
         'Many ships got into the lock today' or
         'There have been many events of ship-passing through the lock today'

The ambiguity therefore targets in the same way agreeing and non-agreeing quantifiers, and cannot be linked to non-agreeing cases.

Summarizing: we have seen the properties of non-agreeing quantifiers in Basque and its crosslinguistic connections. We have also seen that there are some clear and important differences between the Basque cases and the crosslinguistic connections (e.g. Split MPs in Japanese or German, French QaD). In what follows, first, we provide a semantic basis of the predicate sensitivity shown by Basque non-agreeing quantifiers (§7); and second, we propose a new syntactic analysis for nominal expressions in general and for Basque non-agreeing quantifiers in particular (§8).


## 7    A semantic approach to predicate sensitivity

### 7.1    *Monotonicity in the nominal domain*

It is known that measures (in general) show some semantic restrictions on the nominal expression:

(45)  a.    three litres of wine
      b.    *three degrees of wine

According to Schwarzschild (2002, 2006) the relation between measure functions –*volume* in (45a) and *temperature* in (45b)– and measured nouns is not uniform and in order to create grammatical structures the measure function must be monotonic with respect to the noun it combines with.

(46)  a measure function $\mu$ is monotonic relative to domain I iff:
      (i)     there are two individuals x, y in I such that x is a proper subpart of y, and
      (ii)    $\mu(x) < \mu(y)$

As expressed in (46), being monotonic for a measure function means that it tracks the part-whole structure of the denotation of the noun.[8] A common way to represent that the denotations of nouns have part-whole structures is by means of a lattice structure (Link 1983).

(47)                  $x\cup_1 y\cup_1 z$



    $x\cup_1 y$          $x\cup_1 z$          $y\cup_1 z$



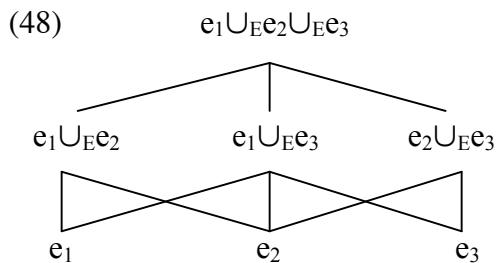        x                   y                   z

Now, Schwarzschild argues that if we assume this to be the structure of the denotation of a noun it is possible to explain the contrast in (45). The measure function Volume in (45a) is monotonic with respect to the noun *wine* because if a quantity of wine has a certain volume, then every proper subpart of it will have a lower volume, and superparts of it will have larger

volumes. On the other hand, the measure function temperature in (45b) is non-monotonic with respect to the noun *wine* because if the wine has a certain temperature, it is not necessarily true that proper subparts of it will have a lower temperature and that superparts of it will have a higher temperature.

## 7.2    *Monotonicity in the verbal domain*

Basque non-agreeing quantifiers do not show only semantic restrictions on the nominal domain: as we have already seen, they also show certain restrictions on the verbal domain, i.e. they are 'predicate sensitive'. Those constraints must at least include the impossibility of combining with (i) collective predicates (cf. section 4.2); and (ii) once-only predicates (cf. section 4.3).

In order to account for these restrictions, we adopt the idea that predicates (as is the case for nouns) can also be represented by a part-whole structure (Nakanishi 2004, 2007). To do so, we assume that the denotation of a verb contains an event argument *e* (Davidson 1967) and that what a verb denotes can be expressed by a lattice of events, as in (48) (see Landman 2000).

(48)          $e_1 \cup_E e_2 \cup_E e_3$

$e_1 \cup_E e_2$          $e_1 \cup_E e_3$          $e_2 \cup_E e_3$

$e_1$                    $e_2$                    $e_3$

Then, the measure function that applies to the VP will have to be monotonic with respect to the part-whole structure denoted by this VP.

