Contextual domain restriction across languages: 
Determiners, quantifiers, and the structure of QP

Urtzi Etxeberria and Anastasia Giannakidou
IKER/CNRS, and University of Chicago
September 2009

Abstract
The question of whether contextual restriction of quantificational determiners (Qs) is done explicitly (i.e. at LF; von Fintel 1994, Stanley 2002, Stanley and Szabó 2000, Martí 2003, Giannakidou 2004, Etxeberria 2005, 2008, 2009), or purely pragmatically (via e.g. free enrichment as in Recanati 2002, 2004, 2007, or a relevance theoretic process) has been a matter of intense debate in formal semantics and philosophy of language. In this paper, we contribute to the debate and argue that the domain for quantifiers in certain languages is restricted overtly, i.e. in the syntax, by a determiner head (D). This strategy of domain restriction via D— D_DR— happens by applying D_DR to the nominal argument, but we present novel data that show D_DR to also apply to the Q itself, in which case it forms a constituent with it. In both cases, D_DR is a type preserving function, i.e. a modifier, and supplies the contextual C variable. Evidence for our analysis is drawn from Greek, Basque and Salish primarily—three different language families—and we build on our earlier ideas in Giannakidou (2004), and Etxeberria (2005, 2008, 2009).

Our analysis provides support for the program that domain restriction is syntactically realized, but we propose an important refinement: domain restriction can affect the Q itself (pace Stanley 2002), and in fact quite systematically in certain languages. Finally, we show that the Q that is affected by D_DR is typically a strong one, and we ask whether weak Qs can also be inherently domain restricted (as suggested by Martí 2009). We conclude that they cannot: indefinites can at most be associated with a felicity condition of specificity (in the sense of Ionin 2006), anchored to the speaker, and is not part of the common ground like domain restriction.

1 Background: Determiners, quantifiers, and contextual domain restriction

One of the most fruitful ideas in formal semantics has been the thesis that quantifier phrases (QPs) denote generalized quantifiers (GQs; Montague 1974, Barwise & Cooper 1981, Zwarts 1986, Westerståhl 1985, Partee 1987, Keenan 1987, 1996, Keenan & Westerståhl 1997, among many others). GQ theory initiated an exciting research agenda in the ‘80s, and the decades that followed featured extensive studies of quantificational structures, with attention to the internal structure of QPs, their use in discourse, and their scopal properties. For many years the focus of inquiry was on English, but soon enough crosslinguistic research made obvious a spectacular variation (see e.g. the works appearing in Bach et al. 1995, Szabolcsi 1997, Matthewson 1998, 2001, 2008, Giannakidou and Rathert 2009) in the patterns of quantification across languages, suggesting that some fine tuning, or even more radical modifications, of the classical theory are necessary. Some of the fine tuning concerns the internal composition of quantifier words like each and every and their equivalents, as will become evident in our discussion here.

Classical GQ theory posits that there is a natural class of expressions in language, called quantificational determiners (Qs), which combine with a nominal (NP) constituent (of type et, a
first order predicate) to form a quantificational argumental nominal (QP). This QP denotes a GQ, a set of sets. In a language like English, the syntax of a QP like every woman is as follows:

\[(1)\]

\[
\begin{align*}
\text{a. } &[[\text{every woman}]] = \lambda P. \forall x. \text{woman}(x) \to P(x) \\
\text{b. } &[[\text{every}]] = \lambda P. \lambda Q. \forall x. P(x) \to Q(x) \\
\text{c. } &\text{QP} \\
&\langle \langle e, t \rangle, t \rangle \\
&\langle q, \langle \langle e, t \rangle, t \rangle \rangle \\
&\langle e, t \rangle \\
&\text{every} \quad \text{woman} : \lambda x. \text{woman}(x)
\end{align*}
\]

The Q every combines first with the NP argument woman, and this is what we have come to think of as the standard QP-internal syntax. The NP argument provides the domain of the quantifier, and the Q expresses a relation between this set and the set denoted by the VP. Qs like every woman, most women, etc. are known as ‘strong’ (Milsark 1977), and, simplifying somewhat (see McNally 1992, 2009 for more refined data), their distinctive feature is that they cannot occur in the so-called existential there construction. By contrast, three women, some women, several women, etc. are ‘weak’, and occur happily in this structure:

\[(2)\]

\[
\begin{align*}
\text{a. } &\text{There are most women in the garden.} \\
\text{b. } &\text{There is \{every/each\} woman in the garden.} \\
\text{c. } &\text{There is the woman in the garden.} \\
\text{d. } &\text{There are \{three/some/few/several\} women in the garden.} \\
\text{e. } &\text{There is a woman in the garden.}
\end{align*}
\]

The question of what accounts for this empirical difference in existential structures is still open, but, for the purposes of this paper, it is sufficient to accept that one of the main functions of the structure is to assert existence, and weak QPs do just that. The QPs that are excluded, i.e. strong ones and definites, do not assert existence but rather presuppose it, and are not admitted in the structure (Zucchi 1995).

In GQ theory, then, “quantificational determiner” refers to the function that creates a quantificational argument, i.e., a GQ, from a predicate. Syntactically, in a language like English, and as far as we know in most Indoeuropean languages, this function is hosted in the head we designated above as Q, and the domain predicate will come in the form of NP or A(djectival)P as in every tall boy.

Another element that has the ability to combine with an NP or an AP, and give a nominal argument is the definite determiner the and its equivalents. The definite article is usually designated as D (Abney 1987; see Alexiadou, Haegeman, and Stavrou 2008 for an extensive recent overview). The DP has a structure parallel to (1), only in this case the Q is D, and the constituent is called DP (though some authors call the Q position uniformly D position; cf. Matthewson 1998, Gillon 2009). As indicated below, the DP produces typically a referential expression, a (maximal or unique) individual indicated here with iota:
The DP produces the most basic argument, and indeed there is consensus in the literature that the D position is associated with argumenthood: an NP, which can otherwise not be used as an argument because it is a property (et), closes under D and becomes an argument of the basic type e. The DP can be understood as a GQ in a system that assigns uniform denotations to all nominal argumental constituents, yet intuitively the DP is thought of as a referring expression as this widely accepted analysis suggests (drawing on the analyses of definite descriptions since Frege 1892 and Strawson 1950; for a recent overview see Elbourne 2007). As a referring expression, it seems more natural to allow the DP to denote in the type e, an individual (singular, or plural depending on the number), at least as a primary assignment, and lift it only if necessary (within a type shifting system like Partee 1987). We will have more to say on D in sections 2 and 3; we will just note here that QPs and DPs are distinct in their primary type assignment: the QPs are quantificational and denote GQs (type et,t), but the DPs are referential and denote individuals (type e). Both D and Q, are functions that need a domain, and apply to predicates (NPs) thereby forming an argument out of it.\(^1\)

It has long been noted that the domain of Qs is usually contextually (explicitly or implicitly) restricted. For instance, Strawson (1952) talks about presuppositions induced by Qs, Horn 1992 about existential commitment of universal quantifiers, and Reuland and Ter Meulen (1987) further state a distinction between weak and strong quantifiers:

> "A noteworthy result of this [the Barwise and Cooper; clarification ours] set-theoretic analysis of determiners is that for a weak determiner the verification of a sentence Det N is/are Pred is based only on the intersection of the N- and Pred-interpretations, that is, information provided by the sentence itself, whereas strong determiners require for their verification consideration of some other set, often a head given in the interpretation or otherwise available as part of the conversational background or common ground (emphasis ours).”


Since then, much contemporary work agrees that we need to encode contextual restriction in the QP somehow, but opinions vary as to whether contextual restriction is part of the syntax/semantics (Partee 1987, von Fintel 1994, Stanley & Szabó 2000, Stanley 2002, Martí 2003, Matthewson 2001, Giannakidou 2004, Etxeberria 2005, 2008, 2009), or not (Recanati 1996, 2004, 2007, and others in the strong contextualism tradition). In the syntax-semantics approach, it is assumed that the domains of Qs are contextually restricted by covert domain variables at LF. These variables are usually free, but they can also be bound, and they can be either atomic, e.g. C, or complex of the form f(x), corresponding to selection functions (Stanley 2002, von Fintel 1998, Martí 2003):

---

\(^1\) It has also been suggested that the structure of DP may be richer than indicated here, e.g. that there may be two D positions in the DP one above Q one below (see Szabolcsi 2009 and earlier work, Alexiadou, Haegeman and Stavrou 2008). This discussion becomes relevant in section 3, and we will take it up there.
(4) Many people came to the party last night; every student got drunk.
(5) ∀x [student,] got drunk (x).

Here, the nominal argument of ∀, student, is not the set of students in the universe, but intuitively, the set of students who came to the party last night. This is achieved by positing the domain variable C, which will refer to the salient set of people who came to the party last night. Every student then will draw values from the intersection of this set with the set student. The domain variable can also be understood as f(x), i.e. a free function variable and an argumental variable of type e. Relative to a context c, f maps e, a student who came to the party last night to the set of students that came to the party last night. This set is, then, the nominal argument of the Q ‘every’. Stanley (2002) further argues that the domain variable is, syntactically, part of the nominal argument, and not of the Q itself.

However, empirical evidence suggests, as we will show, that domain restriction can affect the Q itself. Our claim will be motivated by data like below (from Giannakidou 2004, Etxeberria 2005, 2008, 2009), where the Q combines with the D element.

(6) Greek (Giannakidou 2004):
   a. o kathe fititis
      D.sg every student
      ‘each student’
   b. kathe fititis; *kathe o fititis
      ‘every student’

(7) Basque (Etxeberria 2005, 2009):
   a. mutil guzti-ak
      boy all-D.pl
      ‘all of the boys’
   b. *mutil guzti; *mutil-ak guzti

These data, largely unknown to the wider literature, will be the main topic of this paper, and will be taken to indicate that, syntactically, domain restriction can affect Q itself. One other important aspect of the data is that contextual domain restriction is done via a definite determiner D, an idea that builds on an earlier proposal by Westerståhl (1984, 1985) that the main function of the definite article is to supply a context set. Contextual domain restriction in our analysis is a presupposition contributed by the typical vehicle of presuppositions, the definite determiner. This conclusion can be cast independently of how we treat presuppositions, e.g. as preconditions on updates of contexts or information states (Heim 1993), or within van der Sandt’s (1992) conception of them as propositions whose place in discourse is underdetermined by syntax—though it seems to favor, we think, Heim’s approach.

The main data for our analysis will come from languages as diverse typologically as Greek and Basque, and we will bring into the discussion data from Salish that suggested a use of D as a domain restrictor on the NP (Matthewson 2001, Giannakidou 2004). The main conclusions of our discussion are three: first, we have indeed evidence for the ‘explicit strategy’ (von Fintel 1998) of domain restriction; second, being contextually restricted is often an inherent property of the Q; and third, in the family of semantic functions associated with D we must acknowledge the function of domain restriction. Finally, we find a difference between strong Qs,
which can be domain restricted by D, and weak Qs which cannot, thus supporting the difference mentioned by Reuland and Ter Meulen (1987).

The discussion proceeds as follows. We start in section 2 with some brief background discussion of St’át’imcets Salish data from Matthewson (1998, 2001) which prompted Giannakidou (2004) to argue that D crosslinguistically performs the function of providing C without iota. In section 3, we introduce our analysis that D provides the context set C by defining the domain restricting function as a type-preserving (i.e. modifier) function $D_{DR}$. In section 4 we discuss how $D_{DR}$ correlates with the weak-strong distinction. It appears that only strong Qs can be contextually restricted via D in Basque and Greek, and we explain this by arguing, following Etxeberria (2005, 2008, 2009), Giannakidou and Merchant (1997), Stavrou and Terzi (2009), that weak Qs are not Qs ($et$, $ett$), but adjectives or cardinality predicates, i.e. number functions. In section 5, finally, we consider a recent proposal by Martí (2008, 2009) that the indefinite plural *algunos* is domain restricted. We present empirical problems with this claim—a number of asymmetries between the claimed restricted indefinites and our $D_{DR}$-ed quantifiers, as well as unrestricted uses of the alleged weak indefinites—and conclude that we are not dealing with domain restriction in these cases, but with a *specificity* felicity condition (Ionen 2006). The presupposition of $D_{DR}$ relies on the common ground, but the felicity condition on just the speaker’s intentions.

2 Background: identifying D as domain restrictor

In this section we introduce the data that, in our view, implicate a role of D in syntactically expressing domain restriction. The idea is present already in Matthewson (2001)—but we will object to the particular implementation she suggested, namely that, universally, the Q combines with an *e* (instead of *et*) type argument; we refer to the Appendix and Giannakidou (2004) for a re-consideration of the Salish data within the spirit of our analysis. We also discuss briefly the analysis of Giannakidou (2004) which initiated the implementation of D providing a context set in Salish, while adding to the discussion the case of D modifying Q observed in Greek and Basque. In section 3, we will present our analysis of the data presented here.

