D-heads, domain restriction, and variation: from Greek and Basque to St'át'imcets Salish[*]

Urtzi Etxeberria & Anastasia Giannakidou
IKER-CNRS & University of Chicago
November 2010

Abstract
In joint work (Giannakidou 2004, Etxeberria 2005, Etxeberria and Giannakidou 2010), we argue that one of the functions a D head can perform in language is to provide domain restriction. For this, we propose a new mode of composition for D—D_{DR}. D_{DR} is a type-shifting of D from its "regular" individual yielding function (*iota*) to a modifier function supplying the context set variable C. In Greek, St'át'imcets Salish, and Basque we find D_{DR} applying to Q, but in St'át'imcets, the D-head shifts to D_{DR} also when it combines with the NP under Q. Our analysis relies on Salish D being a definiteness head, since C is a discourse salient or familiar property; we thus challenge Matthewson's (1998, 2001) treatment of St'át'imcets Salish D as indefinite. Our goal here is to consider the St'át'imcets data and show that (a) the arguments for indefiniteness of D are not conclusive, and (b) the St'át'imcets facts are fully consistent with an analysis of D_{DR} as a manifestation of definiteness. The St'át'imcets D, we will suggest, is best analyzed as a deictic, demonstrative-like D head, consistent with its morphology.

1 D-quantifiers and contextual domain restriction

It has long been noted that domains of strong quantifiers are contextually (explicitely or implicitely) restricted (cf. *inter alia* Reuland and Ter Meulen 1987). Since the early GQ theory, 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, 1998, Stanley & Szabó 2000, Stanley 2002, Martí 2003, Matthewson 2001, Giannakidou 2004, Etxeberria 2005, 2008, 2009, Gillon 2006, 2009, Etxeberria and Giannakidou 2009, Giannakidou and Rather 2009), or not (Recanati 1996, 2004, 2007, and others in the *strong contextualism* tradition). In the syntax-semantics approach, it is usually assumed that the domains of Qs are contextually restricted by covert domain variables at LF. These variables are usually free, but they can also be bound, and they can be either atomic, e.g. *C*, or complex of the form *f(x)*, corresponding to selection functions (Stanley 2002, von Fintel 1998, Martí 2003):[1]

[*] Many thanks to Lisa Matthewson for her extensive and challenging comments that prompted our expanded discussion in §4. More thanks to individuals will follow. We are also grateful to the various audiences where this material was presented: the *Context-Dependence, Perspective and Relativity in Language and Thought* in Paris (2007, ENS), the *Conference on Nominal and Verbal Plurality 2008* in Paris, the *Chicago Workshop on Basque*, the *19th Colloquium in Generative Grammar* in Vitoria-Gasteiz, the *LyCC Colloquium Series* in Madrid (CCHS, CSIC), and the *LUSH* audience at the University of Leiden. For comments and suggestions at various stages of this work, we would additionally like to thank: Lisa Cheng, Paul Elbourne, Ricardo Etxepare, Kai von Fintel, Fernando García-Murga, Chris Kennedy, Brenda Laca, Louise McNally, Jason Merchant, Javier Ormazabal, Beñat Oihartzabal, Monika Rathert, Craige Roberts, Jason Stanley, Melita Stavrou, Zoltan Szabó, Anna Szabolcsi, and Myriam Uribe-Etxeberria. The second author's research was supported by the following projects: the Basque Government GIC07/144-IT-210-07, and Hm-2008-1-10; the CNRS Fèderation Typologie et Universaux Linguistiques FR2559; the ANR TSABL (ANR-07-CORP-033); and the MCI FFI2008-00240.
[1] We won't consider this complex domain variable here due to lack of space.

(1) Many people came to the party last night; every student got drunk.
(2) ∀x [student (x) ∩ C(x)] → got drunk (x).

Here, the nominal argument of ∀, *student*, is 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 discourse familiar set of people who came to the party last night. *Every student* then will draw values from the intersection of this set C with the set *student*.

In recent work (Giannakidou 2004, Etxeberria 2005, Etxeberria and Giannakidou 2010) we suggest that supplying C is a function that D heads may perform crosslinguistically. Empirical evidence came from compositions of D and Q itself, like in the examples below: [2]

(3) a. **o** kathe fititis (Greek; Giannakidou 2004: (32b))
D.sg every student
'each student'
b. * kathe o fititis
every D student

(4) a. mutil guzti-**ak** (Basque; Etxeberria 2005: (37a))
boy all-D.pl
b. mutil bakoitz-**a** (Etxeberria 2005: (37b))
boy each-D.sg
c. *mutil guzti/bakoitz; *mutil-**ak** guzti; *mutil**-a** bakoitz

(5) a. **i** tákem-**a** smúlhats (St'át'imcets; Matthewson 2001: 151, fn.5)
D.pl all-D woman
'all of the women'
b. **i** zí7zeg'-**a** sk'wemk'úk'wm'it (Matthewson 1999: 41c)
D.pl each-D child(pl)
'each of the children'

(6) a. vsjako momče (Bulgarian; Giannakidou, Schürcks, and Etxeberria 2009)
'every boy'
b. vsički-**te** momčeta
every-the-pl boy-pl
'each boy'

[2] In Hungarian *every NP* can be expressed in two ways.
(i) a. minden diák
every student
b. az összes diák
the all student
c. * összes az diák
all the student
The relevant example for us is (ib) where the D combines with the Q, and not with its nominal argument, as shown by (ic), just as our Basque and Greek examples. Thanks to Aniko Liptak for helping us with Hungarian data.

