Contextual domain restriction across languages: 
Definiteness, indefiniteness and the structure of QP

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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<sub>DR</sub>—happens by applying D<sub>DR</sub> to the nominal argument, but D<sub>DR</sub> can also apply to the Q itself, in which case it forms a constituent with it: this, we show, is typically the case in Greek and Basque. In both cases, D<sub>DR</sub> is a type preserving function, i.e. a modifier, and supplies the contextual C variable. Evidence for our analysis is drawn from Greek and Basque primarily—two genetically unrelated languages—and we build on our earlier ideas in Giannakidou (2004), and Etxerberria (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. Apart from Greek and Basque where contextual domain restriction is done via a definite D, data from the Salish languages will be important, where D has been claimed to encode contextual information (Matthewson 1998, 2001; Gillon 2006, 2009) without being morphologically definite. In our consideration of these data, we are led to an examination of what constitutes the semantic ingredients of definiteness, the relation between morphological and semantic definiteness, and how domain restriction becomes part of that. Finally, we show that the Q that is affected by D<sub>DR</sub> is typically a strong one, and we ask the question of 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, Matthewson 1998, 2001, 2008, Giannakidou and Rathert 2009) in the patterns of quantification across languages, suggesting that some fine tuning, or perhaps more radical modifications, of the classical theory are necessary.

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

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

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, presuppose existence 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).

The DP can be understood as a GQ in a system that assigns uniform denotations to all nominal argumental constituents, and indeed the DP patterns with strong quantifiers, as we saw above in the existential structure. Yet intuitively the DP is thought of as a referring expression. This is the typical use of definite descriptions, which since Frege (1892) and Strawson (1950) are taken to presuppose the existence of their referent (unlike in Russell’s 1905 theory of descriptions, which has been criticized by Strawson (1950, 1952), Donnellan (1966), and others; 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, and the relation between morphological and semantic definiteness. 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, however, are functions that need a set domain, and apply to predicates (NPs) thereby forming an argument out of it.

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:

“There are many ordinary sentences beginning with such phrases as 'All ...', 'All the ...', 'No ...', 'None of the ...', 'Some ...', 'Some of the ...', 'At least one ...', 'At least one of the ...' which exhibit, in their standard employment, parallel characteristics to those I have just described in the case of a representative 'All...' sentence. That is to say, the existence of members of the subject-class is to be regarded as presupposed (in the special sense described) by statements made by the use of these sentences; to be regarded as a necessary condition, not of the truth simply, but of the truth or falsity, of such statements.” Strawson (1952:172f).

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.” Reuland and ter Meulen (1987:4).

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, Martí 2003):

(3) Many people came to the party last night; every student got drunk.
Here, the nominal argument of $\forall$, 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. In the complex version $f(x)$, the domain consists of a free function variable and an argumental variable of type $e$ (that can be bound). Relative to a context $c$, $f$ maps $e$ to $et$, i.e. an object to a set, producing intersecting semantics. So, $[\text{student}_f(x)]$ in the example above will be interpreted as:

$$[[\text{student}_f(x)]] = [[\text{student}]] \cap \{x: x \in c(f)(c(i))\} \quad (Sta\text{\textit{ney}} \, 2002: \, (9))$$

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 has been presented that, syntactically, domain restriction can affect the Q itself (Giannakidou 2004, Etxeberria 2005, 2008, 2009), and in this paper we claim that we must allow for both syntactic options in grammar— NP, as well as Q restriction. Semantically, both syntaxes will end up intersecting $C$ with the NP argument, but the difference will be that some Qs will require a $C$-intersected domain, whereas others will not. Contextual domain restriction, we further argue, can be overtly done via a definite determiner $D$, an idea that builds on an earlier proposal by Westerståhl (1984) that the main function of the definite article is not to form a GQ, but 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 that support our claim will come from languages as diverse typologically as Greek, Basque and Salish. The upshot of the discussion will be that (a) we have indeed evidence for the `explicit strategy’ (von Fintel 1998) of domain restriction, and (b) being contextually restricted is often an inherent property of the Q. We will also find a difference between strong Qs, which can indeed be domain restricted by $D$, and weak Qs which cannot, thus supporting the difference mentioned by Reuland and Ter Meulen (1987). We explore the consequences of this interplay, and in doing so we will touch upon the differences between domain restriction, definiteness, indefiniteness, and specificity.

The discussion proceeds as follows.

1. We start in section 2 with the St’át’ímcets Salish (SS) data from Matthewson (1998, 2001) which prompted Giannakidou’s (2004) proposal that $D$ crosslinguistically performs the function of contextually restricting the domain of Qs. In this discussion we also address the relation of morphological versus semantic definiteness.

2. In section 3, we simplify Giannakidou’s analysis that $D$ provides $C$ by defining the domain restricting function of $D$ as a type-preserving (i.e. modifier) function $D_{DR}$. $D_{DR}$ can apply to the NP without altering its type ($et$), as in Salish; but $D_{DR}$ can also affect the Q itself, and we illustrate this using data from Greek, Basque, and SS. Qs that have undergone $D_{DR}$ are shown to be presuppositional and always refer to context salient sets,
properties that will be important later when we consider the possibility of indefinites being domain restricted. We also maintain that $D_{DR}$ can only apply once, which means that we cannot have simultaneously composition of $D$ with the $Q$, and $D$ with the NP when $D$ behaves as $D_{DR}$.

3. In section 4 we discuss how $D_{DR}$ correlates with the weak-strong distinction. It appears that only strong $Q$s 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 $Q$s are not $Q$s (et, ett), but cardinality predicates, i.e. number functions.

4. In section 5, we consider a recent proposal by Martí 2008, 2009 who argues that we must allow at least some indefinite $Q$s to be inherently domain restricted. We point out the 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. We conclude that we are not dealing with domain restriction in these cases, but with specific indefinites that are subject to a speaker identifiability condition. This is a felicity condition (Ionin 2006), not the presupposition of contextual restriction that comes with definiteness and thus $D_{DR}$. The presupposition relies on the common ground, but the felicity condition on just the speaker’s intentions.

Our final conclusions will be that contextual restriction is syntactically more real than one would have expected had the phenomenon been primarily pragmatic; and that domain restriction can affect the $Q$, not just the NP. Hence some $Q$s will come as inherently domain restricted, but others (in particular the weak ones) will not.

2 D, semantic definiteness, and domain restriction

Matthewson (1998, 2001) suggested a syntactic modification to the standard GQ theory, namely that the $Q$ combines with an $e$ (instead of $et$) type argument. Matthewson motivates this revision with data from SS, and makes a number of interesting claims about the quantificational system of SS, which render it very different from the more familiar English-type for which the GQ theory was primarily designed.¹

After reconsidering the special properties of Salish, we discuss the alternative analysis of Giannakidou (2004) which builds on Westerståhl’s (1984) idea that the definite article provides a context set, and argues that the apparent distinctive properties of Salish can be captured if we assume that $D$ in this language can function as a domain restrictor.

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

Matthewson (1998) argues that the Salish $D$ is radically different from English the, and this affects overall the way quantificational structures are set up in this language. The distinctive properties of Salish $D$s are said to be the following in Matthewson (1998: 26):

(6) a. Salish determiners do not encode definiteness.

¹ Gillon 2006 presents more data from the Salish family to support the special character of $D$ in these languages, and the implications this fact has for quantificational structures. We will refer to the language as Salish generally, and focus primarily on Matthewson’s data which we are more familiar with.
b. Salish determiners do not encode specificity.

c. There are no quantificational determiners in Salish (see also Jelinek 1995).

d. Salish determiners encode ‘assertion of existence’.

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. Once we acknowledge that the Salish D can expresses semantic definiteness, a big portion of the “special” properties come into place.