2.1 Quantifiers and D in St’át’imcets (Matthewson 1998, 2001)

Matthewson (1998, 2001) notes that Salish equivalents to *every, few, many,* etc. take DPs arguments as complements, instead of the expected NP:

(8) a. Léxlex [tákem $i$ smelhmúlhats-$a$].
    intelligent [all D.pl woman(pl)-D]
    ‘All of the women are intelligent.’

b. * Léxlex [tákem smelhmúlhats]
    intelligent [all woman(pl)]

(9) a. Úm’-en-lhkan [zi7zeg’ $i$ sk’wemk’úk’wm’it-$a$] [ku kándi].
    give-tr-1sg.subj [each D.pl child(pl)-D] [D candy]
    ‘I gave each of the children candy.’

b. * Úm’-en-lhkan [zi7zeg’ sk’wemk’úk’wm’it] [ku kándi].
    give-tr-1sg.subj [each child(pl)] [D candy]
The D consists of “two discontinuous parts, a proclitic (ti for singulars; i for plurals), which encodes deictic [emphasis ours] and number morphology, and an enclitic ...a which attaches to the first lexical element in the phrase” (Matthewson 2001: 3; cf. Matthewson 1998 for details). Matthewson (2001) thus suggests a new syntax for the QP: first, D combines with the NP predicate to create a DP (type e); then, e becomes the argument of Q which is now of type e,ett. This combination yields a GQ of the usual type ett.

(10) a. \[
\begin{array}{l}
\text{QP tákem i smelhmúlhatsh-a} \\
\text{all D.pl woman (pl)-D}
\end{array}
\]

b. QP \(\langle (e, t), t \rangle\)

\[
\begin{array}{c}
\text{takem} \\
\text{D \(\langle (e, t), e \rangle\)} \\
\text{i} \\
\text{smelhmúlhatsh}
\end{array}
\]

The deviation from the standard GQ analysis is obvious: the domain of Q is not a set, but an individual. D, in Matthewson’s account is an et,e function, in particular a choice function:

(11) \[
[[\text{smelhmúlhatsh (pl.)}]] = [[*]]([[\text{smulhatsh (sg.)}}]]) \quad \text{‘women’}
\]

(12) \[
[[X \ldots a_k]]^g = \lambda f \in D_{et}(g(k)) (f) \quad \text{(Matthewson 2001: (18))}
\]

The index of the determiner specifies which choice function will be used; \(g\) is an assignment function, from indices to choice functions, thus \(g(k)\) is a choice function of type \(et,e\). If the DP is plural, a pluralization operator \(*\) is posited with standard semantics: it takes a one-place predicate of individuals \(f\) and returns all the plural individuals composed of the extension of \(f\).

(13) \[
[[*]] \text{is a function from } D_{et} \text{ into } D_{et} \text{ such that, for any } f \in D_{et}, x: D_c: \quad [*f](x) = 1 \text{ iff } [f(x) \\
\neq 1 \land \exists y \exists z \quad [x = y + z \land [*f](y) = 1 \land [*f](z) = 1]]
\]

(Matthewson 2001: (17))

D thus creates an individual out of a set, which could be understood as \(iota\), but Matthewson insists on a choice function analysis. Demirdache (1997) and Matthewson (1998) further claim that Salish DPs are always linked to the here and now of current discourse. These DPs are so deeply tied to the actual context that Demirdache goes as far as to argue that Salish DPs denote stages of individuals rather than individuals. In the same vein, Matthewson characterizes the D as deictic and the DP as taking always the highest possible scope, and Gillon (2006, 2009) generalizes the characterization deictic to other languages of the Salish family.

We will not insist on the Salish data (but see the Appendix), but rather on the syntactic aspects of Matthewson’s proposal, namely (a) that the domain of Q becomes an individual, and (b) that the Q thus combines with an individual and not a set. These are proposed as a strong hypothesis—the strategy employed in all languages. Giannakidou (2004) and Etxeberria (2005) point out empirical problems with this assumption that we summarize quickly next.
2.2 Problems with the assumption that the domain of Q is $e$

The obvious prediction of Matthewson’s proposal is that Qs should be able to combine with DPs crosslinguistically. However, this prediction is not borne out. We illustrate below with English, Greek and Spanish, but non-compatibility of Q with DP seems to characterize generally languages that possess a distinction between DP and QP.

English:

(14)  
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>* every the boy</td>
<td>f.</td>
<td>all the boys</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>* most the boys</td>
<td>g.</td>
<td>only the boys</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>* many the boys</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>* three the boys</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Spanish:

(15)  
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>* cada los chicos</td>
<td>f.</td>
<td>todos los chicos</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lit.: ‘each the boys’</td>
<td></td>
<td>‘all the boys’</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>* la mayoria los chicos</td>
<td>g.</td>
<td>sólo los chicos</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lit.: ‘most the boys’</td>
<td></td>
<td>‘only the boys’</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>* muchos los chicos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lit.: ‘many the boys’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>* tres los chicos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lit.: ‘three the boys’</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Greek:

(16)  
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>* kathe to aghori</td>
<td>d.</td>
<td>ola ta aghoria</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lit.: ‘every the boy’</td>
<td></td>
<td>‘all the boys’</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>* merika ta aghoria</td>
<td>e.</td>
<td>mono ta aghoria</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lit.: ‘several the boys’</td>
<td></td>
<td>‘only the boys’</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>* tria ta aghoria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lit.: ‘three the boys’</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here we see that Q cannot combine with the DP. The grammatical examples—which would fit Matthewson’s structure—are formed with all and only, elements that have been argued not to be Qs, and which can have alternative analyses as adverbial modifiers of DPs (see Brisson 1998, 2003 for all, von Fintel 1997 for only). Many of the ungrammatical examples above become grammatical as soon as the partitive of is introduced (e.g. most of the boys, many of the boys, three of the boys). So, there is a correlation between the partitive of-DP in European languages and bare DP complements of Q in Salish that is being missed in Matthewson’s account.

A second problem has to do exactly with the analysis of the partitive: if Qs combine directly with elements of type $e$, partitive of must be argued to be semantically vacuous—pace Ladusaw (1982), where of ensures that the Q receives an et input. According to Matthewson indeed, the partitive preposition of is only employed for case only. But in giving up Ladusaw (1982), we lose the neat semantic explanation for why we need an of-element in languages that employ it; for more discussion see Giannakidou 2004, Etxeberria 2005, 2008, 2009.

Finally, and this is the observation we want to focus on, Matthewson’s analysis predicts that, in the typical case, DPs are complements to Qs: [Q [DP]]. However, languages, including Salish, show evidence for both [Q DP] and [D Q] orders. Consider the data below:
(17) a. tákem i smelhmúlhats-a
       D.pl woman(pl)-D
b. zi7zeg’ i sk’wemk’úk’wm’it-a
       each   D.pl child(pl)-D

(18) a. i tákem-a smúlhats   (Matthewson 2001: fn.5)
       D.pl all-D   woman
b. i zi7zeg’-a sk’wemk’úk’wm’it    (Matthewson 1999: (41c))
       D.pl each-D   child(pl)

It is unclear to us what structure Matthewson would assign to these examples, but obviously, they do not fit her suggested universal structure [Q DP]. Importantly, examples where the Q is preceded by the D can also be found in Greek, as shown below:

(19) a. o kathe fititis            (Giannakidou 2004: (32b))
       D.sg each   student
b. * kathe o fititis

And in Basque (a head final language), we find Qs, and not their nominal arguments, to be composed directly with the D. It follows Q because Basque D is a suffix:

(20) a. mutil guzti-ak              (Etxeberria 2005: (37a))
       boy   all-D.pl
b. mutil bakoitz-a
       boy   each-D.sg

These data, where a D combines with a Q are unexpected under Matthewson’s proposal where D universally affects the NP argument and creates an individual; and the fact that we noted earlier that D in these very same languages does not apply to the NP directly suggests that we cannot adopt wholesale the idea that the domain of a Q is an individual. If we do, we make many wrong predictions, and we miss the observed interaction between Q and D, which is also observed in Salish, as we saw. Giannakidou 2004 proposes to capture this interaction by suggesting that D provides domain restriction in the form of a context set. This analysis will be our starting point.

2 In Hungarian every NP can be expressed in two ways.

(i)  a. minden diák
       every student
b. az összes diák
       the all   student
c. * összes az diák
       all the student

The relevant example for us is (ib) where the D combines with the Q, and not with its nominal argument, as shown by (ic), just as our Basque and Greek examples. Thanks to Aniko Liptak for helping us with Hungarian data.
2.3 Giannakidou (2004): D can function as a domain restrictor

Giannakidou takes the deictic nature of the Salish DP to indicate that, as an argument, such a DP is always contextually restricted. She then takes the embedding of DP under Q to indicate that, in this language (and others like it; see Gillon 2006), Qs combine only with contextualized domains, never with unrestricted ones. Giannakidou (2004) suggests the following reanalysis of the Salish data. D contributes a context set (Westerståhl 1984, 1985). This set is indicated as the contextual variable C, yielding a GQ with a contextually specified set as its generator.

\[
\text{(21)} \quad \text{DP }\langle e, t, t\rangle \quad \text{D }\langle e, t, \langle e, t, t\rangle\rangle \quad \text{NP }\langle e, t\rangle
\]

\[
\text{(22)} \quad [[X... a]] = \lambda P \lambda Q \{x : C(x) = 1 & P(x) = 1\} \subseteq \{x : Q(x) = 1\}
\]

\[
\text{(23)} \quad [[ti\text{}\text{ smúlhat-s-a}]] = \lambda P \{x : C(x) = 1 & \text{woman } (x) = 1\} \subseteq \{x : P(x) = 1\}
\]

‘D woman’

In Giannakidou’s analysis we have the standard GQ denotation expected of a definite, only the domain argument is now intersected with some property C. Once we get this structure, we can apply Partee’s (1987) type-shifting BE, and go from the GQ to the predicative type \(\langle e, t\rangle\).\(^3\)

\[
\text{(24)} \quad \text{BE: }\langle e, t, t\rangle \rightarrow \langle e, t\rangle : \lambda P_{e,t} [\lambda x \{x \in P\}]
\]

If we assume, along with Partee (1987), Chierchia (1998), and others, that type shifters can have some kind of syntactic realization, it follows that BE will be covert in SS. The result will be:

\[
\text{(25)} \quad \text{QP }\langle e, t, t\rangle \quad \text{Q }\langle e, t, \langle e, t, t\rangle\rangle \quad \text{PP }\langle e, t\rangle \quad \text{\bigotimes}_{\text{BE}} \quad \text{DP }\langle e, t, t\rangle
\]

This analysis renders Salish QPs partitive structures, and, Giannakidou argues, is consistent with the fact that there are no overt partitives in SS.\(^4\) Since overt type-shifters block covert shift

\(^3\) Matthewson (to appear) argues against the possibility of having the covert type-shifter BE in SS because, it is claimed, there is no language-internal evidence for it; assuming that BE exists in the language, she notes, would make incorrect predictions, e.g. that main predicates could have Ds on them, which they cannot. However, claiming that BE doesn’t apply in SS would be a strange gap in the language. The type shifting approach (including the modifications by Chierchia in terms of covert versus overt type shifters) would allow BE and block it only if there is an overt element doing what BE does. The question to answer then is: do we have evidence that perhaps D, or something else, does this in SS? This is our perspective here; cf. §3.

\(^4\) Lisa Matthewson (p.c.) mentions that in SS there is a preposition that may perform (along side other functions; there are only four prepositions in this language) the function that a designated preposition (\textit{of}) or a case-marker assumes in other languages. However, this preposition is not required (as \textit{of} is in English, or \textit{de} ‘of’ in Spanish). The
(Chierchia 1998), the prediction is that languages with overt partitive prepositions -of- or partitive case (English, Greek, Spanish, Basque, etc.) will block the covert shift. What we saw in the previous section, i.e. that in these languages the DP does not combine directly with Q, as well as the contrast between these languages and Salish, are thus readily explained.

To sum up, the upshot of Giannakidou’s reanalysis is the following. First, the structures where a Q embeds a DP valuable not because they force a syntactic characterization of the domain argument as an individual, but because they show that contextual domain restriction is syntactic via D. This idea is further expanded in Gillon (2006, 2009), where she argues that conveying domain restriction is the main function of D crosslinguistically. As a thesis, the claim that D conveys domain restriction is an important contribution to the debate of whether domain restriction is done purely pragmatically or goes through the grammar, pointing in the latter direction. And the fact that we find D applying to the Q directly (Greek, Basque, and probably Hungarian as we noted in fn. 2), suggests that the domain restricting function of D can affect syntactically the Q itself.