Here we have D as independent heads (Greek, St'át'imcets)[3], suffixal Ds (Basque, Bulgarian), all applying to the Q, to create D-universals. These data, where a D combines with a Q are unexpected under the standard analysis of DP, because here D combines with the wrong type of argument, a Q. In a language like English (**the every student*) the combination yields type mismatch and is ruled out, but in Greek, Basque, St'át'imcets, and Bulgarian the mismatch is "salvaged", we argue, by the ability of D to function as a domain restrictor.

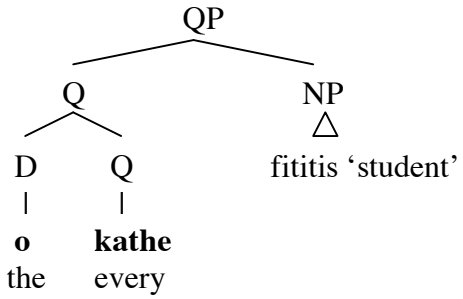
In Etxeberria and Giannakidou (2009) we proposed that D in this configuration type-shifts to a modifier function, and defined the domain restricting function D_{DR}:

(7) D to D_{DR} type-shifting
(i) D_{DR} rule : When D composes with Q, use D_{DR}.
(ii) $[\![D_{DR}]\!] = \lambda Z_{et,ett}\ \lambda P_{et}\ \lambda R_{et}\ Z\ (P \cap C)\ (R)$; where Z is the relation denoted by Q

D_{DR} is a function that introduces C, the context set variable. D_{DR} does not create a referential expression, but is simply a modifier of Q. This is motivated by the fact that D is fed the wrong type of argument—Q instead of NP; so D_{DR} arises as a type-shifting solution to avoid mismatch. By supplying just the context set variable, D_{DR} triggers the presupposition that the common ground contains a property that can function as the antecedent, or identifier for C. C needs this property to specify its content, since C itself is pretty empty. Syntactically, we assume that in D_{DR} D attaches to the Q, so the result is a QP with the following structure:

(8) a. $[_{QP}\ o_{\ D} + kathe_{\ Q}\ [_{NP}\ fititis_{N}]]$
b. o kathe fititis = [(C) kathe] (student) 'each student'

(9)



a. Basque: ikasle guzti-ak = (ikasle) [guzti (C)]
Greek: o kathe fititis = [(C) kathe] (fititis)
b. $[\![Q]\!] = \lambda P\ \lambda R\ .\ \forall x\ P(x) \rightarrow R(x)$
c. $[\![D]\!] = \lambda Z_{et,ett}\ \lambda P_{et}\ \lambda R_{et}\ Z\ (P \cap C)\ (R)$; Z the relation denoted by Q
d. $[\![D\ (Q)]\!] = \lambda P\ \lambda R.\ \forall x\ (P(x) \cap C(x)) \rightarrow R(x)$

The result is a Q that will be anaphoric to and dependent on a discourse familiar property. This means that it will impose on the context the constraint that there be a non-empty set that for it to quantify over. This is, we suggested in Etxeberria & Giannakidou (2009) what underlies all presuppositional and veridical (Giannakidou 1998) D-restricted quantifiers, from 'o kathe fititis' to 'each student', the latter also having been claimed to require non-empty domain. Our

[3] The D in St'át'imcets consists of a proclitic part (*ti* for singulars; *i* for plurals), which encodes deictic and number morphology, and an enclitic part *...a* which adds to whatever is the first lexical item in the DP (Matthewson 1998).

hypothesis is that the composition of *each* (and similar D-universals crosslinguistically) would involve a structure parallel to the Greek and Basque that we propose here: [D-*every*]; only with *each,* D is covert. At any rate, D with Qs in Greek, Basque, Bulgarian, and Salish shifts to D-DR, but English *the* doesn't, so whether the shifting rule applies to D in a given language is subject to parametrization. In a language lacking D, the shift to D-DR will be done by the closest approximant of definiteness, as is the case in Chinese with *dou* (Cheng 2009).

Our theory of D as type-shifter to a domain restricting function supplying C must be understood within the theory of definiteness of Roberts (2003, 2004, 2010). Synthesizing and modifying the earlier analyses, Roberts (2003) argues that definites conventionally trigger two presuppositions: one of *weak familiarity*, and a second one called *informational uniqueness*. These are the informational counterparts of Russellian existence and uniqueness, respectively. Roberts (2004) argues that the same presuppositions characterize the meaning of pronouns and demonstratives (Roberts 2002), which are understood as the other members of the class of definites. We summarize here from Roberts (2010:3):

(10) **a. English Definite NPs**: definite descriptions, personal pronouns, demonstrative descriptions, demonstrative pronouns, and proper names
b. Definiteness: We say that an NP is definite just in case it carries an anaphoric presupposition, i.e., it carries a presupposition of weak familiarity.
c. Weak familiarity: A presupposition of weak familiarity requires that the existence of the relevant entity be entailed by the interlocutors' common ground. Such existence entailments by themselves are sufficient to license introduction of a discourse referent into the context of utterance. Weak familiarity does not mean previous mention. Previous mention is strong familiarity.
c. The **antecedent** of an anaphoric expression is the **discourse referent** which satisfies its anaphoric presupposition. A discourse referent is the identification of an existence entailment in the interlocutors' Common Ground, modeled as a constraint on contextually admissible assignment functions.
d. Anaphora (and hence, weak familiarity) does not presuppose a linguistic antecedent!
f. Pronouns, unlike definite descriptions, carry the additional presupposition that the discourse referent which satisfies their presupposition is **maximally salient** at that point in the discourse. This difference will be used to explain the fact that **when uniqueness effects arise, they are generally triggered by definite descriptions, not pronouns.**