(49)   a measure function $\mu$ is monotonic relative to domain E of events iff:
   (i)      there are two events $e_1$, $e_2$ in E such that $e_1$ is a proper subpart of $e_2$, and
   (ii)    $\mu(e_1) < \mu(e_2)$

The monotonicity constraint in the verbal domain can explain why non-agreeing quantifiers cannot combine with once-only predicates, and with collective predicates (cf. section 4). Note that (i) once-only predicates do not denote part-whole structures since they make reference to a single event and something like *break the sand castle* will not have proper subparts of breaking the sand castle; (ii) collective predicates, as opposed to distributive ones, denote a single event, and again, there will be no part-whole structure of events. Now, if this is the case, non-agreeing quantifiers (being measure functions) will not be able to apply to these predicates in a monotonic fashion. This is the reason why non-agreeing quantifiers will only be able to combine with predicates that denote a non-trivial part-whole structure. Agreeing Basque weak quantifiers (which we argue not to be measure functions, see section 8), on the other hand, can combine with any predicate because they show no restriction on the verbal domain and do not have to apply to predicates monotonically.
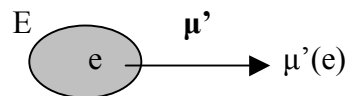
## 7.3    *Homomorphism*

As we just mentioned (cf. also section 6), non-agreeing quantifiers quantify over both nouns and verbs, but how can this property be explained? One possibility is to create a homomorphism function between individuals and events allowing measures to measure both. This homomorphism function is based on Krifka (1989), where he argues that temporal adverbials like *for an hour* in *John slept for an hour* cannot directly measure the sleeping event because events have no measureable temporal extent. Instead, he argues that *for an hour* indirectly measures the sleeping event by measuring its run-time, that is, he proposes a homomorphism function from events E to event run-times T. What a homomorphism function does is preserve some structural relation defined on its domain in a similar relation defined in its range, as in $h(e_1 \cup_E e_2) = h(e_1) \cup_T h(e_2)$. Krifka claims that, given a measure function for run-times and a homomorphism function from E to T, it is possible to build a derived measure function which will be used for a domain different from the original domain of application (i.e. a measure function that is for run-times but is used to measure events). In (50), the measure function for events $\mu$' is defined by $\mu$ and $h$: for all events, the amount of the event e measured by $\mu$' in E equals the amount of $h(e)$ measured by $\mu$ in T.

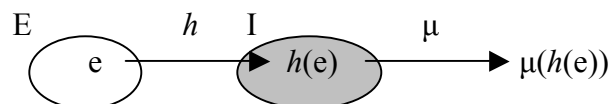(50)  $\forall e \, [ \, \mu'(e) = \mu(h(e)) \, ]$      (Krifka 1989: 97)

Nakanishi (2004, 2007) extends the homomorphism analysis proposed by Krifka for events to split-MP (cf. section 6.1). What we do here is extend somewhat Nakanishi's analysis to Basque non-agreeing quantifiers, which we argue are conceptually measures. Nakanishi argues that there is a homomorphism function from events in E denoted by the VP to individuals in I denoted by the NP. Then, given a measure function for individuals and a homomorphism function from E to I, it is possible to derive a measure function $\mu$' for events. If we take this proposal as correct, it would follow from there that Basque non-agreeing quantifiers could measure both individuals and events.

In (52), a measure function applies to individuals mapped from events by a homomorphism function $h$. Following (50), the derived measure function $\mu$'(e) in (51) is equal to $\mu(h(e))$ in (52) (a measure function applying to individuals mapped from events). By mapping events to individuals and measuring the range of that mapping, Basque non-agreeing quantifiers will be able to measure at the same time individuals (since $\mu$ applies to the output of $h(e)$) and events (since the derived $\mu$' applies to e). In this way, non-agreeing quantifiers indirectly measure events by measuring individuals.[9] This analysis captures the observation that a non-agreeing quantifier operates both on the VP denotation and on the denotation of the host NP, measuring individuals.

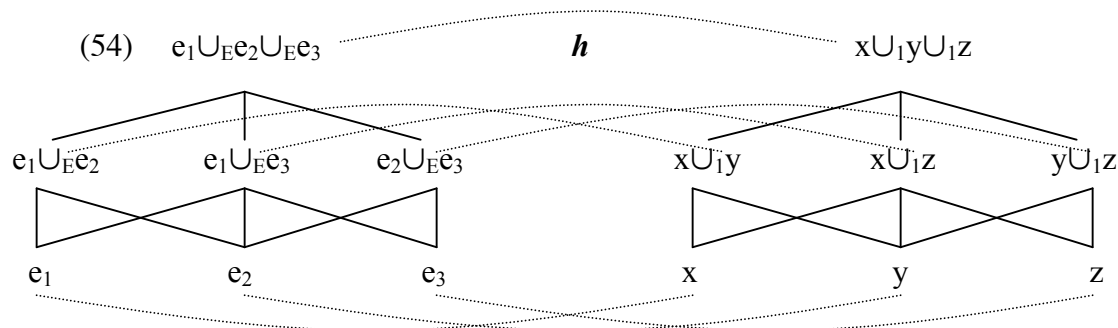(51)  A measure function associated with non-agreeing quantifiers



(52)  A measure function associated with non-agreeing quantifiers

If this is correct, non-agreeing quantifiers will have to be monotonic relative not only to the part-whole structure of the VP, but to the part-whole structure of a nominal domain mapped from a verbal domain. The incompatibility of non-agreeing quantifiers with once-only predicates can be explained as before: these predicates have no part-whole event structure and as a consequence there will be no homomorphism function that can be applied to the domain of events. Now, we also know that non-agreeing quantifiers force distributive readings (see section 3).