First, let us clarify three points regarding Matthewson’s claims above. One, there is no morphological distinction in Salish between indefinite and definite article. Two, 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 presuppositionality is common-ground based but specificity is not). Third clarification: the claim that there are no quantificational determiners in Salish is not meant as a claim that there are no quantificational expressions in the language—indeed there are (cf. Matthewson 1998, chapters 5 and 6). The claim, rather, is syntactic: SS equivalents to every, few, many, etc. are not generated as D heads. In Matthewson (1998) they are adjoined to DP, but in Matthewson they are recognized as Q heads, and the core quantificational arguments appear with a DP, as follows.

\[
\begin{align*}
(7) & \quad \text{a. Lexlex} \quad [\text{tákem i smelhmúlhats-a}]. \\
& \quad \text{intelligent} \quad [\text{all D.pl woman(pl)}-\text{D}] \\
& \quad \text{‘All of the women are intelligent.’} \\
& \quad \text{b. * Lexlex} \quad [\text{tákem smelhmúlhats}] \\
& \quad \text{intelligent} \quad [\text{all D.pl woman(pl)}] \\
\end{align*}
\]

\[
\begin{align*}
(8) & \quad \text{a. Úm’-en-lhkan} \quad [\text{zi7zeg’ i sk’wemk’úk’wm’it-a}][\text{ku kándi}]. \\
& \quad \text{give-tr-1sg.subj} \quad [\text{each D.pl child(pl)}-\text{D}] \quad [\text{D candy}] \\
& \quad \text{‘I gave each of the children candy.’} \\
& \quad \text{b. * Úm’-en-lhkan} \quad [\text{zi7zeg’ sk’wemk’úk’wm’it}][\text{ku kándi}]. \\
& \quad \text{give-tr-1sg.subj} \quad [\text{each D.pl child(pl)}] \quad [\text{D candy}] \\
\end{align*}
\]

These are the structures of primary interest here. The D consists of “two discontinuous parts, a proclitic (t 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). Given the presence of DP, the quantificational element tákem ‘all’, in the sentences above cannot be the D head. (Notice the absence of D with the object determiner ku which is argued to not assert existence and is thus incompatible with D; cf. Matthewson 1998, 1999).

Matthewson (2001), based on these data, 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 ett. This combination yields a GQ of the usual type ett.

\[
\begin{align*}
(9) & \quad \text{a.} \quad [\text{OP tákem i smelhmúlhats-a}] \\
& \quad [\text{all D.pl woman(pl)}-\text{D}] \\
\end{align*}
\]
The deviation from the standard GQ analysis is that 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:

\[
(10) \quad [[\text{smelhmúlhats (pl.)}]] = [[*]]( [[\text{smúlhats (sg.)}}])
\]

‘women’

\[
(11) \quad [[X \ldots a_k]]^g = \lambda f \in D_{et}(g(k))(f)
\]

(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 members of the extension of \( f \).

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

(Matthewson 2001: (17))

D thus creates an individual out of a set, which could also be understood as an \( \text{iot}a \) function. Matthewson, however, insists on a choice function analysis, 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. Furthermore, DPs in Salish do not display several properties associated with definite DPs, a result which is unexpected if they are ambiguous between definite and indefinite descriptions.” (Matthewson 1998: 27).

Salish DPs are then very special creatures indeed. Demirdache (1997), likewise, makes the claim that SS DPs are always linked to the \text{here and now} of current discourse. They are so deeply tied to the actual context that Demirdache goes as far as to argue that Salish DPs denote \text{stages} of individuals rather that individuals. In the same vein, Matthewson characterizes the D as deictic, and Gillon (2006, 2009) generalizes this claim to other languages of the family.

The exceptional nature of D is such that quantification in SS will come about in two steps: first the domain becomes an individual, and then the Q combines with it. This is proposed as a strong hypothesis in Matthewson (2001), that is, as the strategy employed in all languages. Giannakidou (2004) and Etxeberria (2005) point out empirical problems that we will summarize in §2.3; but before we do that, we want to reflect a little bit more on the nature of Salish D and its relation to definiteness. We believe this is necessary if we want to understand how
morphology relates to the semantic functions a D element can take—one of which, we will argue, is domain restriction.

2.2 The ingredients of semantic definiteness

At the very basic level, we must distinguish between morphological and 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): it takes an NP and gives back a nominal that can be used as an argument of the basic semantic type: e.

(13)  
```
  DP e
```

D et,e 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, 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 details in §4:

(14)  
```
  QP
```

Q NP

∅: ∃ a student/three students

At the D node a default existential ∃ is introduced (Longobardi 1994), 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 will take for granted), rather than a D or Q. This syntactic distinction correlates with a semantic one—while the definite description (DP) is a referential expression, the indefinite QP is a regular existential quantifier—and a pragmatic one: while definite descriptions refer to familiar objects in the discourse, indefinite QPs refer to novel ones (Heim 1982).²

In a language without morphological definiteness distinction, claiming that the D is, or is not, definite or indefinite does not mean much. In this case, the appropriate question to ask is: which semantic functions does the morphologically unspecified D performs? It thus becomes necessary to be clear about what counts as semantic definiteness and indefiniteness. As a null hypothesis, morphological underspecification makes it plausible to entertain that D performs

² 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.
both definite and indefinite functions—a hypothesis that Matthewson appears to reject but, as we hope to show here, for no good reason. Given the syntactic status as a D head, it seems quite plausible to treat the Salish D on a par with a definite head. The characterization “deictic”, we believe, resonates this basically definite semantics associated with the SS D, and the fact that it is so pervasively contextualized.

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 (presupposition of existence), 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. Uniqueness of reference is captured by using the _iota_ operator, or _max_, in the case of the plural:

\[(15)\]

\[
a \quad \text{the boy} = \iota (\lambda x. \text{boy}_C (x))
\]

\[
b \quad \text{the boys} = \max (\lambda x. \text{boy}_C (x))
\]

\[(16)\]

\[
\max(P) := \text{the unique } x \text{ such that } P(x) = 1 \& \forall y [P(y) = 1 \rightarrow y \leq x]
\]

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

\[(17)\]

Heim’s Novelty/familiarity condition (Heim 1982: 298 onwards):

- Indefinite descriptions introduce new entities into the discourse while definite descriptions must denote entities which have previously been introduced in the discourse, i.e. refer to existing entities

- 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. In other words, following Strawson (1950), a definite is presuppositional, but an indefinite is not. 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):

\[(18)\]

\[
a. \text{*John loves a mother of his.}
\]

\[
b. \text{*A sun is bright.}
\]

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:
In this light, the remarkable ability of Salish DPs to always refer to objects salient in the context of utterance is very much reminiscent 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 SS D: first, in a default context, the DP gets definite as well as indefinite readings.

(20) q’wez-ílc [ti smúlhs-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)):

(21) húy’-lhkan ptákwlh, ptákwlh-min lts7a [ti smém’lňhs-a]
going.to-1sg.sub tell.story tell.story-appl here D.sg woman(red)-D
wa7 ku7 ilal láti7 [ti smém’lňhs-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):

(22) qus-en-itas [i n7án’was-a smém’lňhs-a] (Matthewson 1999: (29))
shoot-tr-3pl.erg [D.pl two(hum)-D woman]
[i kalhélhs-a mixálh]
[D.pl three(anim)-D bear]
‘Two girls shot 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’

As far as we can tell from Matthewson’s data, the only way “in which DPs in St’át’l’ímcets 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 Demirdache (1997) and Matthewson (1998) advance against semantic definiteness for SS DPs, but it is not very telling, as we shall see. Consider the Individual Concept reading:

(23) sécsec [ti kel7ágsten-s-a ti United.States-a] (Demirdache 1997: (5))
fool D leader-3sg.poss-D 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.

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 (1998) and Demirdache (1997) 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 of the US is powerful”, which is what one would expect under the indefinite analysis of Matthewson.

We agree 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. Semantic definiteness is salient reference, and this is what the SS does. That it cannot be interpreted as an individual concept simply shows that the Salish DP is like a demonstrative, i.e. always extensional—which we expect from a deictic DP. (On the other side of the spectrum, there are known 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, and cannot get the intensional interpretation which would require it to refer to objects out of the context.3

In sum, having distinguished morphological from semantic definiteness, we 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. At the same time, it can also refer to novel objects, and indeed non-uniquely, and in this usage it behaves like an indefinite. If the language possesses such a D, the morphological definite-indefinite distinction becomes redundant, and perhaps this D can be thought of as a genuine case where there is one logical element with different pragmatic application conditions (as we mentioned earlier that is suggested in some literature that collapses “a” and “the”, e.g. Ludlow and Neale 2003).