In other words, and here we quote from Roberts (2003: 288): "The notion of familiarity involved [in definites] is not that more commonly assumed, which I will call *strong familiarity*, where this usually involves explicit previous mention of the entity in question. Rather, I define a new notion, that of ***weak familiarity*** wherein the existence of the entity in question **need only be *entailed*** by the (local) context of interpretation. […] **Gricean principles and the epistemic features of particular types of context are invoked to explain the uniqueness effects** observed by Russell and others". The notions of *hearer old* versus *discourse old* have also been used (Prince 1982; Ward and Birner 1994) to distinguish different "shades" of familiarity, akin, but not identical to the contrast between weak and strong familiarity posited by Roberts.

This framework provides a theory of familiarity where the definiteness criterion is weak familiarity, and within definites, there will be some that will only be licensed by prior mention (strong familiarity), or maximal saliency (these will be the pronouns including demonstratives in

English). In other words, the use of D brings in the presupposition that the DP will refer to a discourse referent x which is (at least) weakly familiar and unique among discourse referents (not *entities*) in the domain. Our idea that D supplies C enriches Roberts' typology by rendering D_{DR} a case of property anaphora, since C which targets a weakly or a strongly familiar *property* in the common ground. In D_{DR}, the DP does not *make reference* to the familiar property, since the referential function of D is supressed; rather, D in D_{DR} is merely a signal that such a property exists in the common ground.

In the present paper, following our earlier work, we will use D_{DR} to explain the apparently unexpected fact, and quite rare typologically (see our earlier works for arguments against it being a generalized pattern) that DP occur systematically as arguments of Qs in St'át'imcets (Matthewson 1998, 2001). Our discussion will not aim at a full characterization of the D in that language; our goal, rather, will be more modest: we want to show that there is no conclusive evidence that the St'át'imcets D is indefinite (as Matthewson argued), and that the main facts of St'át'imcets are compatible with D being a member of the definiteness class, as we argue. Before we proceed with the Salish data, though, we want to provide some clear syntactic arguments that D in D_{DR} does not yield DP.

2 D_{DR} does not produce DP

The application of D_{DR}, as we envision it, is a type shifting rule—but we could also think of it, and maybe we should, as a lexical modification of Q. In either case, a type shifting or lexical rule would make us expect that the product will alter the category of Q: so we have a QP and not a DP (since D does not function syntactically, so to speak). However, one could ask: how do we know that *o kathe* or *guzti-ak* (and the rest of Basque strong Qs that can be modified by D; Etxeberria 2005, 2009) do not create DPs? These are certainly attested structures in Greek and Basque (as well as English and many other languages):

(11) 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 are DPs, as indicated in the brackets, and are interpreted like regular definite descriptions: the denotation of *three students* will be a familiar and unique set of three students. The output of these structures is then of type *e*, and not a GQ, which is the output of the D_{DR} structure as we argued.[4] What are the arguments that our D_{DR} structure is not a DP of this kind?[5]

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

(i) a. I {poli/ liji/ *kapjii} fitites pu irthan sto parti, ekanan poli fasaria. (Greek)
[The [many/few/*some students]] that came to the party made a lot of noise.
b. Festara etorri ziren ikasle {*asko/*batzuk/*zenbait}-ak] zarata haundia egin zuten (Basque)
to the party come aux student many/some/some-D.pl noise big make aux

Weak Qs as a class, then, do not generally embed under D. We are not going to address the contrasts here, but we think it suggests that non-quantity weak Qs introduce ∃ (inherently, or via existential closure), thus preventing

Importantly, apart from the obvious reason that *to kathe agori* 'each boy' is a quantificational expression, evidence that D in *o-kathe* does not create a DP comes from two facts. First, [*o-kathe* NP] cannot co-occur with the demonstrative pronoun (*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): [6]

(12) a. aftos *(o) fititis
this the student
'this student'
b. ekinos *(o) fititis
that the student
'that student'

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

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

The demonstratives *aftos*/*ekinos* are not D heads in Greek, but phrases in [Spec, DP], as argued by Stavrou and Horrocks 1989. Since the demonstrative cannot occur with *o-kathe*, we must conclude that the phrase headed by the D-universal doesn't count as a DP.

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

(15) **o** kokinos **o** tixos
the red.nom the wall.nom
'the wall that is red"

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

---

combination with a definite D. The Basque counterpart of *few* can combine with the D, but only in relative clauses (some speakers do not accept *gutxi+ak*, but do accept the construction if instead of the D a demonstrative is used.).

(ii) Helmuga gurutzatu zuten txirrindulari **gutxiak** 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.'

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

[5] Etxeberria (2005, 2009) excludes the hypothesis that Basque Qs that combine with the D are adjectives.

[6] The test on the impossibility of co-occurrence of demonstratives and the D-restricted *o kathe* that we apply in Greek cannot be used in Basque because the D and the demonstratives appear in the same syntactic position D.