(53) Mutil askok     mahai bat egin zuen
      boy   a lot of-erg table   one make aux.sg
      'A lot of boys made a table'
          * collective
          √ distributive

In order to obtain this distributive reading let us suppose that a verb like *make a table* can be pluralized and can form a lattice of make-a-table events, if so, there can be a homomorphism from the event lattice to a lattice of boys (individuals) (cf. Nakanishi 2004, 2007). Note that a measure function can apply monotonically to the range of the homomorphism function, that is, the lattice of boys, because the homomorphism function preserves the part-whole structure of the lattice of events.

(54)    $e_1 \cup_E e_2 \cup_E e_3$ ............... **h** ............... $x \cup_1 y \cup_1 z$

$e_1 \cup_E e_2$    $e_1 \cup_E e_3$    $e_2 \cup_E e_3$       $x \cup_1 y$    $x \cup_1 z$    $y \cup_1 z$

$e_1$        $e_2$        $e_3$       $x$        $y$        $z$

Thus, in the distributive reading the non-agreeing quantifier in (53) measures events as *many* (assuming that $e_1 \cup_E e_2 \cup_E e_3$ are *many* events), and this is mapped into the individuals $x \cup_1 y \cup_1 z$. The individual $x \cup_1 y \cup_1 z$ consists of x, y, z, each of whom will be taken to be an agent of an atomic make-a-table event $e_1$, $e_2$, $e_3$.

On the other hand, the collective reading is ungrammatical due to the fact that there would only be a single make-a-table event e and the boys would also form a single agent. Then, there will be no possibility of applying a measure function monotonically because the single event will have no part-whole structure.

(55)    e ............................... $x \cup_1 y \cup_1 z$

# 8    Syntactic Structure

As we showed in section 5, the quantifiers entering into the agreement alternation seem to operate across a large class of domains. The set of domains that the relevant quantifiers operate on includes plurals nouns, with and without agreement:

(56) Plural agreement:
    a.    Ikasle  asko  etorri dira gaur
            student many come  are  today
            'Many students came today'

    No agreement:
    b.    Ikasle  asko  etorri da gaur
            student many come  is today
            'Many students came today'

It also includes mass nouns:

(57) Jonek   garagardo asko edan  du  gaur
     Jon-erg  beer      many drunk aux  today
     'Jon drank a lot of beer today'

And it also extends to the verbal domain. They can be used as adverbial quantifiers:

(58) Jonek   asko   dantzatu  du
     Jon-erg  many  danced    aux-sg
     'Jon danced a lot'

In the analysis that we propose next, we put this adverbial use aside and concentrate on the nominal uses of these vague quantifiers.

Our analysis builds on Borer (2005) where it is argued that all nouns are unspecified for any properties (including the mass/count property) and that as a result of the absence of any grammatical specification and unless more syntactic structure is added, nouns denote masses (as the default case). In order to interact with the count system the denotations of nouns need to be portioned-out. This portioning-out function is realized by means of a classifier, but classifiers, Borer argues, are not exclusive to languages like Chinese (which possess a complex classifier system) but can also be found in other languages. In English, for example, what accomplishes the portioning-out function will be the plural marker -*s*, which Borer takes to play exactly the same role as Chinese classifiers.

With all this in mind, the syntactic structure proposed by Borer for nominals is the one in (59): first we have an NP (which will be mass by default), above the NP we have the Classifier Phrase (ClP) where the portioning-out function takes place, dominating ClP we have the Quantity Phrase or Number Phrase (NumP) which is responsible for the assignment of quantity to stuff (i.e. masses) or to divisions of it (i.e. where the counting occurs), and lastly, the highest projection is the DP projection.