We review next empirical problems with Matthewson’s syntactic claim that the domain of quantifiers is an e, a position that is proposed as a universal hypothesis. We summarize here from discussions in Giannakidou (2004), Etxeberria (2005, 2008, 2009).

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3 Another objection against definiteness may be raised by the 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.
2.3 Problems with the assumption that the domain of Q is e

2.3.1 Qs do not take DP arguments

One of the predictions of Matthewson’s proposal (in (9b)) is that Qs should be able to combine with DPs, the typical e-structures, crosslinguistically. However, this prediction is not borne out. We illustrate below with English, Greek, Spanish, but the ill-formedness characterizes many other languages, at least of the Indoeuropean family.

English:
(24)  
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<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>* every the boy</td>
<td>f.</td>
</tr>
<tr>
<td>b.</td>
<td>* most the boys</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>* many the boys</td>
<td>g.</td>
</tr>
<tr>
<td>d.</td>
<td>* three the boys</td>
<td></td>
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Spanish:
(25)  
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<tbody>
<tr>
<td></td>
<td>* cada los chicos</td>
<td>f.</td>
</tr>
<tr>
<td>lit.: ‘each the boys’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>* la majoria los chicos</td>
<td></td>
</tr>
<tr>
<td>lit.: ‘most the boys’</td>
<td>g.</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>* muchos los chicos</td>
<td></td>
</tr>
<tr>
<td>lit.: ‘many the boys’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>* tres los chicos</td>
<td></td>
</tr>
<tr>
<td>lit.: ‘three the boys’</td>
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Greek:
(26)  
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<tbody>
<tr>
<td></td>
<td>* kathe to aghori</td>
<td>d.</td>
</tr>
<tr>
<td>lit.: ‘every the boy’</td>
<td>ola ta aghoria</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>* merika ta aghoria</td>
<td>e.</td>
</tr>
<tr>
<td>lit.: ‘several the boys’</td>
<td>mono ta aghoria</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>* tria ta aghoria</td>
<td></td>
</tr>
<tr>
<td>lit.: ‘three the boys’</td>
<td></td>
<td></td>
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</tbody>
</table>

Note that the grammatical examples in (24-26)—which would fit in the configuration in (9b)—are formed exclusively with all and only, elements that have been argued not to be Qs. All (+DP) has been defended to be a DP modifier (e.g. carrying the presupposition of a good fit cover in Brisson 1998, 2003), thus not a Q; and only has been argued to be a propositional operator (e.g. von Fintel 1997). Observe that many of the ungrammatical constructions in the examples above become automatically grammatical as soon as the partitive of is introduced (e.g. most of the boys, many of the boys, three of the boys).

2.3.2 Partitive ‘of’ has semantic import

If Qs combine directly with elements of type e, of in partitive constructions such as many of the girls must be argued to be semantically vacuous—pace Ladusaw (1982), where of ensures that
the Q receives an *et* type element as input. According to Matthewson (2001) indeed, the partitive preposition *of* is only employed for case reasons.

(27) \{Many/Some\} of the banks are about to file for bankruptcy.

In giving up Ladusaw (1982), we lose the neat semantic explanation for why we need an *of*-element in languages like English, Romance, Greek and the others discussed above. And here are some additional empirical considerations. First, *of* is optional in some constructions, and this should not be so if *of* was there only for case reasons.

(28) a. all (of) the boys  
    b. half (of) the boys  
    c. both (of) the boys

Importantly, *of* is optional with these elements that need not be Qs (at least *all* and *half*), and which are arguable DPs to begin with.

Zulu also provides evidence that it is undesirable to maintain that *of* is there just for case reasons (Adams 2005). In the following grammatical sentences the counterpart of *of* is optional and its presence/absence has semantic import. In case the only role of the partitive preposition *of* is to assign case to the NP, what case would it be assigning in (29b) that need not be assigned in (29a)? Note that the quantifier and the NP are the same in both examples.

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

According to Matthewson (2001), the fact that SS (a language that lacks the partitive *of* element) lacks also overt case marking supports the claim that *of* (e.g. in English, Spanish, etc.) is there only for case. Zulu, just like SS, lacks overt case marking but, pace Matthewson’s assumption, still has a partitive as we see. In other words, if partitive *of* were just inserted for case reasons, we would not expect to see it in a language where case is not marked overtly. Zulu, of course, is not English, but the data from it do show that the correlation between absence of case marking and absence of *of*, which Matthewson uses as a motivation, is not a systematic pattern and must therefore be considered with caution.

### 2.3.3 Q and D can vary their positions

Matthewson’s analysis predicts that DPs are complements to Qs: \( [Q \ [DP]] \). However, languages, including Salish, show evidence for both \( [Q \ [DP]] \) and \( [D \ [Q]] \) constructions.

Although the majority of the SS quantifiers combine with a DP argument (30a-b), Matthewson also presents some data that does not fit her own quantificational structure, see (31a-b)—both with strong quantifiers:
Examples where the Q appears under D can also be found in Greek, as exemplified below (cf. Giannakidou 2004).

(32) ο καθε φιτητης
D.sg each student

In Basque (a head final language) we also find Qs, and not their nominal arguments, to be composed directly with the D:

(33) a. mutil guzti-ak
boy all-D.pl

b. mutil bakoitz-a
boy each-D.sg

2.4 Giannakidou (2004): D can function as a domain restrictor

Giannakidou takes the fact that the Salish DP is grounded to individuals salient in the discourse 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. This is the core difference between English and SS. Matthewson herself also notes the connection between the DP and contextual restriction, but syntactically she takes D to function referentially.

Giannakidou (2004) suggests the following reanalysis. First, D does not function referentially under Q, but merely contributes a context set (in the sense of Westerståhl 1985). This set is indicated below as the contextual variable C, yielding a GQ with a contextually specified set as its generator.

(34) DP $\langle\langle e, t \rangle, t \rangle$
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 operator BE, and go from the GQ of type $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$ to an element of predicative type $\langle e, t \rangle$.\footnote{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.}

\[(35) \quad [\{X... a\}] = \lambda P\lambda Q \{x: C(x)=1 & P(x) =1\} \subseteq \{x: Q(x)=1\} \]

\[(36) \quad [\text{ti smúhats-a}] = \lambda P \{x: C(x)=1 & \text{woman}(x) =1\} \subseteq \{x: P(x)=1\} \quad \text{‘D woman’} \]

\[(37) \quad \text{BE: } \langle \langle e, t \rangle, t \rangle \rightarrow \langle e, t \rangle : \lambda P_{et,t} [\lambda x \{x\in P\}] \]

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:

\[(38) \quad \text{QP } \langle \langle e, t \rangle, t \rangle \quad \text{Q } \langle \langle e, t \rangle, \langle e, t \rangle, t \rangle \quad \text{PP } \langle e, t \rangle \quad \emptyset \text{ BE} \quad \text{DP } \langle \langle e, t \rangle, t \rangle \quad \text{D } \langle \langle e, t \rangle, \langle e, t \rangle, t \rangle \quad \text{NP } \langle e, t \rangle \]

This result, Giannakidou argues, is consistent with the fact that there are no overt partitives in SS.\footnote{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 (of) or a case-marker assumes in other languages. However, this preposition is not required (as of is in English, or de ‘of’ in Spanish). The examples that are cited in the literature as SS partitives (see Matthewson 1998, 2001) resort to the familiar structures ‘D weak NP’. Hence, it seems safe to continue to assume that SS lacks a partitive of element (and a partitive structure) of the English, Romance, Greek, Basque type.} It also renders Salish QPs partitive like structures. Since overt type-shifters block covert shift (Chierchia 1998), the prediction is that languages with overt partitive prepositions -of- or partitive case (English, Greek, Spanish, Basque, etc.) block the covert shift. What we saw in the previous section, namely that in these languages the DP does not combine directly with Q, as well as the contrast between these languages and SS, are thus readily explained.

To sum up, the upshot of Giannakidou’s reanalysis and our discussion here is the following. The Salish structures where a Q embeds a DP, and the properties of the Salish DPs in
general, are valuable not because they force a syntactic characterization of the domain argument of the Q as an individual, but because they show that contextual domain restriction is syntactic in this language. This idea is present also in Matthewson’s work if one reads carefully, and expanded on later in Gillon (2006), and especially in Gillon (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 clearly in the latter direction. We move on now to the novel part of our proposal, which is a simplification of Giannakidou (2004) by defining the domain restricting D as a modifier.