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

(ii) a. ikasle hau/hori/hura
student dem.sg.proximal/mesial/distal
b. ikasle hauek/horiek/haiek
student dem.pl.proximal/mesial/dista

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

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

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

(17) NP conjunction
[$_{DP}$ [$_{NP}$ Ikasle] eta [$_{NP}$ irakasle]-ak] azterket-a garai-a-n daude.
[[student and teacher]-D.pl.abs] exam-D.sg period-D.sg-in aux.pl
‘The students and teachers are in exams period.’

(18) AdjP conjunction
Maiak [$_{DP}$ [$_{AdjP}$ zaldi haundi] eta [$_{AdjP}$ elefante txiki]-ak] ikusi ditu.
Maia-erg [[horse big and elephant small]-D.pl.abs] see aux.pl
‘Maia has seen the big horses and small cats.’

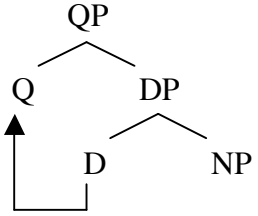
If we were to assume that Basque strong Qs created DPs, this would predict that we should be able to conjoin two strong Qs under the same D. However, this is impossible, as we see:

(19) a. *[$_{DP}$ [$_{QP}$ Ikasle gehien] eta [$_{QP}$ irakasle guzti]-ak] goiz iritsi ziren.
[[student most and teacher all]-D.pl.abs] early arrive aux.pl
‘Most of the students and all of the teachers arrived early (intended).’
b. *[$_{DP}$ [$_{QP}$ Neska bakoitz] eta [$_{QP}$ mutil guzti]-ek] sari bat irabazi zuten.
[[girl each and boy all-D.pl.erg prize one win aux.pl.
‘Each girl and all of the boys won a prize (intended).’

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

We thus conclude that D-restricted Qs do not create referential DPs, like the combination of D with a weak numeral, but a QP. Since D in D_{DR} is a modifier *and* a head, the simplest thing to assume is, as we do, that the D adjoins to the Q. Recall that, as we said, we can envision this as an operation on the lexical meaning of Q. Another option would be to move D from a lower position and adjoin it to Q in a structure [QP[DP[NP]]]:

(20)



In this case we get again a QP since Q would be in a structurally higher position. Hence both movement of D to a higher position, and our direct adjunction analysis allow D to function as a Q-modifier. At present we have no way to distinguish empirically between our direct adjunction of D to Q, and the movement analysis. However, here are two reasons that make the movement analysis less preferred. First, [Q [D NP]] is an ungrammatical structure in Greek and Basque, so we need to stipulate that the movement of D to Q is obligatory. Our direct adjunction analysis does not require such a stipulation. Second, the movement analysis is more syntactic, whereas our adjunction analysis is more akin to a lexical operation on Q.

The thing to remember is that D ends up in a position where it has to take Q, and not NP, as its argument. Because of this misplacement, D cannot function "normally" since there is no set argument. The emergence of D_{DR} then follows as a 'side effect' of avoiding type conflict—a type shifting solution that trades the referential ability of D towards the function of introducing C. Importantly, D_{DR} is performed by a D head. Greek, Basque, Bulgarian, Hungarian, are all languages that have a definite article, and they will employ it for D_{DR}. Why the definite article and not a demonstrative? Because the definite article is a head, whereas the demonstrative is typically a phrase, e.g. compare *the* and *this*: **read the* versus *read this!*). If the D_{DR} is a lexical operation, as we are suggesting, then the head D seems like the most suitable vehicle.

We move on now to the St'át'imcets Salish data.

3 D_{DR} on the NP: St'át'imcets Salish D

St'át'imcets Salish does not have a definite article, but possesses a morphologically *deictic* D (Matthewson 1998, 2008; see Gillon 2006, 2009 for Squamish, another Salish language). This D, we argued in our recent work, can be treated like the Greek and Basque D in D_{DR}. We saw already that such such, D applies to the Q. But in Salish, D can also shift to D_{DR} when applied to the NP argument. In this case, it doesn't function as an iota creating an individual, but rather as a type-preserving function introducing the anaphoric variable C, yielding a contextually salient set of individuals characterized by the [NP ∩ C] property:

(21) D to D_{DR} type-shifting
  (i) D_{DR} rule : When D composes with NP under Q, use D_{DR}.
  (ii) $[\![D_{DR}]\!] = \lambda P_{et}\ \lambda x\ P(x) \cap C(x)$

(22) *i…a* in D_{DR}
  $[\![\text{i...a}]\!] = \lambda P_{et}\ \lambda x\ P(x) \cap C(x)$

As noted in Giannakidou (2004), our D_{DR} works in this case like Chung and Ladusaw's (2003) *Restrict*: it does not saturate the NP argument (i.e. it does not close it under iota), but only restricts it via C. It works, in other words, like an intersective modifier, only the C argument needs to be filled by the context. (Having D_{DR} as an NP modifier is consistent with the idea of a *lower* DP layer, see Szabolcsi 1987, 2009, and more works cited in Alexiadou et al 2008).