3 New proposal: Domain restricting D as a modifier

3.1 Two ways of domain restricting via D: on the NP, or the Q

We will now preserve Giannakidou’s insight, but propose a somewhat simpler analysis, where D functions not as an individual or GQ forming function, but as a modifier: a function that preserves the type of its argument, and modifies it by supplying the contextual restriction C. When D modifies the NP argument and restricts it, we have the following:

\[
\| D_{DR} \| = \lambda P, \lambda x \ P(x) \cap C(x)
\]

The D in Salish exhibits typically this case of domain restriction—a type-preserving function, yielding a contextually salient set of individuals characterized by the NP (P) property.\(^5\)

\[
\| i...a \| = \lambda P, \lambda x \ P(x) \cap C(x)
\]

Salish D applies directly to the nominal domain to restrict it; but European D won’t be able to restrict the NP—when D is fed an NP it functions referentially in these languages, hence the need for the partitive preposition to give back the right input (et) for composition with Q. The application of D\(_{DR}\) on the NP in Salish is consistent with the idea of a lower DP layer (see especially Szabolcsi 1987, 2009, and more works cited in Alexiadou et al 2008).

---

\(^5\) A similar result could be achieved by using Chung and Ladusaw’s (2003) Restrict operation:

(i) Contextual \(\text{Restrict} ([\lambda x \text{NP}(x)], C) = \lambda x \text{NP}(x) \land C(x)\)  \((\text{Giannakidou 2004: (31)})\)

However, and this is important especially for Greek and Basque, D can also apply to the Q itself, for which a mere Restrict would not suffice.
It is important to stress that our definition of the modifier $D_{DR}$ says essentially that the two important semantic functions of definiteness—familiarity/saliency (and we understand here familiarity in the classical way of Heim 1982, i.e. carrying a familiar index), and reference—can be dissociated, and that a $D$ element will have the ability, in some cases, to contribute just the former, without necessary functioning as an iota. We will see in 3.2 how ‘demotion’ of reference comes about in Greek and Basque when $D$ composes with $Q$. But having considered the Salish data in some detail by now, it must be emphasized that adopting $D_{DR}$ for the DP under $Q$ in this language, allows us to maintain the uniform characterization of the quantifier domain as a set crosslinguistically, and this, we believe, is a welcome result. The distinctive feature of Salish, additionally, is that the domain argument is always contextualized syntactically via $D_{DR}$.

As we noted, $D$ also appears to be syntactically attached to the $Q$:

   a. i tákem-a smúlhats (Matthewson 2001: 151, fn.5)
       D.pl all-D woman
       ‘all of the women’
   b. i zi7zeg’-a sk’wemk’úk’wm’it (Matthewson 1999: 41c)
       D.pl each-D child(pl)
       ‘each of the children’

(29) Greek (Giannaki 2004):
   a. o kathe fititis
       D.sg every student
       ‘each student’
   b. kathe fititis; *kathe o fititis
       ‘every student’

(30) Basque (Etxeberria 2005, 2009):
   a. mutil guzti-ak
       boy all-D.pl
       ‘all of the boys’
   b. *mutil guzti; *mutil-ak guzti

In Greek and Basque, this is the only way for $D$ to function as a domain restrictor. In this case, $D$ is a modifier of $Q$, we argue, yielding a $Q$ that will require a contextually restricted domain. The semantic effect of $D_{DR}$ is always modifying the NP argument, that is, $C$ always intersects with the NP argument.

(31) $D_{DR}$ on the $Q$

$$[[D_{DR}]] = \lambda Z_{et, ett} \lambda P_{et} \lambda Q_{et} Z \left( P \cap C \right) (Q); \text{ where } Z \text{ is the relation denoted by } Q$$

Following our earlier work (Giannaki 2004, Etxeberria 2005, 2008, 2009), we assume that $D$ attaches syntactically to the $Q$, so the result is a $QP$ with the following structure:

(32) a. $\left[ QP_o D + kathe \_Q \left[ NP_{fititis} \right] \right]$
    b. o kathe fititis = [kathe (C)] (student)  ‘each student’
We show further in section 4 that only strong Qs can undergo D\textsubscript{DR} (for earlier discussion of this see Etxeberria 2005, 2008, 2009). In section 3.3, we compare the product of D\textsubscript{DR} application ‘o kathe fititis’ to ‘each student’ in English and see that the result is similar in terms of presupposition: they both require non-empty domains (and both QPs are strongly distributive, a fact that we gloss over here). Our hypothesis, then, will be that a possible composition of each (and similar Qs crosslinguistically) would involve a structure parallel to the Greek and Basque that we propose here: [D-\textit{every}]; only with each, D is covert. We are thus suggesting a generalization that all inherently D\textsubscript{DR}-ed Qs have undergone a process of D modification that supplies C, and future examination will show if this is a tenable generalization.

The composition of D with Q that we propose is a novel mode of composition for D, hence it is important to provide arguments for it. Etxeberria (2005, 2009) excludes two other hypotheses: (i) that these Qs create DPs and not QPs—see also our discussion next in §3.2; and (ii) that Basque Qs that combine with D are adjectives. In the next section, we offer more arguments in favor of our structure of D composing with Q, by pointing out crucial differences between [[D-Q] NP] structures and regular DPs. But before we proceed to examine the details of our syntax, we want to stress again that we propose D\textsubscript{DR} as an additional function that D can have in a given language. We are not suggesting that D\textsubscript{DR} replaces the referential function (or the generic use of D). We are merely suggesting that D can also function as a modifier, in which case it does not refer but merely contributes the context set C.

We will close this section with a few typological remarks. First and foremost, it is not necessary in our analysis that DR be performed by a \textit{morphologically} definite D. In Salish, for example, the absence of a morphological contrast between definiteness and indefiniteness renders the single available D vehicle of both reference and salience, thereby also enabling domain restriction (see Appendix). Greek and Basque (and Hungarian) do exhibit a morphological distinction of (in)definiteness, and domain restriction is expressed by a definite D. Thus, we do make the prediction that if a language encodes familiarity and novelty in the D system, it will be only the familiar D that will qualify for D\textsubscript{DR}.

What happens if a language lacks determiners altogether? The data reported in Cheng (2009) suggest that the referential and D\textsubscript{DR} functions will again be performed by the same, albeit
morphologically non-definite, item: Chinese *dou* is not a morphological definite, but takes up the D_DR function— and there is independent evidence that *dou* functions as a definite when used with free choice items (Giannakidou and Cheng 2006).

3.2 **D_DR on Q does not create a referential expression**

The idea behind our proposal that D in *o kathe* and Basque Qs (and their equivalents) functions as a Q-modifier rather than a regular iota, is that, in this position—i.e. preceding Q; or following it in Basque— D is fed the wrong type of argument: a Q-denotation rather than the expected NP. This is going to be a fatal error in languages like English, a type mismatch; but in Greek and Basque the structure is saved by shifting from iota to D_DR. This is reflected in our analysis with the syntax of a modifier adjoined to the constituent it modifies, in this case the Q.

One could ask, however, how do we know that *o kathe* and *guzti-ak* (and the rest of Basque strong Qs) do not create DPs like the following?

(34) a. Greek:
I tris fitites pu irthan sto parti, itan endelos methismeni.
[The [three students that came to the party]] were completely drunk

b. Basque:
Festara etorri ziren hiru ikasle-ak erabat mozkortuta zeuden.
[to the party came aux.pl three student[D.pl] completely drunk were

These structures, which appear freely in both Greek and Basque (as well as English, of course), are referring DPs, as indicated in the brackets, and are interpreted like regular definite descriptions: the denotation of *three students* will be a unique set of three students. The output of these structures is then of type *e*, and not a GQ, which is the output of the D_DR structure as we argued:

(35)
```
DP e
   /\   \
D et,e   NP et
   /\   \ 
  the three students
```

Here we see a D that takes an NP with an adjectival numeral in it (for more discussion of this, see section 4), and turns it into a referential expression. What are the arguments that our D_DR-ed structure is not a DP of this kind?

---

6 Notice that non-quantity denoting weak quantifiers, are not easily compatible with D in Greek, while in Basque a non-numeral weak Q does not combine with the D at all (with some exceptions, see (ii)):

(i) a. I {poli/liji/*kapjii} fitites pu irthan sto parti, ekanan poli fasaria. (Greek)
   [The [many/few/*some students]] that came to the party made a lot of noise.

b. Festara etorri ziren ikasle [{*asko/*batzuk/*zenbait]-ak} zarata haundia egin zuten (Basque)
   to the party came aux student many/some/some-D.pl noise big make aux
Importantly, apart from the obvious reason that *to kathe agori* ‘each boy’ is a quantificational expression, evidence that D in *o-kathe* does not create a DP comes from two facts. First, [o-*kathe* NP] cannot co-occur with the demonstrative pronouns (*aftos* ‘this’, *ekinos* ‘that’)—which in Greek, like in many other languages, must embed DPs (Stavrou 1983; Stavrou and Horrocks 1989, Alexiadou et al. 2008): 7

(36)  a. *aftos* *(o) fititis   
      this the student     
      ‘this student’   
    b. *ekinos* *(o) fititis   
      that the student  
      ‘that student’   

(37)  a. {afti/ekini} i tris fititis   
      these/those the three students   
    b. {aftos/ekinos} o enas fititis  
      this/that one student   

(38)  *{aftos/ekinos} o kathe fititis  
      this/that the every student

Demonstratives are used to refer to objects in the immediate discourse. Since the demonstrative cannot occur with *o-kathe*, we must conclude that the *o-kathe* constituent does not refer to an object in the context. This is strong evidence that the *o-kathe* structure is neither a referential DP nor syntactically a DP.

The second piece of evidence that *o-kathe* NP does not behave syntactically as a DP comes from the fact that it cannot spread. D spread is pervasive in Greek, and the structures are known also as *polydefinites* (Alexiadou and Wilder 1998, Campos and Stavrou 2004, Kolliakou 2004 who coined the latter term, Ioannidou and den Dikken 2006, Lekakou and Szendroi 2009):

---

Weak Qs as a class, then, do not generally embed under D. We are not going to address the contrast with SOME here, but we would like to suggest that is probably due to the fact that SOME introduces ∃ (inherently, or via existential closure), thus preventing combination with a definite D. The Basque counterpart of *few* can combine with the D, but only in relative clauses (some speakers do not accept *gutxi+ak*, but do accept the construction if instead of the D a demonstrative is used.).

(ii)  Helmuga gurutzatu zuten txirrindulari gutxiak lehera iritsi ziren.   
      finish line cross aux cyclist few-D.pl burst do arrive aux   
      ‘The few cyclists that crossed the finish line did so exhausted.’

Due to space, we won’t discuss this case here, but see Etxeberria 2005, 2008 for extensive discussion on this.

7 The test on the impossibility of co-occurrence of demonstratives and the DRR-ed *o k ath e* that we apply in Greek cannot be used in Basque because the D and the demonstratives appear in the same syntactic position.

(i)  a. ikasle-a  
      student-D.sg   
    b. ikasle-ak  
      student-D.pl 
    c. ikasle guzti-ak  
      student all-D.pl   

(ii)  a. ikasle hau/hori/hura   
      student dem.sg.proximal/mesial/distal   
    b. ikasle hauek/horiek/haiek   
      student dem.pl.proximal/mesial/distal   
    c. ikasle guzti hauek/horiek/haiek   
      student all dem.pl.proximal/mesial/distal
These [DP plus DP] are often thought to express a predication relation between the two DPs, but the details are not crucial here. What is important is that D spread is not possible with o kathe, but is possible with D followed by a numeral:

(40)  a. * o kathe o fititis  
     b. o enas o fititis  ‘the one the student’  
     c. i tris i fitites  ‘the three students’

In a language where DPs duplicate easily and routinely, the impossibility of D-spread with o-kathe suggests again that the o kathe does not create a DP.

A third argument against the DP analysis comes from Basque, where it is possible to conjoin two NPs or two APs under the same single D, as shown below. (In Greek this is not possible, so we cannot apply this test).

(41) NP conjunction 
     ‘The students and teachers are in exams period.’

(42) AdjP conjunction 
     Maia erg [horse big and elephant small]-D.pl.abs see aux.pl  
     ‘Maia has seen the big horses and small cats.’

If we were to assume that Basque strong Qs created DPs with the structure expressed in (43), this would predict that we should be able to conjoin two strong Qs under the same D. However, this option is completely unaccepted as the ungrammaticality of the example (44) shows.

(43) [DP [QP NP Q] D]  
     ‘Most of the students and all of the teachers arrived early (intended).’  
     ‘Each girl and all of the boys won a prize (intended).’

These sentences show that Basque strong Qs create QPs and not DPs headed by the D, and that the Basque D composes with the Q (cf. Etxeberria 2005, 2009 for extensive discussion).