3 New proposal: Domain restricting D as a modifier function

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, we have the following:

\[ [[D_{DR}]] = \lambda P_{et} \lambda x P(x) \cap C(x) \]

The D in SS exhibits typically this case when it domain restricts. This is a type-preserving function, yielding a contextually salient set of individuals characterized by the NP (P) property.\(^6\)

\[ [[i...a]] = \lambda P_{et} \lambda x P(x) \cap C(x) \]

SS D can perform this function and apply directly to the nominal to restrict it; but the English, Greek and Basque D, along with the other European languages we mentioned earlier won’t be able to restrict the NP—hence the need for the partitive preposition to give back the right input (et) for composition with Q.

It is important to note that our definition of the modifier D\(_{DR}\) says essentially that the two important semantic functions of definiteness—familiarity/saliency, 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. (Because familiarity and salience are a presupposition, we cannot have a D element encoding reference to a novel set). We will see in 3.2 how ‘demotion’ of reference comes about in Greek and Basque. 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

\[^6\] A similar result could be achieved by using Chung and Ladusaw’s (2003) Restrict operation:

(i) Contextual Restrict \[([\lambda x NP(x)], C) = \lambda x NP(x) \land C(x) \] (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.
set crosslinguistically, and this, we believe, is a welcome result. The distinctive feature of SS, additionally, is that in this language, the domain argument is always contextualized syntactically.

Crucially, D also appears to be syntactically attached to the Q, as we mentioned earlier and repeat here:

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

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

(43) 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, we argue, and we treat D as a modifier of the Q, yielding a Q with 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.

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

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

(45) a. $[QP o_D + kathe Q [NP fititis_N]]$
    b. o kathe fititis = [kathe (C)] (student) ‘each student’
Etxeberria (2005, 2009) excludes two other possible analyses of the Basque strong quantifiers (i) that strong Q create DPs and not QPs—cf. §3.2; (ii) that Basque strong quantifiers are adjectives. In the next section, we offer more arguments in favor of our chosen structure, by pointing out crucial differences between \[[D-Q] NP\] structures and regular DP. Application of \(D_{DR}\) results in a Q that will come with a requirement that there be a non-empty domain for it to quantify over. This requirement, we will show, is a presupposition. This fact will be important later, when we consider the weak-strong distinction and the question of whether indefinites can also be contextually restricted.

Before we proceed to examine the details of our analysis, we want to stress again that we propose \(D_{DR}\) as an additional function that D can have in a given language. We are not suggesting that \(D_{DR}\) replaces the referential function (or the generic use of D which we consider, following Carlson, a subcase thereof). We are merely suggesting that D can also function as a modifier, and in this case it contributes only familiarity (and not reference) in the form of the context set C.

Crucially, it is not necessary in our analysis that DR be performed by a *morphologically* definite D. In Greek and Basque this happens to be the case because the languages exhibit a morphological distinction of (in)definiteness, and saliency is expressed typically by a definite D. What happens, though, if a language lacks determiners? Are we to say that the syntactic DR function will not be available in that language? The data reported in Cheng (2009) suggest a negative answer: Chinese *dou*, which is not morphologically definite, takes up the \(D_{DR}\) function, according to Cheng; and there is independent evidence that *dou* functions as a definite when used with free choice items (Giannakidou and Cheng 2006). Hence we have neat case of referential and DR functions being performed by the same, morphologically non-definite, item.

And recall Salish, a language that has an article, but no distinction between a definite and an indefinite version. In the absence of a morphological contrast between definiteness and indefiniteness, in our view, it doesn’t really matter whether we label the existing D definite or indefinite, since, strictly speaking, there is no way to know if it is morphologically definite or indefinite. What matters is whether the DP can refer to salient individuals or not, and Salish DPs, we saw, do exactly that. So, in this language, we find the single available D to be the vehicle of both reference and salience, and this enables it to do also domain restriction.
Finally, in Salish, the D can function as $D_{DR}$ with both NP and Q; in Basque and Greek, D can function as $D_{DR}$ only with the Q; in English, the $D_{DR}$ use is not possible for D. One must obviously ask the question of what determines this variation. Space prevents us from addressing this question directly, but we hope that the particular structures that we are suggesting will offer a simple way to at least start thinking about it. In this spirit, and before we go into the semantics of the $D_{DR}$-ed Qs, we examine next the syntactic analysis of D plus Q, and offer arguments for our proposal that the D composes with the Q, thus preserving the QP type of the constituent. Because D and Q share the same position, we will suggest that the referential function is suppressed, and $D_{DR}$ emerges as the only contribution of the D.

3.2. Why $D_{DR}$ does not create a referential expression of type $e$

Consider the structures below where a D appears to precede a numeral or a (weak) quantifier:

(47)   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 arguably referring DPs, as indicated in the brackets, and are interpreted like regular definite descriptions: the denotation of *three students* will be a set of three students (we assume an adjectival analysis of the numeral and weak quantifiers that appear in this position, Partee 1988, and see for specific arguments for Greek Giannakidou and Merchant 1997, Stavrou and Terzi 2009, for Basque Etxeberria 2005, 2009; more discussion in §4), and then the D will close this set under iota, i.e. it will create an individual out of the elements of the set. 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. To us this is obvious, but one may still raise the question: since the $[D [Q NP]]$ is generated by the grammar and yields a referential expression, what are the arguments that our $D_{DR}$-ed structure is not a DP of this kind?

Notice, as an aside, that non-quantity denoting weak quantifiers, are not easily compatible with D in Greek, while in Basque a non-numeral weak Q cannot combine with the D at all:7

7 The Basque counterpart of *gutxi* accepts combining 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.).

(i)   Helmuga gurutzatu zuten txirindulari gutxiak leher eginda 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.’

It does not seem to be a coincidence that e.g. Spanish *los pocos* or English *the few* are completely grammatical when in relative clauses and not that good (or even ungrammatical, just as in Basque) otherwise. At first sight, one could think that the D that appears with *gutxi* in (i) is the D related to the relative clause. However, this does not appear to be correct because if this were the case other noon-numerical weak Qs should also allow D when in relative clauses, but they do not.
(48) a. Greek:
I {poli/lijī/ *kapjii} fitites pu irthan sto parti, ekanan poli fasaria.
[The [many/few/*some students]] that came to the party made a lot of noise.

b. Basque:
Festara etorri ziren ikasle {*asko/*batzuk/*zenbait}-ak zarata haundia egin zuten
to the party come aux student many/some/some-D.pl noise big make aux

Weak Qs as a class, then, do not generally combine with D (more details in §4). To the extent that some combinations are possible (as in Greek with equivalents of few, many which refer to quantities albeit vaguely), non-quantity Qs like some and its equivalents (Basque batzuk, zenbait ‘some’, Spanish algunos ‘some’, Greek kapji ‘some’) cannot combine with the D. We are not going to address the contrast in detail here, but in trying to find an answer to it we will be led to say that only a non-quantity indefinite such as SOME introduces $\exists$ (inherently, or via existential closure), thus preventing combination with a definite D (recall our earlier discussion in §2.2).

Importantly, apart from the obvious reason that each boy is a quantificational expression, evidence that D in o-kathe does not function as an iota is that [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). 8

Further, the relative clause is not necessary; gutxi appears with the D also without it.

(ii) Helmuga gurutzatu zuten txirrindulari gutxi iritsi ziren    leher eginda.
finish line cross aux.pl cyclist few arrive aux.pl
‘Few cyclists that crossed the finish line did so completely exhausted’

Another possibility is that gutxi, just like numerals, can be definite and referential. This explanation could be correct and the denotation of [NP+gutxiak] seems to be indeed referential (see Etxeberria 2005, 2008 for extensive discussion on this).

French quelques and Spanish unos contrasting otros ‘others’, (see Gutiérrez-Rexach 2001) can appear with D. We will not explain this fact here, but our suggestion, given what we say in the text, is these items can indeed denote sets that can then be pluralized under iota, possibly after typeshifting. Why type shifting is not an option for the Greek, Spanish, and Basque SOME will have to await further research.