As observed by Matthewson (1998, 2001), St'át'imcets equivalents to *every, few, many,* etc. take DP domains, instead of the expected NP:

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

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

This may seem an unexpected structure if we assume, as Matthewson (1998, 2001) does, that the D closes off the NP argument—because the Q takes a type *e* and not the expected *et* domain argument. However, if D in St'át'imcets shifts to D_{DR}, these structures are no longer peculiar, but rather an instance of a systematic grammaticalization of domain restriction (Giannakidou 2004). St'át'imcets then, is a language where all quantifiers take syntactically restricted contextual domains. The Greek, Basque and St'át'imcets data together, then, make a strong case for contextual domain restriction being grammaticalized at least in some languages, and can be used jointly to suggest that quantifier domain restriction can't be just a pragmatic phenomenon. This is, we believe, a good result—and employing a definiteness marker for domain restriction seems natural, since domain restriction is about a weakly familiar property in the context.

Lisa Matthewson (p.c.) points out that our idea that St'át'imcets D applies to the NP and keeps it a predicate of type *et*, may be challenged because this would predict that a DP in St'át'imcets could function as a predicate, contrary to fact. Note, importantly, that D is needed in equational sentences. The examples are taken from Matthewson 2001: (6).

(24) a. kúkwpi7 [kw-s Rose]
chief [D-nom Rose]
'Rose is a chief.'
b. *[ti kúkwpi7-a] [kw-s Rose]
[D.sg chief-D] [D-nom Rose]
'Rose is a/the chief.'
c. nilh s-Rose [ti kúkwpi7-a]
foc nom-Rose [D chief-D]
'It is Rose who is the chief.'

The fact that the St'át'imcets DP cannot be used as a predicate nominal could threaten our analysis only if we assume that D_{DR} applies blindly. But as with any other type-shifting operation, D_{DR} will apply only when motivated as we indicated above— that is, only when it is needed to restrict the domain argument of a quantifier. In this case, it supplies C, yielding the contextually salient set of individuals characterized by the [NP ∩ C] property. In the predicative position, the NP is used as a predicate, and domain restriction is simply not something that applies to a predicate. In the equative example above, notice that the DP is used as a definite description, as expected. So, to recapitulate, in St'át'imcets, the D has two functions, (a) creating referential expressions of type *e*, and (b) type-shifting to D_{DR} when it needs to supply C.

This neat picture, however, has to address Matthewson's claim that the St'át'imcets D is *indefinite,* not definite.[7] We consider here her position, and argue that there are no conclusive

[7] Systematic run-of the-mill definite-guised indefinites are, as far as we know, unattested in literature. The closest analogue that we can think of is *this* in English, which is treated as a specific indefinite in Ionin (2006). We do not trust all the diagnostics used in that work—e.g. one of Ionin's arguments for indefiniteness comes from the existential structure, which is very unreliable diagnostic, as we see later. But even if we accept the indefinite analysis of *this*, the discrepancy between morphology and semantics produces an indefinite that feels extraordinary in the language: *this* is not a routine specific indefinite, but one with the property of *noteworthiness* (Ionin 2006). Our sense from the reported data is that St'át'imcets DPs are more run-of-the-mill DPs.

arguments for indefiniteness of D. On the other hand, since D is morphologically deictic, it makes more sense to treat it as a definiteness element, as we do.

4 Deictic DPs in St'át'imcets Salish

There are three very important properties of the St'át'imcets DP when it is used as independent argument that we believe manifest definite behavior:

i. There is no morphological distinction between a definite and an indefinite article.
ii. The DP contains deictic morphology. Gillon (2006, 2009) generalizes the characterization *deictic* to the D of other languages of the Salish family.
iii. "The deictic features of the DP force **reference to the discourse situation**" (Matthewson 2008: 543). The St'át'imcets DPs are always linked to the *here and now* of current discourse. These DPs are so deeply tied to the actual context that Demirdache (1997) claims that St'át'imcets DPs denote *stages* of individuals (à la Carlson 1977) rather than mere individuals.

The DP is a deictic DP, maybe akin to a demonstrative, and deictics and demonstratives are subspecies of definites. Here is one example that illustrates the demonstrative-like nature of D:

(25) a. sécsec [ti kel7áqsten-s-a ti United.States-a] (Demirdache 1997: (9))
fool D leader-3sg.poss-D D United.States-D
'{The/This chief of the United States is a fool.'
b. √Clinton is a fool, *Carter is a fool

Compare with the English translation with *the/this*. In (25a), the time of being the president of the US and the time of being a fool must be located in the present (the paper is from 1997), and (25a) cannot be used to make a statement about a previous president, as shown by (25b). Demirdache (1997: 10) argues that "the present D sets the place (and time) at which the condition 'is an N' holds of an individual *x* at the discourse location—that is, at the place (and time) of the discourse situation". In other words, the DP cannot be interpreted as a function from contexts to presidents, i.e. it lacks the individual concept reading (Matthewson 1998). This is expected if St'át'imcets DPs is a deictic DP and only gets interpreted with respect to the utterance context and the reference system established in it.

Matthewson (1998: 332-333), further argues that there are no real generic constructions in St'át'imcets and that "DP-adjoined universal quantifiers are used as the closest approximant, but *since the quantifiers always co-occur with a deictic*, […], there is no way of quantifying over a group which is not contextually specified". This is a property that our D-restricted Qs are assumed to have as a class, i.e. they quantify over a presupposed domain, hence it is expected that they will not be able to appear in kind/generic contexts (cf. Etxeberria 2005, Etxeberria & Giannakidou 2009)—and, again, the absence of generic readings with St'át'imcets DPs is consistent with the observation that these DPs are deictic, anchored to the utterance context. The definite article is used generically because it can refer to intensional individuals. But deictic DPs simply cannot refer to intensions.