(59) [ DP [ NumberP [ ClassifierP [ NP ]]]]

According to Borer, both ClP and NumP may be missing from the structure. When the ClP is absent, the noun is interpreted as mass. This is basically what we have in (60) where we provide an example of the structure of a mass noun combined with a weak quantifier. So, we start with the NP *money* and since we want this NP be interpreted as a mass term, there will be no portioning-out function, that is, there will be no ClP present in the structure. Then, in order to quantify the stuff denoted by the NP *money* the NumP must be present and this is where the English quantifier *much* is placed. The same applies to the Chinese example *shenme qian* 'much money'.

(60)  Masses:  [DP [NumberP much [~~ClassifierP~~ [NP money]]]]  (English)
              [DP [NumberP shenme [~~ClassifierP~~ [NP qian]]]]  (Chinese)

In (61) we have an example of a count term (combined with a weak quantifier); just because we want to interpret the noun as count, more structure than that in (60) will be needed. As was the case in (60) with the noun *money*, we start with an NP *person* which is taken to be a mass term by default. However, in order to interact with the count system the NP needs to be portioned-out, i.e. we need a ClP present in the structure, and this portioning-out function is fulfilled by plural inflection *-s* in English. Once the classifier has divided the stuff, the portioned-out stuff can be counted, and this is exactly what the quantifiers *many* or *three* (and their Chinese counterparts) do in NumP position.

(61)  Counts:  [DP [NumberP many/three [ClassifierP -s [NP person]]]] (English)
              [DP [NumberP san [ClassifierP ge [NP ren]]]]      (Chinese)

However, Borer's analysis faces a number of problems when we consider Basque data: it would make no distinction between agreeing and non-agreeing Basque quantifiers because they would both appear in NumP position (despite the clear and important differences existing between them). Furthermore, recall that among the agreeing Basque quantifiers we have numerals, and numerals always agree with the predicate in number as shown in (62), in opposition to what happens with vague quantifiers in Basque.

(62)  Hiru  ikasle   berandu iritsi  dira/*da
      three student  late    arrive aux.pl/aux
      'Three students arrived late'

Thus, the same syntactic position, i.e. NumP, would be home for elements with very different properties: agreeing quantifiers, non-agreeing quantifiers and numerals.

We think that –taking into account the differences between agreeing and non-agreeing quantifiers in Basque– we have evidence enough to conclude that agreeing quantifiers are counting quantifiers while non-agreeing quantifiers are measures (cf. section 5). What we propose then is that measures appear in a different syntactic position and that they head their own functional projection in the expanded structure of the Noun Phrase: the Measure Phrase (MP). As expressed in (63), the MP is placed just in-between the ClP (where division occurs) and the NumP (where counting occurs).

(63)  [DP [Number Phrase [**Measure Phrase** [Classifier Phrase [NP ]]]]

Now, the distinction we make between the measuring field (in MP position) and the counting field (in NumP position) affects referentiality; in fact, we think that agreement and reference (i.e. establishing discourse variables and permitting enumeration) become relevant upon reaching NumP (and by extension, DP) –not before that position, i.e. not at MP. That referentiality comes once you get to NumP is borne out by anaphora cases as well as by the referential possibilities that agreeing and non-agreeing quantifiers show. We provide anaphora cases in (64): agreeing quantifiers create grammatical sentences and can be antecedent to anaphora (in (64a)) –which is not allowed for non-agreeing quantifiers, as the ungrammaticality of example (64b) clearly shows.

(64) a.    Ikasle$_i$ asko  presaka  etorri dira,
             student many hurry-in come aux.pl
             eta  _$_i$ mahaia altxatu ondoren _$_i$ alde egin dute
             and   table  lift    after       go  do  aux.pl
             'Many students came in a hurry, and after lifting the table they left.'
    b.    *Ikasle$_i$ asko    presaka  etorri da,
              student a lot of hurry-in come aux.sg
             eta  _$_i$ mahaia altxatu ondoren _$_i$ alde egin du
             and   table  lift    after       go  do  aux.sg
             'A lot of students came in a hurry, and after lifting the table he/she left.'

In (65a), we see that agreeing Basque quantifiers allow the enumeration of individuals, i.e. it is possible to make reference to the members of the set we are talking about. The enumeration of individuals denoted by the NP combined with non-agreeing quantifiers is not possible, (65b).