(i) Los profesores se enfadaron con los estudiantes. Los unos decían que los otros.
D.pl teachers cl. got angry with D.pl students D.pl said that D.pl others
se habían portado muy mal durante la visita del presidente.
cl. had behave very bad during the visit of-the president
‘The teachers got angry with the students. The unos said that the otros behaved badly during the president’s visit’

(ii) Les quelques étudiants qui se sont rapprochés.
D.pl some students that cl are approach
‘The quelques students that approached.’

The test on the impossibility of co-occurrence of demonstratives and the D0-ed o kathe that we apply in Greek cannot be used in Basque because the D and the demonstratives appear in the same syntactic position.
Demonstratives are deictic and are used exclusively to refer to objects in the discourse. Since the demonstrative cannot occur with *o-kathe*, we must conclude that *o-kathe*, unlike the regular D, does not function as an *iota* to refer to an object. This is strong evidence that the *o-kathe* structure is not a referential DP.

Additional evidence that *o-kathe* NP does not behave syntactically as a DP comes from the fact that it cannot reduplicate. DP reduplication is pervasive in Greek, and the structures are known also as polydefnites (Alexiadou and Wilder 1998, Campos and Stavrou 2004, Kolliakou 2004 who coined the latter term):

These [DP plus DP] are thought to express a predication relation between the two DPs, but the details are not crucial here. What is important is that such [DP plus DP] structures are not possible with *o-kathe*, but are possible with D followed by a numeral:

Hence the *o-kathe* structure contrasts with the regular DP.

<table>
<thead>
<tr>
<th></th>
<th>(i)</th>
<th>(ii)</th>
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<tbody>
<tr>
<td>a.</td>
<td>ikasle-a</td>
<td>a. ikasle</td>
</tr>
<tr>
<td></td>
<td>student-D.sg</td>
<td>hau/hori/hura</td>
</tr>
<tr>
<td>b.</td>
<td>ikasle-ak</td>
<td>b. ikasle</td>
</tr>
<tr>
<td></td>
<td>student-D.pl</td>
<td>hauek/horiek/haiek</td>
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<tr>
<td>c.</td>
<td>ikasle guzti-ak</td>
<td>c. ikasle</td>
</tr>
<tr>
<td></td>
<td>student all-D.pl</td>
<td>guzti hauek/horiek/haiek</td>
</tr>
<tr>
<td></td>
<td></td>
<td>student all</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dem.pl.proximal/mesial/distal</td>
</tr>
</tbody>
</table>
Third, in Basque, 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).

(54) NP conjunction
\[
\]
‘The students and teachers are in exams period.’

(55) AdjP conjunction
\[
\]
‘Maia has seen the big horses and small cats.’

Now, if we were to assume that Basque strong Qs created DPs with the structure expressed in (56), 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 (57) clearly shows.

(56) \[DP [QP NP Q] D\]

‘Most of the students and all of the teachers arrived early (intended).’

‘Each girl and all of the boys won a prize (intended).’

What these sentences show is that Basque strong Qs create QPs and not DPs headed by the D, and that the Basque D composes with the Q in these cases, its function being that of contextually restricting the quantificational domain (cf. Etxeberria 2005, 2009 for extensive discussion on this).

We thus conclude that D_{DR}-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 that the D adjoins to the Q.\(^{10}\) One can imagine an alternative of having the Q move to D from a lower position (i.e. kathe to o; in parallel with what was suggested in Szabolcsi 1987 for Hungarian); at present we do not see an empirical difference between the two implementations, but notice that in the second implementation, after adjunction, the status of the head will have to be altered (from D to Q).\(^{11}\)

\(^{10}\) There is a mismatch here between the semantic function of D as a modifier and its syntactic status as a head, since modifiers are more commonly phrasal. Given that D is a phonologically weak element (a clitic basically, certainly in Basque where it is an affix, but also in Greek and English) one cannot expect it to have the status of a full projection. So its syntactic status as a head is driven by its morpho-phonological properties, and is not affected by the semantic functions D can perform.

\(^{11}\) Another option would be to move D from a lower position and adjoin it to Q in a structure [QP[DP[NP]]]. In this case we would get a quantificational element since Q would be in a structurally higher position. However, we are skeptical towards this derivation, because the [QP[DP[NP]]] is an ungrammatical structure in Greek and Basque to begin with, so there is no independent motivation to consider it here. By contrast, in assuming that D composes with
What matters to us is that both D and the Q end up in the same position. From this coexistence, we will suggest, D loses its referential (e-forming) ability: if it didn’t we would have a head that would be both et,e and et,ett. The emergence of D_{DR} then follows as a ‘side effect’ of avoiding this 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

Quantifiers that have undergone D_{DR} appear to be presuppositional and veridical. The notions are given below, and it becomes clear that they are closely related, if not the same:

(58) Presuppositionality of quantificational determiners
A determiner δ is presuppositional iff for all A, B ⊆ D, if A = ∅ then, <A,B> ∉ Dom(δ).
(based on Heim and Kratzer 1998:163)

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

Presuppositional and veridical determiners presuppose a nonempty domain, i.e. they come with a presupposition of existence, or ‘existential commitment’ (Horn 1997). Familiarity/saliency are then further imposed: that this non-empty set be further restricted by some salient property. 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.

Notice, however, that although all, every, both, the, and each generally appear to be associated with non-empty domains, only with both, the, and each is the nonempty domain a pre-condition for felicitous use. With every and all, it may not even be an entailment: we see below that we can negate the non-emptiness of the domain without contradiction:

(60) If you find every mistake, I’ll give you a bonus; but there may be no mistakes at all.
(61) An vris kathe lathos tha sou doso bonus; alla bori na min iparxoun katholou 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}:

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

Q we neatly get the semantic difference between D combining with Q (via adjunction, where it modifies a Q of type et,ett), and D combining directly with the NP where it modifies a noun of type et (as is the case in SS).
If you find both mistakes, I’ll give you a bonus; # but there may be no mistakes ay all.\textsuperscript{12}

In Basque, the same situation obtains, and again, we find -a(k), the definite D,\textsuperscript{13} with all the strong quantifiers (data from Etxeberria 2009):

\begin{enumerate}
\item a. Akats \textit{guzti-ak/gehien-ak} aurgitzen badituzu, sari bat emango dizut.
\item b. Ikasle \textit{bakoitz-ak} liburu bat irakurtzen badu, sari bat emango diot.\textsuperscript{14}
\end{enumerate}

\begin{itemize}
\item a. Akats \textit{guzti-ak/gehien-ak} aurgitzen badituzu, sari bat emango dizut.
\item b. Ikasle \textit{bakoitz-ak} liburu bat irakurtzen badu, sari bat emango diot.
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\end{enumerate}

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.

D\textsuperscript{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 \textit{each} since Beghelli and Stowell (1997):\textsuperscript{15}

\begin{enumerate}
\item a. \textit{Kathe monokeros} exi ena kerato.
\item b. \textit{O kathe} monokeros exi ena kerato.
\item c. \textit{Adarbakar bakoitz-a-k} adar bat dauka.
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\textsuperscript{12} Definites can give mixed results in this test, because they can be used attributively, and in this use they do not refer to actual mistakes.

\textsuperscript{13} Definites can give mixed results in this test, because they can be used attributively, and in this use they do not refer to actual mistakes.

\textsuperscript{14} Definites can give mixed results in this test, because they can be used attributively, and in this use they do not refer to actual mistakes.

\textsuperscript{15} Definites can give mixed results in this test, because they can be used attributively, and in this use they do not refer to actual mistakes.
We’ve included objects to ensure that distributivity with the distributive quantifiers is satisfied. A D\textsubscript{DR}-ed Q, we see, 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 \textit{o kathe, bakoitza}, and \textit{each}, as we see, cannot be used in this way. However, in characterizing sentences they are fine:

\[(66)\]

\begin{enumerate}
\item a. Greek: Sto programma mas, \textit{o kathe} \textit{fititis} prepi na epileksi dio mathimata simasiologias.
\item b. Basque: Gure programan, \textit{ikasle bakoitza-ak} bi semantika eskola aukeratu behar ditu.
\item c. English: In our program, \textit{each student} must choose two semantics classes.
\end{enumerate}

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 \textit{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). \textit{O kathe} ‘D.sg each’, \textit{bakoitza} ‘each-D.sg’, and \textit{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.