We thus conclude that DDR-ed Qs do not create referential DPs, like the combination of D with a weak numeral, but a QP. Due to the fact that the D in these cases is a modifier function
and it is a head, the simplest thing to assume is, as we do, that the D adjoins to the Q. Another option would be to move D from a lower position and adjoin it to Q in a structure [QP[DP[NP]]], like the one we find in Salish:

(45)

\[
\text{QP} \\
\text{Q} \quad \text{DP} \\
\text{D} \quad \text{NP}
\]

In this case we get a quantificational element like in our analysis since Q would be in a structurally higher position. Hence this implementation (after movement of D to a higher position) and our analysis of direct adjunction to Q are equivalent and allow D to function as a Q-modifier. At the same time, the movement analysis captures uniformly the domain restriction as always associated with a lower D position. We are sympathetic towards this option, and at present we have no way to distinguish empirically between our direct adjunction of D to Q, and adjunction to after movement. However, because [QP[DP[NP]]] is an ungrammatical structure in Greek and Basque, it seems to us that in order to answer the question of why D cannot remain in situ, we would have to just stipulate that the movement of D to Q is obligatory. Our direct adjunction analysis does not require such a stipulation, a feature that makes it conceptually more attractive, we think.

What matters to us is that D ends up in a position where it has to take Q, and not NP, as its argument. Because of this misplacement, D cannot function “normally” since there is no set argument. The emergence of \( D_{DR} \) then follows as a ‘side effect’ of avoiding type conflict, and the referential ability of D is traded towards the pragmatic only function of domain restricting.

3.3 The Q created via D presupposes a non-empty salient domain

In this section we consider the presuppositional content of quantifiers that have undergone \( D_{DR} \). These appear to be presuppositional and veridical. The notions are given below, and it becomes clear that they are closely related, if not the same:

(46) Presuppositionality of quantificational determiners
A determiner \( \delta \) is presuppositional iff for all \( A, B \subseteq D \), if \( A = \emptyset \) then, \( \langle A, B \rangle \notin \text{Dom}(\delta) \).
(based on Heim and Kratzer 1998:163)

(47) (Non)veridicality of quantificational determiners (Giannakidou 1999)
A determiner/quantifier \( \delta \) is veridical iff it holds that:
\[
[\delta \text{ NP VP}]. = 1 \rightarrow \exists x \text{ NP} (x); \text{ otherwise, } \delta \text{ is nonveridical.}
\]
“\( \rightarrow \)” means “presupposes”

---

8 Though the semantic function of D is that of a modifier (which are more commonly phrasal), its status as a head is determined by its morpho-phonological properties: D is phonologically weak (a clitic, certainly in Basque where it is an affix, and likewise in Greek and English), hence one cannot expect it to have the status of a full projection.
Presuppositional and veridical determiners can only operate on a nonempty domain, i.e. they presuppose such a domain (or, they come with ‘existential commitment’ as in Horn 1997). This presupposition is consistent with familiarity, and saliency is further imposed: that this non-empty set be further restricted by some salient property corresponding to the context set that the D provides. Gillon (2009), in a similar vein, states that “C is itself presuppositional. As we will see below, C is never empty. […] This means that there will always be individuals that match the NP description. This guarantees the existence of referents; it does not, however, guarantee the existence of a unique referent.” (Gillon 2009: 12). And we fully agree.

In order to appreciate the claim that o kathe, each and Basque strong Qs (and we will add here both) are presuppositional, it will be helpful to contrast them with all, every, and their equivalents. With these, we also have an intuition of non-empty domains, but this intuition is not a pre-condition for felicitous use. It may not even be an entailment: we see below that we can negate the non-emptiness of the domain of all and every without contradiction:

(48) If you find every mistake, I’ll give you a bonus; but there may be no mistakes at all.
    An vris kathe lathos tha sou doso bonus; alla bori na min ipaxroun katholu lathi.
(49) If you find all (the) mistakes, I’ll give you a bonus; but there may be no mistakes at all.
    An vris ola ta lathi tha sou doso bonus; alla bori na min iparxoun katholu lathi.

Each and both, on the other hand, come out as contradictory in this case. We illustrate below with Greek o kathe ‘each’ and ke i dhio ‘both’, literally “and the two”. Notice that i in ke i dhio is the plural of the definite article, indicating that ke i dhio has also undergone D_{DR}:

(50) An vris to kathe lathos, tha sou doso bonus; alla bori ke na min iparxoun katholu lathi. #If you find each mistake, I’ll give you a bonus; # but there may be no mistakes at all.
(51) An vris ke ta dhio lathi, tha sou dos bonus; alla bori ke na min iparxoun katholu lathi. #If you find both mistakes, I’ll give you a bonus; # but there may be no mistakes ay all.

In Basque, the same situation obtains, and again, we find -a(k), the definite D, with all the strong quantifiers (data from Etxeberria 2009):

(52) a. Akats guzti-ak/gehien-ak aurkitzen badituzu, sari bat emango dizut. 
    mistake all-D.pl.abs/most-D.pl.abs find if-aux. reward one give aux 
    # Baina gerta liteke bat-ere akats-ik ez egote.a. 
    but happen aux one-too mistake-part no be-nom 
    ‘If you find all of the/most of the mistakes, I’ll give you a reward. # But there may be no mistakes at all.’
    b. Ikasle bakoitz-ak libruru bat irakurtzen badu, sari bat emango diot. 
    student each-D.erg book a read if-aux reward one give aux 
    # Baina ikasle-rik ez dagoenez, ez dut sari-rik emango. 
    but student-part no since no aux reward-part give 
    ‘If each student reads a book, I’ll give (each student) a reward. # But since there are no students, I’ll give no reward’

---

Bakoitz is additionally distributive, hence grammatical only if there is a Share element (other than the event variable) in the structure over which to distribute (see Etxeberria 2002a, 2008).
We see then a consistent pattern of complex Qs, where D appears to be a constituent with the Q, and the Q as a whole requires a context that contains a nonempty domain for it. In our analysis, presuppositionality follows simply from the fact that D applied and provided C, the context set. DR-ed Qs, naturally, cannot be used in contexts that do not warrant existence or salience. Therefore, they cannot be used to refer to kinds, a fact known for each since Beghelli and Stowell (1997):

(53)  
   a. **Kathe monokeros** exi ena kerato.  
       Every unicorn has one horn.
   b. # **O kathe** monokeros exi ena kerato.  
       Each unicorn has one horn.
   c. # Adarbakar **bakoitza-a-k** adar bat dauka.  
       unicorn each-D.sg-erg horn one has
       Good: only as a claim about a specific set of unicorns, e.g. in an illustration that is present physically at the time of conversation.

(We’ve included objects to ensure that distributivity with the distributive quantifiers is satisfied). A DR-ed Q cannot be used to refer to a kind because kind reference is not tied to a context, and cannot even be about non-actual individuals, as with the unicorns above. Kind reference is thus unrestricted, and **o kathe, bakoitza, and each**, as we see, cannot be used in this way. However, in characterizing sentences they are fine:

(54)  
   a. Greek: Sto programa mas, **o kathe fititis** prepi na epileksi dio mathimata simasiologias.
   b. Basque: Gure programan, **ikasle bakoitza-ak** bi semantika eskola aukeratu behar ditu.
   c. English: In our program, each student must choose two semantics classes.

What is crucial is the restriction ‘in our program’, which renders the example not a predication of a kind, but a characterizing sentence that expresses a generalization about a particular set of students in our program (see Chierchia 1998, and earlier discussions in Carlson’s 1977 seminal work on why such restricted sets can never evolve into kinds). **O kathe** ‘D.sg each’, **bakoitza** ‘each-D.sg’, and **each** can be used in this way, and this is consistent with our proposal that their quantification must be about a salient set for felicitous use.

**O kathe**, in this use, appears to also have indiscriminative uses, on a par with the Greek free choice item **opjosdhipote** (Giannakidou 2001), which can also co-occur with **o** (Lazaridou-Chatzigoga 2007):

(55)  
   a. Tin periodho ton eksetaseon erxete **o kathe fititis** ke me enoxli me anoites erotisis.
   b. Tin periodho ton eksetaseon erxete **o opjosdhipote fititis** ke me enoxli me anoites erotisis.
       During the exam period, just about any student may come by and bother me with silly questions.

Here **o kathe** does make reference to a salient set in the discourse—the students of the speaker—and expresses a generalization about this set (notice the modal use of the imperfectives erxete, enoxli translated as “may come by, may bother”), while also being indiscriminative (in the sense of Horn 2000, 2005): **o kathe fititis** is read like any random student of the speaker, as suggested
above by using just about any in the translation. The free choice version also refers to salient set, a fact that in itself challenges the idea that opjodhipote is always widened (Kadmon and Landman 1993; for additional criticism see Giannakidou in press).

We conclude therefore that D<sub>DR</sub>-ed Qs can be used only in contexts where a salient non-empty domain is established. They can also be used for habitual reference, and in this case they refer again to salient sets. They are, however, unable to refer to kinds because the kind presupposes an unrestricted, open, domain. 10

Next, we move to show that the operation D<sub>DR</sub> can only apply once.

### 3.4 Exclusive disjunction: D-restriction happens either on Q or NP, not both

When contextualization happens at the Q level, the addition of another definite results in ungrammaticality (cf. Giannakidou 2004, Etxeberria 2005, 2008, 2009); recall that we noted earlier the impossibility of DP reduplication with o-kathe:

\[(56)\]
\[
\begin{align*}
&a. \ * \ ikasle-ak \ & \ guzti-ak \\
& \ & \ student-D.pl \ & all-D.pl \\
& \ & \ ‘The all the students’
\end{align*}
\]

\[
\begin{align*}
&b. \ * \ ikasle-a \ & \ bakoitz-a \\
& \ & \ student-D.sg \ & each-D.sg \\
& \ & \ ‘The each the student’
\end{align*}
\]

\[(57)\]
\[
\begin{align*}
* \ o \ kathe \ & \ o \ fititis \\
\ & \ Greek
\end{align*}
\]

The impossibility of this double application of D is also found in Salish (Matthewson 2009), and Chinese (Cheng 2009). The overt partitive is also excluded as shown below, (58). Under Ladusaw’s (1982) account where partitives provide elements of type et, the ungrammaticality is unexpected because here the partitive does not produce type mismatch. In other words, the partitive ikasleetatik (lit.: student the.pl of) would yield the correct predicative argument (et type) for the Q to quantify over; but still, (58) is out. 11

10 Guzti-ak can be used (not bakoitz-a) to refer to sub-kinds:

(i)

Dinosauru guzti-ak aspaldi desagertu ziren.
Dinosaur all-D.pl long-time-ago disappear aux.past
‘All the dinosaurs became extinct a long time ago.’

Greek o kathe ‘each’ as well as Basque bakoitz-a ‘each’, crucially, do not have this sub-kind use, and unlike -ak in guzti-ak, the D used with them is a singular (o and -a).

(ii)

a. * O kathe dinosavros exi eksfanisti.

b. * Dinosauru bakoitz za aspaldi desagertu zen.

In (i) guzti-ak quantifies over kinds of dinosaurs, not individual dinosaurs—a fact reinforced with the kind-level predicate extinct. This may be expected if plural, in this case, does not function as a domain restrictor but as a kind forming function. Both Basque and Greek singular Ds are also kind operators but in order for them to create kind readings they must take a set, i.e. a NP as the input. However, when the singular D combines with a Q (e.g. bakoitz or kathe) it simply cannot function as a kind forming function. More details will have to be left for the future.

11 A puzzle for our approach is presented by cases like (i), where the Q combines with a second definite in the genitive case. Such cases appear to contradict the idea that domain restriction happens only once:
Hence, contextually restricting more than once does not yield a type mismatch. Now, we know from section 3.1 that partitives behave as contextual restrictors in languages where $D_{DR}$ cannot apply directly to the NP argument, e.g. Basque, English, Greek, etc. Thus, in our bad examples we have what could look like double contextual restriction. Why is this option excluded? We see two reasons. First, as we showed earlier in our discussion of Greek, definite reduplication with $D_{DR}$ is excluded. The reason for this is that definite reduplication requires two definites, and $D_{DR}$-ed Qs are simply not DPs. In Basque, definite reduplication is disallowed (for reasons that need not concern us here), so it cannot be an option to begin with. Hence the “double” domain restriction via $D_{DR}$ is ruled out on what could be thought of as morpho-syntactic grounds.