As a result of their deictic, demonstrative-like nature, St'át'imcets DPs always take the widest scope. We show this first with negation (Matthewson 1999: (21)):[8]

(26) cw7aoz kw-s áz'-en-as [ti sts'úqwaz'-a] kw-s Sophie
neg D-nom buy-tr-3erg [D fish-D] D-nom Sophie
'Sophie didn't buy a fish.' (= 'There is a fish which Sophie didn't buy.')

There is no narrow scope option, as there isn't also for the definite and the demonstrative. Likewise, there is no scope interaction between DPs (Matthewson 1999):

(27) qus-en-ítas [i n7án'was-a smém'lhats] (Matthewson 1999: (29))
shoot-tr-3pl.erg [D.pl two(hum)-D woman]
[i kalhélhs-a míxalh]
[D.pl three(anim)-D bear]
'Two girls shot three bears.'
√ 'A total of two girls shot a total of three bears'
* 'Each of two girls shot three bears, such that the total number of bears shot was six'

Here the two DPs refer to two salient groups: a group of two girls and a group of two bears respectively. Such scope rigidity parallels the one we find with demonstratives: *<u>These</u> two girls shot <u>these</u> three bears*.

The referentially rigid nature of the DP is also manifested in its inability to license donkey full DPs and to receive E-type interpretations.

(28) # tákem i=sqáycw=a wa7 s-tsúwa7 i=ts'qáx7=a (Matthewson 2008: (41))
all D.pl=man=exis impf stat-own D.pl=horse=exis
ama-s-twítas *ti=ts'qáx=a*
good-caus-3pl.erg D=horse=exis
'Every man who owns a horse loves *the horse*'
Consultant's comment: "No, because it's only one horse"

(29) # wa7 tsutánwas k=John kw=s=cuz' kwámem (Matthewson 2008: (45))
impf think D=John D=nom=going.to take
ku=ts'úqwaz' nílh=t'u7 xát'-min'-as
D=fish foc=just want-red-3erg
ku=en=cuz' q'wél-en *ti=ts'úqwaz'=a*
D=1sg.poss=going.to cook-dir D=fish=exis
'John thinks he's going to catch a fish, and he wants me to cook *the fish*'
Consultant's comment: "No, because he hasn't caught it yet"

Hence, the St'át'imcets DP is like deictic pronoun or a demonstrative—both subspecies of definite in Roberts's taxonomy. Demonstratives and pronouns in general require their antecedent to be not simply weakly familiar, but also maximally salient, and with demonstratives, maximal

[8] We do not provide equivalences here, but the reader should note that the use of English demonstratives in the translation would give exactly the same interpretations Matthewson is arguing St'át'imcets DPs to obtain.

saliency translates into reference within the utterance context. In more recent work (Matthewson 2008), Matthewson actually comes up with such an analysis:

(30) $[\![ti...a]\!]^{g,c} = \lambda f_{<<s,e>,<s,t>>}.\ \lambda s : \exists!x\ f((\lambda s.x)(s_0)) = 1$ where $\underline{s_0 \text{ is proximal to the speaker in c}}$. $\iota x\ f(x)(s_0) = 1$ (Matthewson 2008: (47))

We quote from Matthewson (2008: 544): "*ti…a* takes as one of its arguments an NP (e.g. *smúlhats* 'woman'), and presupposes that the salient proximal situation s_0 contains exactly one element satisfying that NP. The entire DP denotes the unique individual which satisfies the NP in s_0." This (which builds on Elbourne's 2005 semantics that uses situations) is pretty much the denotation we would expect from a demonstrative.

What we have seen here is that the St'át'imcets DP pretty much behaves like a definite; hence our claim that D performs D_{DR} is totally consistent with the idea that shift to D_{DR} is another manifestation of definiteness, in particular proerty anaphora. However, Matthewson in her earlier work refrained from characterizing the DP as definite, and proposed instead an indefinite analysis. And despite her analysis above, she still seems to be reluctant to characterize the DP definite in the (2008) paper. We consider next the arguments that made Matthewson hesitant to consider the DP as member of the definiteness family. We see that none of them proves indefiniteness, and some are misleading. Importantly, they are all consistent with the assumption that DP is a demonstrative-like deictic D.

5 No convincing arguments for indefiniteness for the St'át'imcets DP

Matthewson (1998: 27) claims the following:

> "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 saying that the D does not encode definiteness, Matthewson understands 'definite' as 'definite description'. Since St'át'imcets does not have a definite article, of course the DP is not a definite description. But the D has deictic morphology, it is therefore not right to say that "it does not encode definiteness", because morphologically, at least, it does. On the last sentence, we agree: the pie is cut differently in St'át'imcets. But this is not because the St'át'imcets D head does not encode definiteness, but because it encodes a particular form of it, in being deictic and not a run-of-the-mill definite article.

Below, we consider the arguments that made Matthewson favor an indefinite analysis, and show them to be consistent with the definite nature of the DP. In our translations, we will use English demonstratives to bring out the parallelism. We are not going to say that the St'át'imcets DP is *exactly* like an English demonstrative, because English additionally has a definite article, and the pie is indeed cut differently if you have a definite article. We also cannot offer a full characterization of the St'át'imcets DP. All we intend to show is that we get a lot of mileage out of making the reasonable, and most obvious assumption, that the morphologically deictic D is simply what it looks like: a definiteness marker. In none of the cases below will it be

necessary to resort to indefiniteness. Thus, following the morphological lead, one can account for the empirical profile of the DP, without making the extraordinary assumption (that Matthewson does) that morphological definiteness in St'át'imcets systematically associates with indefiniteness.