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

\[(67)\]

\begin{enumerate}
\item a. Tin periodho ton eksetaseon erxete \textit{o kathe} \textit{fititis} ke me enoxli me anoites erotisis.
\item b. Tin periodho ton eksetaseon erxete \textit{o opjodhipote} \textit{fititis} ke me enoxli me anoites erotisis.
\end{enumerate}

During the exam period, \textit{just about any student} may come by and bother me with silly questions.

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

We conclude then that D\textsubscript{DR}-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.\textsuperscript{16}

\textsuperscript{16} \textit{Guzti-ak} can be used (not \textit{bakoitz-a}) to refer to sub-kinds:

\[(i)\]

\begin{enumerate}
\item Dinosauru guzti-ak aspaldi desagertu ziren.
\item Dinosaur all-D.pl long-time-ago disappear aux.past
\end{enumerate}

‘All the dinosaurs became extinct a long time ago.’

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

\[(ii)\]

\begin{enumerate}
\item a. * \textit{O kathe} dinozavros exi eksfanisti.
\end{enumerate}
Next, we move to show that the operation $D_{DR}$ can only apply once.

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

When contextualisation 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:

(68) Basque:
   a. * ikasle-$ak$ guzti-$ak$
      student-D.pl all-D.pl
   'The all-the students'
   b. * ikasle-$a$ bakoitz-$a$
      student-D.sg each-D.sg
   'The each-the student'

(69) Greek:
   * o kathe o fititis

Likewise in SS (Matthewson 2009), and in Chinese (Cheng 2009). The overt partitive is also excluded as shown below. Under Ladusaw (1982)’s 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 $ikasleeta$ (lit.: student the.pl of) would yield the correct predicative argument (et type) for the Q to quantify over; but still, (70) is out.\(^{17}\)

\[ \begin{align*}
\text{(i)} & \quad \text{Ikasle-eta-$ko$ bakoitz-$ak$ lan bat egin behar du. (Basque)} \\
& \quad \text{student-D.pl.gen each.D.sg.erg work one do must aux}
\end{align*} \]

This sentence contrasts with the ablative *ikasleetaik bakoiza, which is completely ungrammatical. To explain (i), and the contrast with the non-genitive, we argue that the genitive -$ko$ but not the ablative -$tik$ provides an implicit argument “one”. There is no other way in which something like “each one of the students” can be expressed in Basque. Evidence for the existence of implicit one is given by the Greek examples below:

\[ \begin{align*}
\text{(ii)} & \quad \text{a. * O kathe apo tus fitites prepi na simetexi. (Greek)} \\
& \quad \text{the each of the students must participate}
\end{align*} \]

The impossibility of (iia) and the need of $enas$ ‘one’ in the Greek (iib) suggests that Basque (i), which is fine, contains an implicit argument one. Thus in both genitive and ablative we have partitives with the second D; but only...
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\text{DR} cannot apply directly to the NP argument, e.g. Basque, English, Greek, etc. Thus, in (70) 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\text{DR} is excluded. The reason for this is that definite reduplication requires two definites (Alexiadou and Wilder 1998, Campos and Stavrou 2004), and D\text{DR}-ed Qs are simply not DPs. In Basque, definite reduplication is generally 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\text{DR} is ruled out on what could be thought of as morpho-syntactic grounds.

The second reason is more pragmatic. 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\text{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:

(71) an expensive expensive car

In (71) only one of the adjectives is interpreted as a restrictor. The other is interpreted as a degree modifier like ‘very’, yielding a 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{Two anonymous reviewers mention that (71) 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’. We agree that this second interpretation is possible, however, in this case, we would not be talking about the same adjective (expensive in this case) restricting the same NP twice; rather the second expensive would be restricting the AP expensive car.}

We thus claim that D\text{DR}, at least in the languages we are studying, cannot apply more than once. In other words, we cannot have simultaneously D\text{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, finally, we concentrate on fraction expressions that contain D, and show that these too are consistent with the impossibility of D\text{DR} simultaneous to both Q and NP.

the genitive is good because only the genitive introduces one. (i) thus involves Q restriction followed by a partitive, and is consistent with our assumption that domain restriction applies only once; see Etxeberria & Giannakidou (in prep.) for more discussion on this.
3.5 D in fraction expressions: not D<sub>DR</sub>

In fraction expressions like the ones below 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:

(72) 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. Pliopsifia ton fititon 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, 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<sub>DR</sub>, 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:

(73) Basque:
   a. * Ikasle-en erdi berandu etorri da
      student-D.pl.gen half late arrive aux
   Spanish:
   b. * Mitad de los estudiantes llegaron tarde
      half of-D.pl students arrived late
   French:
   c. * Moitié des élèves est arrivée en retard
      half of-D.pl students be arrived late
   Greek:
   d. * Pliopsifia ton fititon psifise yper.
      majority the.gen students.gen voted in favor
   English:
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 in examples above, a quantifying word combines with a D, and its argument NP is necessarily followed by a partitive.

(74) 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 *pliopsidia* 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.

(75) a. Basque: * Ikasleen heren bat 
student-D.pl.gen third one
b. Spanish: * un tercio de los estudiantes 19 
one third of D.pl students
una (gran) mayoría de los estudiantes

19 Due to some special lexical property of the Basque *erdi* ‘half’ and Spanish *mitad* ‘half’ cannot combine with the numeral ‘one’ when the NP is partitive:

(i) a. Basque: * Ikasle-en erdi bat berandu etorri da
student-D.pl.gen half one late arrive aux
b. Spanish: * Una mitad de los estudiantes han llegado tarde
one half of the students arrived late

However, and despite the cases in (i), Basque *erdi* and Spanish *mitad* create grammatical constructions when the noun they combine with is made silent or when a richer context is provided. We only give a Basque example, but the same applies to Spanish.

(ii) Basque:
a. Ikasleek hauteskundeak izan dituzte ordezkaria aukeratzeko;
student.erg elections be aux representative-D.sg elect-to
erdi batek hautagai ezkertiarraren aldeko botoa eman zuen eta beste erdiak
half one.erg candidate left-wing-D.gen in favor vote-D give aux and other half-D.erg
hautagai eskuitarraren aldekoa.
candidate right-wing-D.gen in favor
‘The students celebrated elections to choose the student’s representative; one half voted for the left-wing candidate and the other half for the right-wing candidate’

Note on the other hand, that in English *half* cannot combine with the definite determiner.

(ii) * the half of the students

We have nothing interesting to say right now about these cases, and leave them for the future.
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 as 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 can contextually restrict Qs as well as their domains, and both options must be allowed (see also Martí 2003). When the D_{DR} applies to Q, the created Qs are presuppositional and refer to nonempty discourse salient domains. This entails that D_{DR}-ed Qs cannot be used to refer to kinds, whose domain, by the very nature of the kind, is unrestricted. Finally, D_{DR} can only apply once, either to the Q or to the NP.

4 Contextual restriction via D and the weak-strong distinction

Up until now, we have argued that strong Qs are contextually restricted and showed that the operation of domain restriction, which applies either to the Q or to the nominal, is realized overtly by means of the D in some languages, e.g. Basque, Greek, Salish. In this section we discuss 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 (76-77), the latter do not combine with D (78-79).

(76)  
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.

(77)  
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.

(78)  
a. [Zenbait politikari] berandu iritsi ziren.
[some politician] late arrive aux.pl.past
‘Some politicians arrived late.’

(79)  
a. [Politikari asko] berandu iritsi ziren.
[politician many] late arrive aux.pl.past
‘Many politicians arrived late.’
It appears that only strong Qs can be contextually restricted via D in Basque. In Greek, too, weak Qs cannot combine with D: *ο καπνος ζήτησε ‘*the some student’, *ι μερική ζήτησε ‘the several students’, as we mentioned earlier in section 3.2.