But there is also a pragmatic reason. Additional contextual restriction is redundant: what would it mean to contextually restrict more than once? Not much, we think. Unlike adjectival or other modification that adds a different description with each application and narrows down the NP domain in an informative way, $D_{DR}$ gives the same description—$C$— and does not reduce the domain further, nor does it have any other discourse effect. Notice that modifying a noun with the same adjective may also be redundant, but it also creates a different effect:

(59) an expensive expensive car

In (59) only one of the adjectives is interpreted as a restrictor. The other is interpreted as a degree modifier like ‘very’, yielding the meaning: a very expensive car. Hence reduplication of identical modifiers is generally prohibited in the usual case too, and the shift to some other
meaning is triggered as a way to avoid redundancy. It is then only normal to expect redundancy with contextual restriction.\footnote{The example in (59) could also be interpreted as ‘an expensive car among a certain set of expensive cars’, which is a slightly different interpretation than ‘a very expensive car’. However, in this second interpretation, we would not be talking about the same adjective (\textit{expensive} in this case) restricting the same NP twice; rather the second \textit{expensive} would be restricting the AP \textit{expensive car}.}

We thus claim that, at least in the languages we are studying, we cannot have simultaneously $D_{DR}$ on the Q and the NP (via the partitive); for more data from Basque illustrating the interaction of $D$ with partitive case and how it is consistent with this generalization see Etxeberria (2005, 2008, 2009). In the next section, we concentrate on fraction expressions that contain $D$, and show that these too are consistent with the impossibility of $D_{DR}$ simultaneous to both Q and NP.

### 3.5 D in fraction expressions: not $D_{DR}$

In fraction expressions we find what could be a Q accompanied by a D, and its NP argument accompanied by a partitive (or a partitive-meaning genitive, as is the case in Basque). Such cases are found in many languages:

(60) Basque:

a. Ikasle-en erdi-a/heren-a berandu etorri da.
   student-D.pl.gen half-D.sg/third-D.sg late arrive aux
   ‘Half/One third of the students arrived late.’

Spanish:

b. La mitad de los estudiantes llegó tarde.
   D.sg half of the students arrived late
   ‘Half of the students arrived late.’

French:

c. La moitié des élèves est arrivée en retard.
   D.sg half of-D.pl students be arrived late
   ‘Half of the students arrived late.’

Greek:

d. I pliopsifia ton fition psifise yper.
   D.sg majority the.gen students.gen voted in favor

English:

e. The majority of the students voted in favor.

Are these cases of Q via D restriction followed by a partitive (thus defying own ban on simultaneous Q and NP restriction), or are they to be analyzed as something else? We think that they are actually instances of something else.

Importantly, fraction expressions (at least in the languages we are considering) are not Qs, a prerequisite for applying $D_{DR}$, but NPs. The D with the fraction expression is inserted for syntactic reasons to turn the NP into an argument, since bare nouns in Basque, French, Greek, or Spanish –particularly singulars– are not allowed (cf. Artiagoitia 1998, 2002; Etxeberria 2005, 2007 for Basque; Bosque 1996 for Spanish; Kleiber 1990, Bosveld de-Smet 1998 for French; Sioupi 1998 for Greek). When we eliminate D, the sentences become ungrammatical:
(61)  

a. * Ikasle-en erdi berandu etorri da
    student-D.pl.gen half late arrive aux

b. * Mitad de los estudiantes llegaron tarde
    half of D.pl students arrived late

c. * Moitié des élèves est arrivée en retard
    half of-D.pl students be arrive late

d. * Pliopsifia ton fititon psifise yper.
    majority the.gen. students.gen voted in favor

e. * Majority of the students voted in favor

Notice in the same vein the impossibility of the English bare singular —majority—in an argument position. Similar examples from Spanish (as well as other Romance languages, e.g. Catalan, French) are shown below with mayoría ‘most’, where, as above, a quantifying word combines with a D, and its argument NP is necessarily followed by a partitive.

(62)  

La mayoría de los estudiantes suspendieron el examen.
the.sg majority of D.pl students failed the exam
‘The majority of the students failed the exam.’

Again, what seems to be going on in Spanish is that mayoría, like pliopsifia in Greek, is not a Q but a noun, and that the first D in la mayoría de los NP does not really function as a definite, but is rather required in order to turn the NP into an argument (cf. Etxeberria 2009).

Evidence in favor of the fact that fraction expressions—as well as the Spanish counterpart of most—are nominal expressions (and not Qs) comes from the following fact: these elements can combine with numerals, e.g. one, two, etc.

(63)  

a. Basque:    ikasleen heren bat
    student-D.pl.gen third one

b. Spanish:   un tercio de los estudiantes
    one third of D.pl students
    una (gran) mayoría de los estudiantes
    one (great) majority of D.pl students

c. French:    une moitié des élèves
    one half of-D.pl students

d. English:   one half of the students

Thus, from what we’ve seen in this subsection, fraction expressions such us half, third, majority, etc. are to be considered nouns or NPs and not Qs. It follows then that there is no domain restriction of D in this case.

At this point we will summarize our main conclusions: First, D as a domain restricting function applies to NPs (Salish) as well as Qs (Greek and Basque), so both options must be allowed in grammar. The domain restricting function of D on the Q arises, as we suggested, as demotion of iota in order to avoid mismatch, since in this case D is fed Q and not NP. Second, when the DDR applies to Q, the created Qs are presuppositional and refer to nonempty discourse
salient domains. We believe that the D plus Q analysis generalizes to all presuppositional Qs, including those like *each* which do not exhibit an overt D. Third, undergoing D_{DR} explains why *each* and our Basque and Greek D_{DR}-ed Qs cannot be used to refer to kinds, whose domain, by the very nature of the kind, is unrestricted. Finally, we showed that D_{DR} can only apply once, either to the Q or to the NP, and this followed from morphosyntactic as well as pragmatic reasons (i.e. redundancy).

4 Contextual restriction via D and the weak-strong distinction

Up until now, we focused on strong Qs and showed that they are contextually restricted via D. We also distinguished in section 3.2 this D_{DR} application of D, from the regular iota D that applies on numerals (as in *the three* students). Here we examine in a little more detail how the domain restricting function D_{DR} correlates with the weak-strong distinction.

In Basque, there is a clear and very significant asymmetry between strong and weak Qs: while the former must appear with the D, as shown by the examples in (64-65), the latter do not combine with D (66-67).

\[(64)\]
\[
a. [Ikasle guzti-ak] berandu etorri ziren.
   [student all-D.pl.abs] late come aux.past.pl
   ‘All of the students came late.’
   
b. * [Ikasle guzti] berandu etorri ziren.
\]
\[(65)\]
\[
a. [Ume bakoitz-ak] goxoki bat jan zuen.
   [child each-D.sg.erg] candy one eat aux.past.sg
   ‘Each student ate a candy.’
   
b. * [Ume bakoitz] goxoki bat jan zuen.
\]
\[(66)\]
\[
a. [Zenbait politikari] berandu iritsi ziren.
   [some politician] late arrive aux.pl.past
   ‘Some politicians arrived late.’
   
\]
\[(67)\]
\[
a. [Politikari asko] berandu iritsi ziren.
   [politician many] late arrive aux.pl.past
   ‘Many politicians arrived late.’
   
\]

It appears that only strong Qs can compose with D in Basque. In Greek, too, weak Qs cannot combine with D to become a constituent with it: *o kapjos fititis* ‘the some student’, *i meriki fitites* ‘the several students’ (as mentioned in section 3.2 where we discussed the embedding of QP under D).

Weak Qs have often been treated in the literature as “adjectival”, and therefore are not considered (real) Qs of type et,ett (cf. Milsark 1979, Link 19884, Partee 1988, Kamp & Reyle 1993, Krifka 1999, van Geenhoven 1998, Landman 2002). Link (1984), for example, analyzes cardinals as adjectives, a common idea in the references above. Ionin and Matushanksy (2006) furthermore argue that weak numerals, at least, are modifiers. Greek weak Qs are argued to be adjectival as a class in Giannakidou and Merchant (1997), Stavrou and Terzi (2009); and
Etxeberria (2005, 2008, 2009) suggests that weak Qs in Basque are cardinality predicates (number functions) which are generated in the predicative type \( et \). Support for the adjectival analysis comes from the fact that unlike strong quantifiers, weak ones are grammatical in predicative positions as exemplified in (80), vs. (81).

(68) \[ \text{Gonbidatu-ak [ikasle asko/batzuk/gutxi] ziren.} \]  
\begin{align*}
guest-D.pl & \text{ student many/some/few be.pl} \\
\text{‘The guests were many/some/few students.’} 
\end{align*}

(69) \[ \ast \text{Gonbidatu-ak [ikasle guzti-ak/den-ak/bakoitz-a] ziren/zen.} \]  
\begin{align*}
\text{Guest-D.pl} & \text{ [student all-D.pl/all-D.pl/each-D.sg] be.pl/be.sg} \\
\ast \text{‘The guests were all of the students/all of the students/each student.’} 
\end{align*}

The combination of a weak Q like \textit{asko} ‘many’ with an NP predicate like \textit{ikasle} ‘student’ (which following standard assumptions is also of type \( et \)) will be carried out through intersection (cf. Landman 2002), yielding an element of type \( et \) as a result that allows them to appear in predicative positions. Since the claims for Greek and Basque have been made in earlier works, we will not repeat the discussion here, but simply adopt the suggested syntax where weak Qs are considered (cardinality) predicates. They can thus be generated in either of the following:

(70) \[ \begin{array}{c}
\text{QP} \\
\text{Q} \\
\text{NumP} \\
\text{∅: } \exists \{ \text{quantity denoting weak Q + NP} \} \\
\text{Num} \\
\text{NP}
\end{array} \]  
(Basque; Etxeberria 2005, 2008, 2009)

(71) \[ \begin{array}{c}
\text{QP} \\
\text{Q} \\
\text{NP} \\
\text{∅: } \exists \{ \text{quantity denoting weak Q + NP} \}
\end{array} \]  
(Greek; Giannakidou and Merchant 1997)

In both cases, the weak Q is not generated as a Q (i.e. it is not in the Q position). This position is rather occupied by an existential \( \exists \) which gives default existential force to the weak QP. (Or, it can be occupied by the definite article, as in the case of \textit{the three students} in which case we have the denotation of a DP, as we said in 3.2). From this, it follows that weak Qs cannot undergo \( D_{DR} \), in agreement with the well known fact in the literature that weak Qs are ambiguous between non-presuppositional cardinal readings, and presuppositional—thus, we take it, domain restricted—proportional readings with the partitive (von Fintel 1998, Partee 1988). In other words, the reason why weak Qs cannot be contextually restricted via \( D_{DR} \) is because an \( et \) element is not of the appropriate input for \( D_{DR} \) in Greek and Basque; in this case D can only function as a regular iota. \( D_{DR} \) emerges only when D modifies Q in these languages, it can thus be possible only with a Q type \textit{ett}.

In SS, on the other hand, where \( D_{DR} \) can indeed apply to NP, weak Qs can indeed be \( D_{DR} \)-ed directly in the NP argument.
Matthewson (1998: 284) states that: “weak quantifiers receive only a proportional, never a cardinal, reading in SS”, and this is captured neatly in our analysis.

In conclusion, weak Qs cannot be modified via D_{DR} because they are not strictly speaking Qs, but predicates; and in the languages we are studying (Basque, Greek) D_{DR} does not apply directly to a predicate.

5 Indefinite determiners: domain restriction and specificity

So far, we put forth a theory where contextual domain restriction is encoded syntactically in the use of D, which is the element responsible for supplying C. An implication of our analysis was that weak Qs cannot be modified by D_{DR} because these are not Qs but predicates (or modifiers themselves as proposed in Ionin and Matushansky 2006). In our system then, we predict that only a strong Q can be modified by D_{DR}, because only a strong Q is of the appropriate syntactic type (a true Q) to be modified by such a function.

In recent work, Martí (2008, 2009) suggests that it is not inconceivable for weak Qs to be contextually restricted, and that Spanish plural *algunos* ‘some’ is one such case. *Algunos* is claimed to be domain restricted via *alg*- which is given an analysis where *alg*- introduces a contextual C variable, that the bare *unos* ‘some’ lacks. In this final section we want to consider Martí’s hypothesis about *algunos* in the larger question of whether it is possible to find a weak Q that will be linked to a discourse salient set via a presupposition, like our D_{DR}-ed Q (i.e. *o kathe*, *bakoitz-a*, *guzti-a(k)*, etc.) and *each*. The answer, we argue, will have to be negative, and this follows from what we know about indefinites, i.e. that they assert rather than presuppose existence, and that they carry novel indices. These two properties are in conflict with D_{DR} which creates a Q whose domain is (presupposed to be) familiar.

Empirically, we point out some important differences between our contextually restricted Q/definites and *algunos*; we also uncover non-restricted uses of *alg*- indefinites that have been pointed out in the previous literature (Gutiérrez-Rexach 2001, Alonso-Ovalle and Menéndez-Benito 2003, 2007, Etxeberria 2009), e.g. in the singular, and in the existential structure with singular and plural. Such unrestricted uses suggest that *algunos* has pure cardinal readings, it can thus not be inherently domain restricted. In our analysis, *algunos* creates a specific indefinite that is subject to a felicity condition (*not* the presupposition of existence that D_{DR}-ed Qs carry), anchored to the speaker, like all specific indefinites under the epistemic view of specificity that we adopt.