(i) The DP can translate either as definite or indefinite in a default context.
Consider the default use below:

(31) q'wez-ílc [ti smúlhats-a] (Matthewson 2001: (3a))
dance-intr [D.sg woman-D]
'The/a woman danced.'

Recall that St'át'imcets lacks an indefinite article. Given the morphology of D as deictic and the absence of article distinction, the initial indeterminacy does not prove ambiguity. Rather, it must be taken to suggest that mere novelty-familiarity is not a guiding condition for the distribution of D in St'át'imcets, as one would expect from a language that lacks the morphological article distinction. The deictic DP will thus be used to introduce a discourse referent too—and this is what a *demonstrative* does also: *This woman danced*. Recall Roberts's requirement of weak familiarity: even in the 'novel' case, the woman is ∃-entailed (though not presupposed) in the common ground since it must be proximal to the utterance situation according to Matthewson (2008). If the language gives no choice but a deictic DP, then we must simply say that the demonstrative-like salience is the only relevant presupposition active in St'át'imcets.[9]

Notice the two occurrences of the DP below: (Matthewson 1998: (17)):

(32) húy'-lhkan ptakwlh, ptákwlh-min lts7a [ti smém'lhats-a]
going.to-1sg.sub tell.story tell.story-appl here D.sg woman(red)-D
wa7 ku7 ílal láti7 *[ti smém'lhats-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'

The first sentence introduces a girl, and sets up a context in which the girl is at least weakly familiar (it is ∃-entailed). It is also strongly familiar, since it is also mentioned. In the second sentence, the DP will pick out that girl. So, perhaps one needs to refine the deictic analysis and say that the DP refers not to the current situation (s_0) but to the most local situation, which can be given by the previous sentence as in the context above. At any rate, what is important here is that there is no more evidence for indefiniteness when the DP introduces a referent in the first sentence, than there is in case a name or a pronoun introduces a referent: *I am going to tell you a story about Stella/him*.

(ii) No anaphoric interpretation
Matthewson claims that St'át'imcets DPs do not force anaphoric interpretations: if the determiner *ti…a* were definite, the two DPs below should be expected to pick out the same

[9] This may suggest that the absence of morphological (in)definiteness distinction allows salience to dissociate from anaphora, and we can have familiar (maximally salient) discourse referents being introduced, as well as being referred back to. This will require a refinement of the relation between definiteness and anaphora as is understood in Roberts's work, but we will not undertake this task here.

cougar and give as a result a pragmatically odd sentence. However, the DPs introduce two separate discourse referents and there's no pragmatic oddity.

(33) wa7 lts7a pankúph-a [ti swúw'h-a] múta7 (Matthewson 1999: (56))
be here Vancouver-D [D cougar-D] and
wa7 láku7 líl'wat-a [ti swúw'h-a] t'it
be there Mount.Currie-D [D cougar-D] also
'There is a cougar here in Vancouver and there is also a cougar there in Mt. Currie.'
Consultant's comment: "There are two different cougars."

But this again is no evidence for indefiniteness, since demonstrative and regular pronouns also allow disjoint reference:

(34) a. This$_1$ boy came in. This$_2$ boy sat down.
b. He$_1$ came in. He$_{1/2}$ left right away.

Once again, what this comes to show is that the St'át'imcets DP is like a demonstrative pronoun.

(iii) No uniqueness
Matthewson (1999) argues that St'át'imcets DPs do not carry a uniqueness entailment or presupposition, and can be used to make reference to non-unique discourse referents. English in such contexts uses indefinites, e.g. 'a star appeared' vs. '#the star appeared':

(35) ka hál'h-a [ta nkakúsent-a]
ooc show-ooc [D star-D]
'A star appeared'

Recall that uniqueness is not a defining property of all definites— Roberts argues, for instance, pronouns do not carry uniqueness, and derives uniqueness not as a primitive of definiteness but from gricean principles. Often, even definite DPs don't carry uniqueness (see Ward and Birner especially on this point; uniqueness suspension data are well known in the literature). If, as Roberts argues, pronouns do not carry uniqueness, then the sentence above simply confirms that *ta nkakúsent-a* is like a pronoun. Since uniqueness is *not* a characterizing property of definites as a class, and since pronouns in particular can have non-uniqueness uses, cases like the above need cannot be taken as proof of indefiniteness.

(iv) Existential there sentences
DPs are claimed to appear in the St'át'imcets equivalent of *there*-structures.

(36) wa7 lts7a pankúph-a [ti swúw'h-a] múta7 (from Matthewson 1999: (56))
be here Vancouver-D [D cougar-D] and
'There's D cougar in Vancouver'

Is this evidence for indefiniteness? We are highly skeptical. Recent literature on existentials has made it clear that we need to reconsider the so-called definiteness effect because it appears to be

from illusive to non-existent (McNally 1992, 2009, Francez 2007, 2009). Here are some examples with definites, D-restricted Qs, and a proper name in the English existential:

(37) a. There is Fred in the garden. (McNally 1992: (8))
b. There was the table in the garden.
c. There was each faculty member at the meeting.