Weak Qs have often been treated in the literature as “adjectival”, and in this analysis, they are not considered (real) Qs of type \textit{et}, \textit{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, and this is a common assumption, or conclusion, 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 \textit{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).

\begin{align*}
(80) & \text{Gonbidatu-ak [ikasle asko/batzuk/gutxi] ziren.} \\
& \text{guest-D.pl student many/some/few be.pl} \\
& \text{‘The guests were many/some/few students.’} \\
(81) & \text{*Gonbidatu-ak [ikasle guzti-ak/den-ak/bakoitz-a] ziren/zen.} \\
& \text{Guest-D.pl [student all-D.pl/all-D.pl/each-D.sg] be.pl/be.sg} \\
& \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 \textit{et}) will be carried out through intersection (cf. Landman 2002), yielding an element of type \textit{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 structures:

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

\[ QP \quad \begin{array}{c}
Q \\
\text{NP}
\end{array} \quad \begin{array}{c}
\text{∅: } \exists \{\text{quantity denoting weak Q + NP}\}
\end{array} \quad (\text{Greek; Giannakidou and Merchant 1997})
\]
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. From this, it follows that weak Qs cannot undergo D$_{DR}$. This is in agreement with a claim often made in the literature that weak Qs are non-presuppositional in their cardinal reading, and ‘presuppositional’—thus, we take it, domain restricted—only in their proportional reading 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; D$_{DR}$ functions only as Q modifier in these languages (not directly on the NP; unlike in Salish, where it can do both), and needs a Q type $et, ett$.

In SS, on the other hand, where D$_{DR}$ can indeed apply to NP, weak Qs can indeed be D$_{DR}$-ed in the NP argument.

(84) cw7it i smelhmúl hats-a qwatsáts  (Matthewson 1998: p.292)
many D.pl woman{pl}-D left
‘Many (of the) women left’

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. In SS, on the other hand, it does, and, as expected, we find sequences of D with these weak Qs.

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. A key component in this theory is that D functions as a modifier, and that, in this function, D$_{DR}$ can modify the Q itself. This modification gives a Q that is familiar and inherently presuppositional, and can thus be used only when a discourse salient set is available.

An implication of our analysis was that weak Qs cannot be modified by D$_{DR}$ because these are not Qs but predicates; and in the languages we are studying (Basque, Greek) D$_{DR}$ does not apply directly to a predicate. In SS, on the other hand, it does, and, as expected, we find sequences of D with these weak Qs.

Our result is consistent, as we mentioned, with the common statement in the literature that weak Qs have cardinal and proportional readings, and that only in the latter case they come with given domains. In recent work, however, 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- modifies unos and hereby 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 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)):

(85)  
{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 cl have found.out children cl have perdido en el bosque.  
gotten.lost in the forest  

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:

(86)  
{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!

This data suggest, according to Martí, 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):
Example (87) 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. (87a) is adapted from an answer provided by this doctor; by *algunos países*, the doctor means ‘some countries in Subsaharan Africa’. In (87b), 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 *algunos* draws values, in these cases, from some set under discussion; second, and we believe equally interestingly, *unos* remain novel in this context, as expected by an indefinite—perhaps radically discourse novel, since *unos* is generally incompatible with the partitive: *unos de los NP* in Modern Spanish.

Is the link to a set under discussion of *algunos* a case of familiarity in the sense of Heim (1982)? That would be a surprise: *algunos* is an indefinite, and we expect it to carry a novel rather than a familiar index. Martí, however, opts for the following analysis (Martí 2009: 120: (26), (27), (28)):

\[
(88) \quad \text{[[unos]]} = \lambda P_{\text{<et}>}. \lambda Q_{\text{<et}>}. \exists x [\text{Mol}(x) \& P(x) \& Q(x)]
\]

(‘Mol’ stands for “molecular/plural individual”)

\[
(89) \quad \text{[[alg.-]]} = \lambda P_{\text{<et},<\text{et}>}. \lambda P_{\text{<et}>}. \lambda Q_{\text{<et}>}. R(P \cap C)(Q)
\]

Implicature: \( R(P \cap C) \{x : Q(x) = 0\} \)

\[
(90) \quad \text{[[algunos]]} = \lambda P_{\text{<et}>}. \lambda Q_{\text{<et}>}. [[\text{unos}}]](P)(Q)
\]

Implicature: \( [[\text{unos}}]](P) \{x : Q(x) = 0\} \)

\[
= \lambda P_{\text{<et}>}. \lambda Q_{\text{<et}>}. \exists x [\text{Mol}(x) \& P(x) \& Q(x)]
\]

Implicature: \( \exists x [\text{Mol}(x) \& P(x) \& Q(x) = 0] \)

According to Martí, this brings a partitivity implicature, i.e. that *alg+X* needs to be linked to a discourse set C. The idea is cast within an indefiniteness hierarchy that Marti (2008) posits, and context dependency occupies the highest level in that hierarchy. Crucially, the context
dependence derived by these formulas is an implicature, and not the presupposition of saliency that we get with D_{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 algunos to be presuppositional, and therefore always proportional. According to Martí, algunos, is not presuppositional: “Thus, both unos and algunos induce the entailment [emphasis ours] that the set denoted by the head noun is non-empty.” (Martí 2009: 115). This is in stark contrast with D_{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 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 Alg-indefinites have unrestricted uses

One thing to note first is that the alleged effect of context sensitivity of alg- is only observed with unos, and not with other weak Qs: *algdos ‘alg-two’, *algunos ‘alg-many’, etc. The lexical meaning assigned to alg- predicts more general application— like our D_{DR}—and, as far as we understand it, the semantics for alg- is NOT a lexical rule specific to algunos, or a meaning postulate that applies only to algunos. The lack of systematicity is unexpected if alg- works compositionally— recall that the D_{DR} is a generalized strategy for domain restriction as we took pains to show. The limitation of alg- to unos suggests that the effect is more “lexical”: it concerns unos and the way it contrasts with 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.20

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

5.2.1 Existential sentences

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

\[(91) \text{Context: Upon arriving at the school and seeing several groups of boys fighting, the principal, tired and sick of seeing the same scene every day, mumbled to himself: “What a way to begin the day!”}. \text{ In a panic, he realised that:}
\]

a. ...había algunos chavales demasiado cerca de la carretera.

b. ...había unos chavales demasiado cerca de la carretera.

‘there were algunos/unos boys too close to the road’

---

20 Martí could invoke some kind of morphological blocking to rule out 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 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 algunos).
In (91a), 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 *algunos* must refer back to the discourse
salient set of children that are fighting. *Algunos* and *unos* are equivalent in this context.

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

(92)  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):

(93)  a. # There are some of the boys in the elevator.
  c. # There are three/several/few of the boys in the elevator.
  c. # There is each boy in the elevator.
  d. # There are the boys in the elevator.

Partitives, definites, and D_{DR}-ed Qs are all contextually restricted via D, and ruled out. *Algunos*,
by contrast, is fine. This fact in itself sets *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 *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* does not presuppose the existence of its referent, but rather it asserts it, as
indefinites are expected to do.

5.2.2  *Algunos* can be used generically

Martí mentions that *algunos* also receives generic uses:

(94)  *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:

(95)  a. # *O kathe* monokeros exi ena kerato.
  b. # Each unicorn has one horn.
  c. # Adarbakar *bakoitz-a-k* adar bat dauka.\(^{21}\)

\(^{21}\) -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 (95) is the ergative marker. See Etxeberria (2005, 2008).
Generic 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 cf. fn.17), 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, 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 (96) shows. Example (96) 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.

(96) 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/uno 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)).

(97) 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 Maria 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 (97) 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 in a way similar to FCIs; and we know, FCIs are not contextually restricted.²²

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 we apply it to FCIs. Rather, the effect seems akin to some or other:

(98) 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 Dconomic Qs, but are generally available with SOME indefinites crosslinguistically:

(99) I Maria vgeni me kapjon, ala pjos kseri ti tha ine ki aftos. Mary is dating some guy, but who knows what he is.

(100) Miren mutil-en bat-ekin geratu da, batek daki zein izango den.²³ Mary boy-gen one-with date has one.erg know who be aux

(101) I don’t want you to date some jerk.

²² Note that FCI in Basque cannot appear with D.

(i) Azterketa garaian, edozein ikasle etor daiteke bulegora galderak inozaok egitera. exam period-in any student come can office-to question stupid-D.pl make-to

Cf. Etxeberria (in prep) for extensive discussion on Basque FCIs.