5.1 Martí’s analysis of *algunos*

Consider the following scenario (from Martí 2009 (2)):
(73)  {Teachers A and B are on an excursion with a group of children, of whom they are in charge. Teacher A comes to teacher B running:}

a. Teacher A: ¿Te has enterado? Algunos niños se han perdido en el bosque.

b. Teacher A: ¿Te has enterado? Unos niños se han perdido en el bosque.

‘Have you heard? Unos/algunos children got lost in the forest.’

The *algunos* version is not compatible with the continuation below:

(74)  {After a few hours, teachers A and B discover that none of the children from their group had actually gotten lost; it was children from a neighboring village:}

Teacher A: We are so fortunate that what I said turned out to be false – we don’t have to give bad news to any parent!

Martí claims that in choosing to use *algunos*, the speaker intends to refer to a set of children that are salient in the previous discourse. *Unos*, on the other hand, is claimed to be more discourse neutral: the continuation above —which would dissociate the set of children who got lost from the set of children that the teachers are in charge of— is possible. Another example is given in the following (again, from Martí 2009):

(75)  Question asked by reader in on-line interview:

In which areas of the world is the AIDS problem the worst?

a. Answer by doctor: In Subsaharan Africa, undoubtedly...

   Hay *algunos* países que podrían desaparecer si no se les presta ayuda para combatir la enfermedad.

b. Answer by doctor: In Subsaharan Africa, undoubtedly...

   #Hay *unos* países que podrían desaparecer si no se les presta ayuda para combatir la enfermedad.

   ‘There are *unos/algunos* countries that could disappear if they don’t receive help to fight the disease’

Example (75) is based on an on-line interview in the newspaper *El País*. Martí’s commentary is as follows. “In this interview, a doctor who specializes in AIDS is asked questions by readers. (75a) is adapted from an answer provided by this doctor; by *algunos países*, the doctor means ‘some countries in Subsaharan Africa’. In (75b), we try to replace *algunos* with *unos*, but that produces infelicity. The doctor seems to be talking about countries other than Subsaharan African countries. But that doesn’t address the question asked by the reader: where are these countries? Again, whereas *algunos* seems to have no problem establishing a relationship with a previously introduced entity, such as Subsaharan African countries, *unos* seems incapable of doing so and, when doing so would be relevant and called for, *unos* gives rise to infelicity.” (Martí 2009: 111)
The examples make clear two things. First, that \textit{algunos} draws values, in these cases, from some set under discussion; second, and we believe equally interestingly, \textit{unos} remains novel in this context, as expected by an indefinite—perhaps radically discourse novel, since \textit{unos} is generally incompatible with the partitive: *\textit{unos de los NP} in Modern Spanish. The link to a set under discussion of \textit{algunos} cannot be case of familiarity in the sense of Heim (1982) since \textit{unos} is an indefinite, and we expect it to carry a novel rather than a familiar index.

Martí opts for the following analysis (Martí 2009: 120: (26), (27), (28)):

\begin{align}
(76) \quad [\texttt{unos}] &= \lambda P_{\text{et}}. \lambda Q_{\text{et}}. \exists x \left[ \text{Mol}(x) \land P(x) \land Q(x) \right] \\
& \quad \text{\textquoteleft Mol\textquoteleft stands for \textquoteleft molecular/plural individual\textquoteright)}
\end{align}

\begin{align}
(77) \quad [\texttt{alg-}] &= \lambda R_{\text{et},<\text{et}>}. \lambda P_{\text{et}}. \lambda Q_{\text{et}}. R(P \cap C)(Q) \\
& \quad \text{Implicature: } R(P \cap C)(\{x: Q(x) = 0\})
\end{align}

\begin{align}
(78) \quad [\texttt{algunos}] &= \lambda P_{\text{et}}. \lambda Q_{\text{et}}. [\texttt{unos}](P)(Q) \\
& \quad \text{Implicature: } [[\texttt{unos}]](P)(\{x: Q(x) = 0\}) \\
& \quad = \lambda P_{\text{et}}. \lambda Q_{\text{et}}. \exists x \left[ \text{Mol}(x) \land P(x) \land Q(x) \right] \\
& \quad \text{Implicature: } \exists x \left[ \text{Mol}(x) \land P(x) \land Q(x) = 0 \right]
\end{align}

According to Martí, this all brings a partitivity \textit{implicature}, i.e. that \textit{alg}+X needs to be linked to a discourse set \(C\). The idea is cast within an indefiniteness hierarchy (Martí 2008), and context dependency occupies the highest level. Crucially, the context dependence derived by these formulas is an implicature, and not the presupposition of saliency that we get with D\textsubscript{DR}. So, for Martí too, the kind of context sensitivity produced by an indefinite cannot be identical to the one produced under the regular condition of familiarity, which would predict \textit{algunos} to be presuppositional, and therefore \textit{always} proportional. According to Martí, \textit{algunos}, is not presuppositional: “Thus, both \textit{unos} and \textit{algunos} induce the \textbf{entailment} [emphasis ours] that the set denoted by the head noun is non-empty.” (Martí 2009: 115). This is in stark contrast with D\textsubscript{DR}-ed Qs where non-emptiness of the domain is a presupposition rather than mere entailment.

Martí is wise in choosing a weaker form of context dependence for \textit{alg}-indefinites, but as we show next, such indefinites also show purely cardinal uses that do not suggest any context sensitivity at all.

### 5.2 \textit{Alg}-indefinites have unrestricted uses

One thing to note first is that the alleged effect of context sensitivity of \textit{alg}- is only observed with \textit{unos}, and not with other weak Qs: *\textit{algdos} \textquoteleft alg-two\textquoteright, *\textit{algmuchos} \textquoteleft alg-many\textquoteright, etc. The lexical meaning assigned to \textit{alg}- predicts more general application—like our D\textsubscript{DR}—and, as far as we understand it, the semantics for \textit{alg}- is NOT a lexical rule specific to \textit{algunos}, or a meaning postulate that applies only to \textit{algunos}. The lack of systematicity is unexpected if \textit{alg}- works compositionally—recall that the D\textsubscript{DR} is a generalized strategy for domain restriction as we took pains to show. The limitation of \textit{alg-} to \textit{unos} suggests that the effect is more “lexical”: it concerns \textit{unos} and the way it contrasts with \textit{algunos}—and more broadly the way the indefinite
meaning SOME interacts with the indefinite article—rather than being an instance of a more systematic strategy of (albeit weakly) contextually restricting an indefinite.\footnote{Martí could invoke some kind of morphological blocking to rule out \textit{alg-} from combining with other indefinites. However, such a composition external stance would be a retreat from the idea that the semantics alone can explain the distribution of \textit{alg—}a goal that we, and she, believe should not be given up unless there is real evidence for needing more (an option that we are open to, but have not seen to be the case with \textit{algunos}).}

We now show that there are quite routine uses of the \textit{alg}-indefinite that do not exhibit context sensitivity.

5.2.1 Existential sentences

Gutiérrez-Rexach (2001) observes that \textit{algunos} can be used in existential sentences, an observation that Martí agrees with. Here is an example from Gutiérrez-Rexach (2001: 140):

(79) Context: Upon arriving at the school and seeing several groups of boys fighting, the principal, tired and sick of seeing the same scene every day, mumbled to himself: “What a way to begin the day!” In a panic, he realised that:

\begin{itemize}
\item a. ...había \textit{algunos} chavales demasiado cerca de la carretera.
\item b. ...había \textit{unos} chavales demasiado cerca de la carretera.
\end{itemize}

‘there were \textit{algunos/unos} boys too close to the road’

In (79a), the boys who are too close to the road can be some of those who are fighting, but they don’t have to be. This challenges the generalization that \textit{algunos} must refer back to the discourse salient set of children that are fighting. \textit{Algunos} and \textit{unos} are equivalent in this context.

Regarding existential sentences, it is important to note that it is generally assumed that \textit{some}-indefinites are fine in them:

(80) There are some boys in the elevator.

However, partitive structures are ruled out in existential contexts, and so are our presuppositional Qs and definites (for recent discussions on this specific issue, see Matthewson 2009, McNally 2009; also de Hoop 1995 for Dutch):

(81) \begin{itemize}
\item a. # There are some of the boys in the elevator.
\item c. # There are three/several/few of the boys in the elevator.
\item c. # There is each boy in the elevator.
\item d. # There are the boys in the elevator.
\end{itemize}

Partitives and D$_{DR}$-ed Qs are all contextually restricted via D, and ruled out; definites are naturally out too. \textit{Algunos}, by contrast, is fine. This fact in itself sets \textit{algunos} apart from the members of the contextually restricted class, and it should make us reluctant to treat it on a par.

We will not ponder on what exactly it is that grants admission to the existential structure (see McNally’s work for extensive discussion). What is crucial for our purposes is that the main function of the \textit{there}-sentence is to assert existence. This is what weak Qs and indefinites typically do. Definites and D$_{DR}$-ed Qs, on the other hand, presuppose existence. As such, their
use is bound to be not just redundant, but downright in conflict with the main purpose of the existential sentence. For this reason, presuppositional Qs and definites will be unusable in the existential context (see also Zucchi 1995). Algunos, obviously, is fine, and this suggests to us that algunos merely asserts the existence of an entity, as indefinites are expected to do.

5.2.2 Algunos can be used generically

Martí mentions that algunos also receives generic uses:

(82) Algunos unicornios tienen cuernos de apariencia metálica. (Ex. from Martí)
   ‘Algunos unicorns have horns of metallic appearance’

Recall now that our D_{DR}-ed Qs o kathe, bakoitz, and each cannot be used generically:

(83) a. # O kathe monokeros exi ena kerato.
    b. # Each unicorn has one horn.
    c. # Adarbakar bakoitz-a-k adar bat dauka.14

Kind denoting subjects are the opposite of domain restricted, since kind reference is not restricted by, or in, the context. In the case of algunos, we seem to have quantification over kinds, as in Some (kinds of) dinosaurs are carnivores, and it is not obvious to us how this generic use can be made compatible with context dependent analysis. Our conclusion (in the discussion of guzti-ak in 3.3.), which can indeed appear in the plural with multiple kind reference like algunos, was that these were not cases of D functioning as a domain restrictor.

Martí (p.c) suggests that perhaps in generic contexts, for whatever reason, the domain of Qs stays big, or widens. Yet this contradicts the very idea of contextual restriction to begin with; and it relaxes it in a way that becomes trivial. Importantly, we did not find this widening effect with our strong D_{DR}-ed Qs, which seem to be more “rigidly” associated with narrow domains, as expected. So, if we do admit that for some reason the domain created with alg- can widen, we posit a considerable difference on how alg- and D_{DR} impact the domain. As an alternative hypothesis, Martí further suggests, in order to account for the context-independent uses of algunos, we could claim that sometimes, the domain variable of algunos does not get restricted, even though it is always there. This again considerably weakens the idea of inherent domain restriction—and leads essentially to an ambiguity analysis of algunos along the traditional lines (sometimes cardinal, sometime proportional).

5.2.3 Singular versus plural

Etxeberria (2009) argues that in opposition to the properties shown by the plural indefinite algunos, the Spanish singular indefinite algún ‘a’ appears to be contextually unrestricted, as the example (84) shows. Example (84) is adopted from Martí (2009); only the plural forms algunos and unos that appear in her examples are changed for the singulars algún and un.

14 -a and -ak are respectively the singular and the plural forms of the Basque definite determiner. Bakoitz can only combine with the singular form of the D; the -k in (83) is the ergative marker. See Etxeberria (2005, 2008).
Upon arriving at the school and seeing several groups of boys fighting, the principal, tired and sick of seeing the same scene every day, mumbled to himself: “What a way to begin the day!” In a panic, he realised that…

a. … algún chaval estaba demasiado cerca de la carretera
b. … un chaval estaba demasiado cerca de la carretera
‘algún/un boy was too close to the road’

These cases are unrestricted and neither algún chaval nor un chaval make necessarily reference to one of the boys who were fighting and that the principle saw; in order for them to make reference to that set of boys, we would use the partitive—in both cases—, i.e. alguno/un de los chavales ‘some of the boys’. Thus, singular indefinite algún does not appear to be restricted.

More evidence against the idea that alg- is a contextual domain restrictor comes from Alonso-Ovalle & Menéndez-Benito (2003, 2007) where singular algún is argued to induce a “free choice epistemic” effect. Consider the following example (from Alonso-Ovalle & Menéndez-Benito (2003: (5)).