(65) a.    Politikari askok,    alegia A, B, C, D, ez  dute   lotsarik iritziz aldatzeko
             politician many-erg that-is        neg aux.pl shame   opinion change-fut
             'Many politicians, to name A, B, C, D, are not ashamed of changing their
             opinion'
    b.    *Politikari askok,      alegia A, B, C, D, ez  du    lotsarik iritziz aldatzeko
              politician a lot of-erg that-is          neg aux.sg shame   opinion change-fut
             'A lot of politicians, to name A, B, C, D, are not ashamed of changing his/her
             opinion'

Assuming the structure we propose in (63) as correct, let us see now how the different uses of a vague quantifier like *asko* 'many/much' would fit in this structure.[10] In combination with mass terms, the structure will be the one in (66), i.e. a full DP. The noun *garagardo* 'beer' in (66) will be interpreted as a mass term due to the fact that there is no ClP in the structure, and hence, no portioning-out of the stuff. Above NP we will have MP (the position where the vague quantifier *asko* will appear in this case), its function being that of measuring the quantity of beer. Above all, we will have the DP projection.[11]

(66) **Mass nouns:**
    garagardo asko
    beer         much

[$_{DP}$ [$_{MP}$ asko [$_{NP}$ garagardo]]]

We saw in the initial sections that non-agreeing quantifiers need the NP they combine with to have atomic structure (cf. sections 2 and 3). It follows from there that non-agreeing quantifiers do not measure masses and therefore the portioning-out function is needed; in other words, ClP must be present in the structure. We assume that there is a covert classifier head in Basque (represented as $\varnothing$ in (67)) that portions-out stuff.[12] According to Borer, once you portion-out stuff there is no other possibility but to ennumerate it by means of a counter (numerals, quantifiers, etc.) which would appear in the NumP position. Non-agreeing Basque quantifiers show that this is not necessarily so and that it is possible to not be in NumP position and still need the stuff to be portioned-out in order to measure it. Furthermore, recall that we argue that it is upon reaching NumP position that referentiality and agreement appear, and non-agreeing Basque quantifiers do not show any of these properties (see examples (64-65)). Thus, the structure we propose for non-agreeing quantifiers is the one in (67): first we have the noun *ikasle* 'student' which enters the structure as a default mass term; it must be portioned-out in order to combine with non-agreeing quantifiers (which do not measure masses) which will be placed in MP position. It is exactly at the functional projection MP that the structure stops, going no higher than that (i.e. neither NumP nor DP will project).[13] The structure we propose for non-agreeing quantifiers in (67) is the one that allows the application of the homomorphism function permitting these elements to measure individuals denoted by the NP and events denoted by the VP.

(67) **Non-agreeing Qs:**
ikasle   asko [-agr]
student a lot of

[$_{MP}$ asko [$_{ClP}$ $\varnothing$ [$_{NP}$ ikasle]]] $\Rightarrow$   *homomorphism*

Finally, agreeing Basque quantifiers are considered simple counters and as a consequence they will appear in NumP. Of course, these quantifiers quantify over portioned-out stuff and the presence of ClP with a covert classifier head will also be necessary in these cases. Thus, first in (68) we have the noun *ikasle* 'student' which, as in (67), enters the structure as a default mass term; it must be portioned-out in order to combine with the counting system, hence ClP is necessary. Above the ClP we will have NumP where the agreeing quantifier appears assigning quantity to the portioned-out stuff. And lastly, the DP projection.

(68) **Agreeing Qs:**
ikasle   asko  [+agr]
student many

[$_{DP}$ [$_{NumP}$ asko [$_{ClP}$ $\varnothing$ [$_{NP}$ ikasle]]]

# 9    Conclusions

In this paper we have shown that non-agreeing quantifiers in Basque are conceptually measures. Furthermore, based on the differences between agreeing and non-agreeing quantifiers and observing that the latter do not behave as counters (i.e. they can not appear in NumP position) we have proposed a new syntactic structure for NPs (building on Borer 2005) where measures head their own functional projection. This functional projection is placed between the Classifier Phrase and the Number Phrase. We have also shown that non-agreeing quantifiers are sensitive to the nature of the predicates they associate with and that Measure Phrases seem to measure both individuals and events, as long as the latter denote non-trivial part-whole structures. The predicate sensitivity of measuring quantifiers has been explained using the monotonicity constraint as expressed in Schwarzschild (2002) and a homomorphism function (Krifka 1989; Nakanishi 2004, 2007).

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[2] The reader is referred to Artiagoitia (2000, this volume), or Etxeberria (2005, 2010, in prep) for possible analyses of the various readings the Basque definite article can force.

[3] The phenomenon extends to all arguments of the verb: transitive subjects (ergative case), indirect objects (dative case), and direct objects (absolutive case); cf. section 6.3 for examples.