²³ 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
This use of SOME, which is characteristic of the singular typically, cannot be captured under context sensitivity, nor under generic use.

To conclude, then, we saw in this subsection that \textit{alg-} indefinites behave differently from contextually restricted Qs: \textit{alg-} indefinites do not always refer to a context set. Rather, they seem to also have the expected uses as novel indefinites. The singular/plural distinction is particularly telling, because it shows that \textit{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 \textit{alg-} indefinites are contextually restricted as a class, and look for an alternative.

6 Domain restriction versus specificity

The amount of work that has been done on definites and indefinites in the past 25 years is enormous, and we cannot possibly do justice to it here. 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 thus \textit{introducing} discourse referents; but definites carry familiar indices and refer to objects previously introduced in the discourse (cf. (17)). From this perspective, as we have already alluded to, contextual domain restriction—which relies on a presupposition of a contextually salient domain—is \textit{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 “targeted” reference by the speaker, and in this case, we talk about specificity.\footnote{We will adopt here without argument an epistemic approach to specificity, which seems to be popular in recent years (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).} 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 \textit{particular, specific}, and \textit{this} (Ionin 2006 and literature cited there):

A. Wide scope of specific indefinites with respect to modal verbs:

\begin{enumerate}[nosep]
\item[(102)] a. Mary wants to marry a\textbf{ certain} philosopher. (#Any philosopher will do!)
\item b. Mary wants to marry \textbf{this great} guy! (#Any great guy will do!)
\end{enumerate}

\begin{enumerate}[nosep]
\item[(103)] Mary wants to marry the man she met yesterday. #Any man will do!
\end{enumerate}

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 that allows free choice of the referent.\footnote{Another useful test for distinguishing this specific use from the non-specific one is through 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).} The hearer doesn’t need to share this knowledge. Second, in specific use, the indefinite refers almost rigidly \textit{in the speaker’s mind} to a particular
individual. Compare with the non-specific use of a bare indefinite, i.e. 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:

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

Exactly the same pattern is observed with negation:

(105) a. Mary didn’t meet a certain philosopher. #There aren’t any around.
    b. Mary didn’t meet this great philosopher! #There aren’t any around

(106) Mary didn’t meet that philosopher. #There aren’t any around.

This tendency of specific indefinites to escape the scope of negation led to characterizations of them as positive polarity items (see Giannakidou 2009 for discussion of specificity and positive polarity). Compare again with the bare indefinite:

(107) Mary didn’t meet a philosopher. There aren’t any around.

Specificity is a notion that received considerable attention in the recent years (since Fodor and Sag 1981, and more recently Reinhart 1997, Winter 1997, Kratzer 1998, Farkas 2002, Schwarzschild 2002, Endriss 2006, Endriss et al. 2007, Ionin 2006), and these facts became well known in many discussions. In the epistemic approach to specificity, specificity has to do with speaker reference: in choosing to use an indefinite specifically, the speaker has a particular individual or set of individuals in mind, and an indefinite in this use becomes prominent in the mind of the speaker; this is reflected in the notion of speaker identifiability (Groenendijk and Stokhof 1981), and “targeted speaker reference” that we employ here.

Definiteness, on the other hand, has to do with speaker and hearer reference, or common ground 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. Hence specificity and definiteness must be kept apart: definites are definites, i.e. they are familiar and carry a presupposition of existence; but specific indefinites are indefinites in the Heim sense, but carrying at most a felicity condition that there be some individual in the mind of the speaker when used specifically. (We ignore uniqueness here). For example, in (109) we have the felicity condition associated with this blue apple, according to Ionin; in (108) the semantics for specificity proposed by Ionin (2006: (23b)) (sp stands for specificity marker):

(108) A sentence of the form \[\text{sp } \alpha \] \(\zeta\) 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 \(\varphi\) which the speaker considers noteworthy in \(c\), and \(x_c\) is both \(\alpha\) and \(\varphi\) in \(c\). When this condition is fulfilled \[\text{sp } \alpha \] \(\zeta\) expresses that proposition which is true at an index \(i\) if \(x_c\) is \(\zeta\) at \(i\) and false otherwise.

(109) [[I found this blue apple on my plate]] is defined in a context \(c\) if the following felicity condition is fulfilled:
i. [[this blue apple]] is intended by the speaker s_c to refer to exactly one individual x_c in c; and

ii. there is a property P that s_c finds noteworthy in c; and

iii. the individual x_c has both the noteworthy property and the NP property.

iv. If this condition is met, [[I found this blue apple on my plate]] expresses a proposition that is true iff I found x_c on my plate.

Noteworthiness must be taken literally here: worthy of note (in a given discourse). A property is not to be considered noteworthy in every discourse; Ionin’s commentary is as follows. “The property of being a blue apple is noteworthy since I don’t expect apples to be blue. On the other hand, suppose that I’m participating in a game in which the goal is to collect plastic apples of various colors. If a player wants to express the fact that she has collected yet another apple, which happens to be blue, it would be infelicitous for her to say I found this blue apple. The property of being a blue apple would not be considered noteworthy.” (Ionin 2006: 108)

The felicity condition offered in (109) is different from a presupposition since a presupposition is taken to be true by both speaker and hearer, as is the case with definites. In contrast, a felicity condition 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 view and not the state of the hearer’s knowledge. This will be clearly different from the use we make of definites, where both the speaker and the hearer’s views are taken into account, i.e. common ground reference.

Finally, it is important to recall that the difference between specific indefinites and definites persists in existential contexts:

(110) a. # There is the book on the table.
        b. There is a certain book on the table.
        c. There is this great guy in our department.

The definite is out, but the specific indefinite is in, as we see. And recall, from our earlier discussion, that algunos is indeed acceptable in existential structures, a fact indicating that it behaves like a cardinal, non-partitive indefinite. This fundamental difference between being a definite and a specific indefinite is, we believe, the key to understanding the nature of algunos and other SOME indefinites that tend to be used specifically.

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. This means, then, that algunos, is being exploited as a specificity marker, along the lines of specific, particular, and this. Following Ionin, we propose the following conditions for a sentence containing algunos:

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

    i. [[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, [[algunos NP VP]] expresses a proposition ∃x [P(x) ∧ NP (x) ∧ 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.
(Unlike this, algunos, as a specificity marker, does not seem to convey noteworthiness). In this account, it is important to treat algunos as a whole, because it is both alg- and the plural that force specificity. As noted earlier, the singular algún allows both cardinal and specific readings. This fact did not follow from Martí’s analysis of alg-, but it follows form ours because we posit that only the plural is a specificity marker. Notice that 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). Singular 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 algunos as belonging to the class of specific indefinites, and added algunos to the repertory of specificity markers that we find in various languages. Since 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 algunos and unos is thus speaker regulated, and the specificity analysis of algunos can help us understand why unos is “doomed” to the non-specific realm.

But why doesn’t the specificity distinction surface in the singular between un and algún? (Recall that algún is much freer to pick non-specific reference). We cannot offer a detailed explanation here, 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—unos—and a SOME indefinite. Most of the languages we know do not have this dual option. If unos, plausibly, is the plural of a and therefore the unmarked way to use express novelty (cf. Leonetti 1999, Gutiérrez-Rexach 2001, Martí 2009), then algunos can be thought of as the marked option, explored by a speaker only when s/he wants to do something more that introduce a novel discourse referent.

7. 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 than one would have expected had the phenomenon been primarily pragmatic. Second, D elements, and the definite D in particular are systematically used in a number of languages—we have illustrated here with Basque, Salish, Greek, and Romance languages—as domain restrictors. In this use, D is a modifier supplying a context set C, and can systematically apply to the Q itself. This composition, we argued, produces quantificational determiners that can only be used to quantify over salient non-empty domains. Crucially, the function of domain restriction of D is tied closely to the familiarity that comes with semantic definiteness, so our prediction is that if a D element in a language can convey familiarity, then it can also function as a domain restrictor (though of course it doesn’t have to; e.g. English the).

Our third 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.

Though we have taken issue with the specifics with earlier analyses, our analysis shares with these a common and powerful thread: it emphasizes that the 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 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.

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