(85) María está saliendo con algún chico del departamento de lingüística.
Mary is going out with some guy of the department of Linguistics

**Scenario 1:** There are five male linguists in the department: John, Bill, Charles, Richard and Mike. I have heard, from a trustworthy source, that María is dating one of them. But that is all I know; I have no idea which of them she is dating.

**Scenario 2:** There are five male linguists in the department: John, Bill, Charles, Richard and Mike. I have heard, from a trustworthy source, that María is dating a linguist in the department. I know she is not dating Mike, I know she is not dating Richard, and I know she is not dating Charles. So, according to what I know, María can be dating John or she can be dating Bill.

The sentence in (85) can only felicitously describe Scenario 1. Thus, Spanish algún signals that the speaker is unable to provide any further information about who or what satisfies the existential claim she is making and indicates that, as far as the speaker knows, any individual in the relevant domain may be the one satisfying the existential claim. Then, it is argued, the singular algún widens the domain. We believe that the epistemic effect is real, but it is not widening in the sense of Kadmon and Landman (1993), or as the term is generally understood when applied to FCIs. Rather, the effect seems akin to *some or other:*

(86) Mary is dating some guy or other in the dept. of Linguistics. (But I have no idea who that is, and perhaps I don’t care).

*Some or other* indefinites have been characterized as *epistemically non specific* (Giannakidou and Cheng 2006, Giannakidou 2009; borrowing the term from Haspelmath 1997). In this use, there is no intention on the part of speaker or hearer to link the indefinite to a particular individual or set. Hence we share the intuition of Alonso-Ovalle & Menéndez-Benito: these are not specific uses of algún. Crucially, such uses are impossible with our D^DR-ed Qs, but are generally available with *some* indefinites crosslinguistically:
To conclude, then, we saw in this subsection that *alg*-indefinites behave differently from contextually restricted Qs: *alg*-indefinites are not presuppositional, and they seem to also have the expected uses as novel indefinites. The singular/plural distinction is particularly telling, because it shows that *alg*-alone cannot be responsible for context sensitivity when that happens. In the light of these results, we have no choice but reject the idea that *alg*-indefinites are contextually restricted as a class, and look for an alternative.

### 5.3 *Algunos* as a specific indefinite

The amount of work that has been done on indefinites and specificity in the past 25 years is enormous, and we cannot possibly do justice to it here (see, very selectively, Fodor and Sag 1981, and more recently Reinhart 1997, Winter 1997, Kratzer 1998, Farkas 2002, Schwarzchild 2002, Endriss 2006, Endriss et al. 2007, Ionin 2006). Ever since the seminal work of Heim (1982), and Kamp (1981), there seems to be a consensus, which we have been assuming throughout this paper, that indefinites assert existence whereas definites presuppose it. In Heim’s *file change semantics*, as we have noted, indefinites carry novel indices and introduce discourse referents; but definites carry familiar indices and refer to objects previously introduced in the discourse. From this perspective, as we have already alluded to, contextual domain restriction—which relies on a presupposition of a contextually salient domain—is *not* a property that indefinites and existential (weak) Qs as a class are expected to have.

At the same time, however, indefinites can be used with what can be understood as “targeted” reference by the speaker, and in this case, we talk about specificity. In this use, specific indefinites appear to take wide scope with respect to intensional operators, negation, and other Qs, and often they contain so called specificity markers, e.g. the adjectives *particular*, *specific*, and *this* (Ionin 2006 and literature cited there):

(90) a. Mary wants to marry a *certain* philosopher. (#Any philosopher will do!)
    b. Mary wants to marry this *great* guy! (#Any great guy will do!)
(91) Mary wants to marry the man she met yesterday. #Any man will do!

---

15 Note that if we don’t use the genitive case marker on the nominal expression (as in (i)) the interpretation we get is ambiguous between a specific and a non-specific one. The use of the genitive makes the indefinite DP be interpreted always non-specifically, just like some or other (cf. Etxeberria 2008).

(i) Miren *mutil bat*-ekin geratu da.
    Mary boy one-with date has
We will adopt here without argument an epistemic approach to specificity (Groenendijk and Stokhof 1981, Farkas 2002, Ionin 2006, Schwartzchild 1999), although such an approach is by no means the only approach to specificity—e.g. see the choice function analysis analyses of Matthewson (1999), and originally Reinhart (1997) and Winter (1997). Two facts are important here: that specificity marking (use of a particular word, or intonation, as Giannakidou 2009 argues for emphatic some) forces targeted reference with the indefinite: the speaker has a particular individual in mind, evidenced by the incompatibility of the continuation with any. Second, in specific use, the indefinite refers almost rigidly in the speaker’s mind to a particular individual, but the hearer doesn’t need to share the specific knowledge. Compare with the non-specific use of an indefinite without specificity marking. In this case, the continuation with any is possible, which suggests that there is no particular individual targeted by the speaker:

(92) Mary wants to marry a philosopher. Any philosopher will do.  

These and similar facts became well known in many recent discussions that we cannot repeat here. In the epistemic approach to specificity, specificity has to do the speaker having a particular individual or set of individuals in mind (reflected already in the notion of speaker identifiability; Groenendijk and Stokhof 1981), and “targeted speaker reference” that we employ here. Definiteness, on the other hand, and DDR have to do with speaker and hearer reference, or common ground (determined, in Farkas 2002) reference. In a recent paper, Ionin (2006) presents a compelling case that targeted speaker reference must be captured as a felicity condition on the use of the specific indefinite, and we will embed our discussion of algunos within this framework. The felicity condition takes the form below, where sp stands for ‘speaker’:

(93) A sentence of the form [sp α] ζ expresses a proposition only in those utterance contexts c where the following felicity condition is fulfilled: the speaker of c intends to refer to exactly one individual x_c in c, and there exists a property ϕ which the speaker considers noteworthy in c, and x_c is both α and ϕ in c. When this condition is fulfilled [sp α] ζ expresses that proposition which is true at an index i if x_c is ζ at i and false otherwise.

The crucial piece in Ionin is that the felicity condition is different from a presupposition, and has to do only with speaker knowledge. Thus, if a speaker decides to use a specificity marker, the speaker will only consider his/her own beliefs, and not the state of the hearer’s knowledge. This is clearly different from the use we make of definites, where both the speaker and the hearer’s views are taken into account.

Given that algunos is an indefinite, and that domain restriction is a presupposition, it seems more profitable to us to treat algunos NP as a specific indefinite with a felicity condition. This means that algunos is being exploited as a specificity marker, along the lines of specific, particular, and this. Following Ionin’s format, we propose the following conditions for algunos:

(94) [[algunos NP VP]] is defined in a context c only if the felicity condition (i) is fulfilled:

16 Another useful test for distinguishing specific from non-specific use is the choice of mood in a relative clause that modifies the indefinite, indicative vs. subjunctive. This test of course can only be applied to languages that manifest mood choice—e.g. Romance and Greek (see Farkas 1981, Giannakidou 1998).
i. \([\text{algunos} \ NP]\) is intended by the speaker \(s_c\) in a context \(c\) to refer to some non-singleton set \(P_c\) of individuals in \(c\).

ii. If this condition is met, \([\text{algunos} \ NP \ VP]\) expresses a proposition \(\exists x \ [P(x) \land NP(x) \land VP(x)]\) that is true if the assignment function \(g\) assigns at least one value for \(x\) that maps the sentence onto TRUE, and false otherwise.

In this account, we treat \(\text{algunos}\) as a whole, since both \(\text{alg}\)- and the plural force specificity. (As noted earlier, the singular \(\text{algún}\) allows both cardinal and specific readings.). This fact did not follow from Martí’s analysis of \(\text{alg-}\), but it follows form ours because we posit that only the plural is a specificity marker. Crucially, this is not a stipulation: our felicity condition relies on a salient non-singleton set— which captures anti-uniqueness, as required by an indefinite. We believe that anti-uniqueness is very prominent with some indefinites, and perhaps less with mere indefinite NPs preceded by the indefinite articles (see Giannakidou, Papadopoulou and Stavrou in prep. for some experimental evidence for this from Greek). Singular \(\text{algún}\), simply, cannot be expected to satisfy the condition (i) since the set \(P\) will be bound to be a singleton.

We have proposed, then, an analysis of plural \(\text{algunos}\) as belonging to the class of specific indefinites, and added \(\text{algunos}\) to the repertory of specificity markers that we find in various languages. Since \(\text{algunos} \ NP\) will contain a specificity marker, a speaker will choose to use it only if s/he has a specific set of individuals in mind. The choice between \(\text{algunos}\) and \(\text{unos}\) is thus speaker regulated, and the specificity analysis of \(\text{algunos}\) can help us understand why \(\text{unos}\) is “doomed” to the non-specific realm.

One final question: why doesn’t the specificity distinction surface in the singular between \(\text{un}\) and \(\text{algún}\)? (Recall that \(\text{algún}\) is much freer to pick non-specific reference). We cannot offer a detailed explanation since we have reached the end of the paper, but tentatively, we would like to suggest that one factor that we believe is relevant is the fact that Spanish has the quite rare property to offer a choice in the plural between a plural indefinite article—\(\text{unos}\)— and a some indefinite. Most of the languages we know do not have this dual option. If \(\text{unos}\), plausibly, is the plural of \(\text{a}\) and therefore the unmarked way to use express novelty (cf. Leonetti 1999, Gutiérrez-Rexach 2001, Martí 2009), then \(\text{algunos}\) can be thought of as the marked option, explored by a speaker only when s/he wants to do something more that merely introduce a novel discourse referent.

6. Conclusion

The main lessons to be drawn from this work are the following. First, the need to contextually restrict the domain of Qs is syntactically more real in language than one would have expected had the phenomenon been only pragmatic. Second, D elements, and the definite D in particular, are systematically used in a number of languages—we have illustrated here with Basque, Greek, a little bit of Hungarian, and Salish— as domain restrictors. In this use, D is a modifier supplying a context set C, and can systematically apply to the Q itself. In Greek and Basque, we argued, D\(_{\text{DR}}\) arises when D is found in a syntactic position where it is forced to take Q as its argument, and can thus not function as a regular iota. D\(_{\text{DR}}\) produces quantificational determiners that can only be used to quantify over salient non-empty domains. We suggested that English \(\text{each}\) can have a similar analysis as \([\text{D every}]\), and hypothesized that our composition of D\(_{\text{DR}}\) plus strong Q can be thought of as the underlying structure in the whole class of presuppositional Qs. Further examination of this point is clearly needed to determine if this is indeed the case.
Another important point that we made, and we need to emphasize this because it can easily be overlooked, is that D_{DR} need not be performed by a morphologically definite D. Greek and Basque (and Hungarian) do exhibit a morphological distinction of (in)definiteness, and D_{DR} is expressed by a definite D. Thus, we do make the prediction that if a language encodes familiarity and novelty in the D system, it will be only the familiar D that will qualify for D_{DR}. On the other hand, the absence of a morphological contrast between definite and indefinite D, as in Salish, renders the single available D vehicle of both reference and salience, thereby also enabling domain restriction for this unspecified D (for more see Appendix). If a language lacks determiners altogether, we expect that the referential, familiar, and D_{DR} functions will again be performed by the same (albeit morphologically non-definite) item, and the data reported in Cheng (2009) suggest that the Chinese dou works exactly this way.

Our final conclusion is that caution is advised in navigating the subtle, yet real, difference between specificity and contextual domain restriction. The former, we argued following Ionin and others, concerns speaker reference only, whereas the latter draws from familiar, i.e. common ground, speaker and hearer reference. From this perspective, contextual domain restriction—which relies on a presupposition of a contextually salient domain—is not a property that indefinites and existential (weak) Qs as a class are expected to have, since these, even in the specific use, simply assert existence. It is then no surprise that the domain restricting function of D applies only to strong Qs in Greek and Basque.

Although we have undoubtedly not answered all the questions that arise from the link between familiarity, determinerhood and context sensitivity that we argued for, we do hope that our analysis offers at least a few solid and testable ideas that will serve as a springboard for future research in this area. And, although we may have taken issue with some of the specifics of earlier accounts, our analysis shares with these a common and powerful thread: it emphasizes that Q and D are the places where conditions on the use of variables must be stated (resonating with, among others, Farkas 2002, Giannakidou 2004, Matthewson 1998, 2001, Gillon 2006, 2009, Martí 2003, 2008, 2009). This program will have much to learn from crosslinguistic semantic work, and is bound to enrich standard GQ theory with the subtlety and refinement it needs in order to capture the richness observed in quantificational structures across languages.