[4] Right now, we are unable to create a parallelism between so-called vague quantifiers in Basque and other crosslinguistic constructions. It would seem that there exist similar constructions in Spanish and Catalan where some weak quantifiers (e.g. mucho 'much' vs. muchos 'many' can both combine with 'apparent' count terms like *estudiante* 'student') can show agreement alternation with the verbal predicate, however, a more fine-grained study is needed in order to confirm whether we would be talking about the same phenomenon or not; cf. Etxeberria & Etxepare (in prep).

[5] For measure expressions and their syntax in Basque, cf. Etxeberria & Etxepare (in prep) and Goenaga (2008, this volume).

[6] Despite the fact that non-agreeing quantifiers lack number features and show no agreement with the verbal predicate (i.e. the inflected verb shows default third person singular agreement), we will continue using 'aux-sg' in the glosses for ease of exposition.

[7] Russian also possesses nominals that show agreement alternation with the verb. These nominals (*small nominals* in Pereltsvaig's (2006) terms) may or may not trigger plural agreement on the verb; if the subject does not trigger agreement, the predicate appears in the third person neuter default form.

    (i)   a.    V e`tom fil'me igrali   [pjat' izvestnyx akterov].   (Pereltsvaig 2006: (3))
               in this   film   played.pl five  famous   actors

'Five famous actors played in this film.'
b.    V e`tom fil'me igralo          [pjat' izvestnyx akterov].
      in this  film    played.neuter five  famous     actors
      'Five famous actors played in this film.'
One difference between the non-agreeing Basque cases and the Russian cases is that Russian numerals can also enter into agreement alternation, something that is not allowed in Basque. For space reason this case will not be considered in this paper.

[8]  An alternative (and previous) formulation to the monotonicity constraint is the one proposed by Krifka (1989) where he argues that measure functions must be extensive with respect to the noun. One of the requirements for extensivity is that the measure function be additive.
(i)    μ is an extensive measure function for a given part structure iff:
       μ is additive: If $\neg x \otimes y$, then $\mu(x \oplus y) = \mu(x) + \mu(y)$
       [The sum of the measure of non-overlapping elements is the measure of their sum]

[9]  The homomorphism function need not be from events to individuals and could also be applied the other way around, that is, from individuals to events. This is actually what Filip (2005) does when analyzing the Russian verbal prefix *na-* in its cumulative sense of approximately *a relatively large quantity (of)* and the attenuative/delimitative *po-*. It could be the case that the homomorphism function needed by non-agreeing Basque quantifiers to measure both individuals and events is implemented by homomorphically mapping the part-whole structure denoted by the NP to the part-whole structure denoted by the VP. Note in fact that non-agreeing quantifiers first apply to the NP they combine with and are not to be treated as adverbials (cf. section 6).

[10]  Note that Basque is a head final language. However, for the structures that we will be proposing in this paper we leave directionality aside.

[11]  A reviewer wonders why mass terms combined with quantifiers such as *asko* 'much' create full DPs, in contrast with what happens with non-agreeing quantifiers. The reason why this is so is related to referentiality.

[12]  A question that comes to our mind is the following: Does Basque posses a plural marker that can portion-out stuff just like the plural marker *-s* does in English? The answer to the question is 'yes' and 'no'. 'Yes' because Basque possesses a plural marker, realized morphologically as *-k*; and 'no' because this plural marker is categorically and phonologically dependent on D, that is to say, the plural marker never appears in Basque unless D is present (see Etxeberria 2005, 2010, in prep). Furthermore, note that the plural marker *-k* does not appear with the weak quantifiers we are considering in this paper. If *-k* were behaving as a classifier (i.e. portioning-out stuff) it should have appeared with both agreeing and non-agreeing quantifiers, but it does not as shown by the examples used in the whole paper.

[13]  Borer (2005: ch.4, ch.8) argues that measure expressions head a quantity phrase (NumP) and that the DP fails to project resulting in the absence of referential reading. Similar claims have been made by Ritter (1991) or Li (1998). See also Pereltsvaig (2006) where what she calls Small Nominals are argued not to project a whole DP (but a QP (NumP)) and to lack individual reference. Non-agreeing Basque quantifiers would show that reference appears with the presence of overt number morphology (agreement with the inflected verb in this case) and upon reaching NumP, not below, i.e. not in MP. Note, however, that the presence of NumP makes the presence of DP obligatory (cf. fn. 8).