Acknowledgements. Thanks to individuals will follow. We are also grateful to the various audiences where this material was presented: the Context-Dependence, Perspective and Relativity in Language and Thought in Paris (2007, Ecole Normale Superieure), the Conference on Nominal and Verbal Plurality 2008 in Paris, the Chicago Workshop on Basque, the 19th Colloquium in Generative Grammar in Vitoria, the LyCC Colloquium Series in Madrid (CCHS, CSIC), and the LUSH audience at the University of Leiden. The first author’s research was supported by the following projects: the Basque Government GIC07/144-IT-210-07, and Hm-2008-1-10 projects; the CNRS Fédération Typologie et Universaux Linguistiques FR2559 project; the ANR TSABL (ANR-07-CORP-033) project; and the MCI FFI2008-00240 project.

References:
--- (in prep.). Nominal expressions in Basque. Ms. IKER-CNRS.


--- (1998). The semantics and pragmatics of quantifier domains. Ms. MIT.


Appendix: DPs in St’át’imcets and the ingredients of semantic definiteness

In the analysis we propose of D as a domain restrictor, it is important to distinguish between morphological and semantic definiteness. We are not saying that only a definite D can function as D_{DR}, but we do tie the ability of a D to make reference to a context set to the familiarity property of the definite D (Heim 1982). In the Appendix, we consider what happens in a language like Salish, where there is no morphological distinction between definite and indefinite D. We think that this discussion will also help embed the D_{DR} function to what we commonly understand as the properties of semantic definiteness.

Matthewson (1998) argues that the Salish D is radically different from English *the*. Two of the distinctive properties of Salish DPs are said to be the following in Matthewson (1998: 26):

(1) a. Salish determiners do not encode definiteness.
   b. Salish determiners do not encode specificity.

Matthewson, following Diesing (1992), collapses specificity and definiteness, and claims that they are both presuppositional, a claim that is highly controversial (see Ionin 2006 for extended arguments that presupposituality is common-ground based but specificity is not). Matthewson insists on a choice function analysis of Salish DPs, and claims that:

“Salish determiners not only do not encode definiteness, but also cannot be analyzed as homophonous between definites and indefinites. This is because the distinctions which are encoded in Salish cross-cut the definite/indefinite distinction. The semantic ‘pie’ is cut up differently in Salish from in English, in ways to be made precise below.” (Matthewson 1998: 27).

It is not our purpose here to embark on a detailed refutation of these claims. However, we will argue that it is not justified to claim that the Salish D does not encode semantic definiteness.

In English, Greek, Spanish, and Basque—the languages of primary focus in this paper—there is a morphological distinction between a definite and an indefinite article; in Salish there isn’t. The definite article is standardly taken to be the D element, and the constituent is a DP. D also has syntactic motivation (Longobardi 1994, Alexiadou et al. 2008) as we mentioned earlier: it takes an NP and gives back a nominal that can be used as an argument of the basic semantic type: e.

(2) \[ \text{DP} \ e \]

\[ \text{D}_{et,e} \quad \text{NP}_{et} \]

The indefinite article, on the other hand, is a weak quantifier and typically not treated as a D head. Rather, with weak quantificational expressions generally, the structure is taken to contain an empty D head (see Alexiadou, Haegeman and Stavrou 2008, Szabolcsi 2009 for overview and literature), and the weak quantifier resides in the NP (as an adjective or modifier; see Partee 1989, Link 1984, and more recently Ionin and Matushansky 2006, more references in §4):
At the D node a default existential ∃ is introduced (cf. Longobardi 1994 among others), and the DP gets interpreted as a GQ. The important syntactic distinction, then, between the definite and the indefinite article is that while the former is a D head, the latter is not. Rather, the indefinite article is best analyzed syntactically as adjectival in nature (a position that we adopted in the paper), rather than a D or Q. This syntactic distinction correlates with a semantic distinction—while the definite description (DP) is a referential expression, the indefinite QP is a regular existential quantifier—as well as a pragmatic one: while definite descriptions refer to familiar objects in the discourse, indefinite QPs refer to novel ones (Heim 1982).

In a language without morphological definiteness distinction, claiming that the D is, or is not, definite or indefinite does not mean much. Syntactically, to be sure, if i...a is generated as a D head, as Matthewson argues, it aligns typologically with morphological definites to begin with. The appropriate question to ask is: which semantic functions does this morphologically unspecified D performs? As a null hypothesis, morphological underspecification makes it plausible to entertain that D performs both definite and indefinite functions—a hypothesis that Matthewson appears to reject but, as we hope to show here, for no good reason.

We cannot possibly do justice to the vast literature on definiteness, but we will very briefly summarize the three properties that are known to give rise to semantic definiteness: reference, familiarity, and uniqueness (Frege 1892, Russell 1905, Strawson 1950, Heim 1982). In many accounts, the first two are considered to be the core functions of a definite, while uniqueness can be derived from them (see Elbourne 2007 for discussion and references therein).

A definite description is used to refer to a singular or a plural individual (reference), which is already familiar or salient in the context, and which is also (or, ends up being) unique or maximal in the context. We use the iota operator, or max, in the case of the plural to capture the referential property of definites:

\[
\begin{align*}
\text{a} & \quad \text{the boy} = \iota(\lambda x. \text{boy}_C(x)) \\
\text{b} & \quad \text{the boys} = \text{max}(\lambda x. \text{boy}_C(x)) \\
\text{max}(P) & := \text{the unique } x \text{ such that } P(x) = 1 & \forall y[P(y) = 1 \rightarrow y \leq x]
\end{align*}
\]

The use of C indicates that the set is salient in the context. Heim defines the property of familiarity in her Novelty/Familiarity condition.

---

17 Some philosophers do not share this distinct view, and speculate rather that the definite and indefinite article may be a single logical element with different pragmatic application conditions (see especially Szabó 2000, Ludlow and Segal 2003, and for an overview Elbourne 2007). Even in these accounts, however, there is a distinction in terms of presupposition. E.g. Ludlow and Segal (2003) argue that ‘the’ signals that the object under discussion is given in the conversational context, but noun phrases fronted by the determiner ‘a’ signal that they involve new information.
(6) Heim’s Novely/familiarity condition (Heim 1982: 298 onwards):

- Let \( p \) be an atomic formula containing noun phrase \( NP_i \). Then, for all \( <g,w> \in C \):
  
  if \( NP_i \) is definite, \( i \) must be in \( \text{dom}(g) \), and if \( NP_i \) is indefinite, \( i \) must not be in \( \text{dom}(g) \).

Heim envisions the D as an instruction to the hearer to locate the representation for a familiar individual, while an indefinite determiner instructs the hearer to create a representation for a novel individual. Roberts (2003), in the same spirit, requires that a definite be weakly familiar, in that the relevant discourse referent has either been explicitly introduced into the common ground (through the utterance of a previous nominal), or the common ground entails its existence.

The indefinite, on the other hand, introduces a novel discourse referent. Additionally, the indefinite can be thought of as anti-unique, as evidenced by examples below, where the context imposes uniqueness (for more on anti-uniqueness see Heim 1982, and Ionin 2006):

(7) a. *John loves a mother of his.
   b. *A sun is bright.

It is also worth noting that there are cases in which definite descriptions can occur without uniqueness implications. The examples below are from Elbourne (2007:(30)-(33)), but similar facts have been noted for definites in many languages (see also Roberts 2003):

(8) a. Smith went to the theater and then to the pub (British English)
   b. Smith then drove the car into the ditch and had to go to the hospital.

Hence, one may hypothesize that uniqueness is not a primitive of semantic definiteness (see e.g. Roberts 2003). But if reference and familiarity are indeed the fundamental properties of semantic definiteness, then the remarkable ability of Salish DPs to always refer to objects salient in the context of utterance places them in the class of definites, rather than indefinites (whose domain is not given; there are no known cases of indefinites, not even specific ones like a specific boy, that are grounded to the actual context only the way Salish DPs are).

There are, in addition, three facts that support semantic definiteness in the Salish D: first, in a default context, the DP gets definite as well as indefinite readings.

(9) q’wez-ilc [ti smúlhats-a] (Matthewson 2001: (3a))
dance-intr [D.sg woman-D]
‘The/a woman danced.’

So, the Salish DP can be both novel and familiar. Second, in contexts of uniqueness, DP is fine (Matthewson 1998: (17)):

(10) húy’-lhkan ptkwlh, ptákwlh-min lts7a [ti smém’ilhats-a] going.to-1sg.sub tell.story tell.story-appl here D.sg woman(red)-D
wa7 ku7 ilal láti7 [ti smém’ilhats-a] prog quot cry deic D.sg woman(red)-D
‘I’m going to tell a legend, a legend about a girl. The girl was crying there’
Contrast this sentence with the one we saw earlier with the indefinites which were odd, and recall also the cases just mentioned where uniqueness can be suspended even with definites.

Third, SS DPs always take the widest possible scope, as expected typically by presuppositional (i.e. definite) DPs (Matthewson 1999):

\begin{equation}
\text{qus-en-itas} \ [i \ n7\text{án}’\text{was-a} \ \text{smém’l hats}] \quad (\text{Matthewson 1999: (29)})
\end{equation}

\begin{center}
\begin{tabular}{l}
\text{shoot-tr-3pl.erg} \ [D.pl \ \text{two(hum)}-D \ \text{woman}] \\
[i \ \text{kalhéllhs-a} \ \text{mixalh}] \\
[D.pl \ \text{three(anim)}-D \ \text{bear}] \\
‘Two girls shot three bears.’ Equivalent to: The two girls shot the three bears.  \\
√‘A total of two girls shot a total of three bears’  \\
*‘Each of the girls shot three bears, such that the total number of bears shot was six’
\end{tabular}
\end{center}

As far as we can tell from Matthewson’s data, the only way “in which DPs in St’at’imcets do not act like definite DPs is that they do not have an Individual Concept Reading” (Matthewson 1998: 38). This is the only argument that both Demirdache (1997) and Matthewson (1998) advance against semantic definiteness for Salish DPs, but it is not very telling, as we shall see. Consider the Individual Concept reading:

\begin{equation}
\text{sécsec} \ [\text{ti kel7áqsten-s-a} \ \text{ti United.States-a}] \quad (\text{Demirdache 1997: (5)})
\end{equation}

\begin{center}
\begin{tabular}{l}
\text{fool} \ \text{D leader-3sg.poss-D} \ \text{D United.States-D} \\
‘The chief of the United States is a fool.’  \\
This can only mean: Whoever is the chief of the US now is a fool now.
\end{tabular}
\end{center}

This sentence cannot mean “whoever is the president of the US each time”, i.e. it cannot be a function from times to individuals, but it must refer to the actual president of the US at the time of utterance. From this, Matthewson and Demirdache conclude that “Salish DPs do not act like definite DPs”, a conclusion that we believe is premature. Notice, crucially, that the sentence cannot mean “Some president (tied to the context) of the US is powerful” either, which is what one would expect under an indefinite analysis.

Here we will object with Heim (Matthewson 1998: fn.16, p.38) that there is no necessary connection between the Individual Concept Reading and definiteness. Demonstrative nominals, for instance, though definite, do not allow individual concept readings because they can only refer extensionally to objects in the current discourse. The impossibility of an individual concept reading simply shows that the Salish DP is like a demonstrative, i.e. it is always extensional. On the other side of the spectrum, we have definites that are always intensional, namely free choice free relatives and certain free choice items in Chinese; Giannakidou and Cheng (2006). So the inability of Salish DPs to denote individual concepts is compatible with an analysis where Salish D is semantically definite, but it suggests that it is more like a demonstrative in not being able to get interpretation out of the utterance context.

The only other possible objection to the definiteness analysis may be raised by the fact that DPs appear in the Salish equivalent of there-structures. Our objections to this objection is (a) that the DP is allowed there because it is not morphologically definite; and (b) we cannot be sure that there is a real definiteness effect in SS, of the kind we know for languages that mark a morphological definiteness distinction. In support of this doubt, Matthewson herself states that
“the issue of existential sentences is complicated (in SS), since although the ‘wa7’ is used to translate English there-sentences, Davis (1996) argues that ‘wa7’ is not an existential verb, but a locative.” (Matthewson 1998: 280). In any case, she notes that “there is still a contrast between strong and weak quantifiers with respect to sentences introduced by ‘wa7’, which is all that is relevant for current purposes”. Since DPs in Salish assume both definite and indefinite functions, as we hypothesize, it is reasonable to expect them to be OK in the existential structure. But their usage cannot be taken as an argument that they are simply indefinites.

We thus conclude that the Salish D is not morphologically definite, but it does convey the properties associated with semantic definiteness—it is used to refer to salient individuals—while in some contexts it can also refer to novel objects, and indeed non-uniquely; in this usage it behaves like an indefinite or a definite with suspended uniqueness. If the language possesses such a D, where the novelty vs. familiarity distinction is bleached, the morphological definite-indefinite distinction becomes redundant too. Perhaps this D can be thought of as a genuine case where there is one logical element with different pragmatic application conditions depending on the context (as suggested in the literature mentioned in fn. 1 that collapses “a” and “the”, e.g. Ludlow and