At the worst, these may be slightly unnatural, and at best, they are fine sentences of English. These and similar examples make clear that there is no definiteness effect, or at least it is not a robust grammatical phenomenon. Francez (2009), for example, does not even consider it as part of the existential structure that one needs to account for. Crosslinguistically too, we observe definites in the existential.

(38) a. ..seit es das Kind gibt. (Herta Muller, 1994, *Herztier*, p. 72). German
since there the child gives
'Since the child existed'
b. Exi ta pedia ston kipo. Greek
has the children at-the garden
'There are the kids in the garden.'

Greek and German in fact appear to be more liberal than English with definites, so there is crosslinguistic variation in this respect. Pronouns and demonstratives are also possible:

(39) a. There is you in my mind all the time. English
b. Exi afto to pedi sto grafio ke se perimeni. Greek
'there is this boy in the office waiting for you.'

Matthewson (2008) gives an example with a pronoun (2008: (25)) in the existential structure in St'át'imcets too, translated in English as *there is them in the garden*, which is also fine. In view of the fact that various kinds of definites appear in the existential, the prudent thing to say is that the existential cannot be used as a reliable test for indefiniteness, and that the occurrence of St'át'imcets DPs, pronouns is part of the observed crosslinguistic pattern. Instead, Matthewson (2008) reaches the, under reasonable assumptions, strange conclusion that the occurrence of pronouns and DPs in St'át'imcets shows that pronouns are indefinites. We hope that it is clear that such a conclusion is simply arguing backwards.

(v) Sluicing
Our criticism to this argument parallels the one that we just gave for the existential: the premise that definites are excluded from sluicing is simply not true. In addition, it is not clear that we are dealing with sluicing in St'át'imcets, the kind that Matthewson wants to use as a diagnostic.

Matthewson (1999: 108) offers the following sentence as sluicing with a DP antecedent:

(40) wa7 cwíl'-en-as k Henry [ti púkw-a], t'u7
prog look.for-tr-3erg D Henry [D book-D] but
aoz kw-en-s zwát-en stám'-as
neg D-1sg.poss-nom know-tr what-3conj

'Henry is looking for a book, but I don't know which.'

Matthewson (2008) further gives examples with pronouns antecedents (Matthewson 2008: (26), translated as *I paid him, but I don't know who*, and Matthewson 2008: (27) *When I was walking I saw them, but I don't know who*). From these examples, Matthewson concludes "non-familiarity of the pronouns" (2008: 536), because Chung, Ladusaw and McCloskey (CLM 1994) claimed that only indefinites can function as antecedents in sluicing.

We are highly skeptical about this type of argument; first, because as CLM also note, definites (descriptions and names) can indeed function as antecedents for English sluices (for more examples see Romero 1998, Merchant 2001), and second because we are not sure that Matthewson's sentences involve real sluicing, as she herself recognizes "there are language-specific reasons why (26-27) may not actually be cases of sluicing" (Matthewson 2008: 536). Notice first the definite antecedents below:

(41) a. John talked to the students, but I don't know which ones exactly.
b. Abby called Ben an idiot, but I don't know who else. (Merchant 2001: 23)

Similar examples can be given for Greek, Basque and Spanish. Romero (1997) and Merchant (2001) cite even pronoun antecedents in Dutch, Spanish, and Catalan (Merchant 2001: 151: ex. (112)), and Romero presents constructed examples from Spanish and Catalan with pronouns that are less acceptable in English. Romero and Merchant do not conclude that because Spanish, Catalan and Dutch pronouns occur in sluicing, they are indefinites. Rather, they take the more reasonable route of arguing that the occurrence of definite elements in sluicing simply shows that the original indefiniteness generalization needs to be revised.

Finally, not having seen any more sluicing data in Matthewson's work, we do not have an accurate enough picture of what sluicing looks like in St'át'imcets to draw reliable conclusions. This is important because sluicing can be confused with so-called pseudo-sluice (Merchant 1998), which has a cleft structure [who it is/was]:

(42) *Pseudosluice* $=_{def}$ An elliptical construction that resembles a sluice in having only a wh-XP as remnant, but has the structure of a cleft, not of a regular embedded question. (Merchant 1998: (19))

Sluicing appears in Japanese (where we only see a wh-word, like in St'át'imcets) but not in English or Spanish where the cleft must be used:

(43) a. Bob saw those boys, but I don't know {*who/who they were.}
b. Ayer a la noche hable con ellos, pero no se seguro {quienes eran.} Spanish
last night I talked to them but not know sure who they were
'Last night I talked to them, but I don't know for sure who they were.'

The clefted versions are fine with the pronouns, and we suspect that Matthewson's examples are pseudosluices: "In St'át'imcets, wh-words function as predicates, so *it is impossible to prevent the structure from involving a full "who it was" clause* (Henry Davis, p.c.)" (Matthewson 2008: 536). Pseudosluicing is different from sluicing, as Merchant shows, and is much more relaxed with respect to the type of antecedent: definites are perfect with it as we saw. Since definites are

fine antecedents of pseudosluices, and since definites can appear in both sluicing and pseudosluicing, we must conclude that Matthewson's examples show nothing about indefiniteness of the DP.

Finally, Lisa Matthewson (p.c) mentions that St'át'imcets possesses a (rich) set of demonstratives (cf. Matthewson 1998). The existence of demonstrative phrases is by no means a problem for the idea that the D is deictic, since the existence of one deictic element does not preclude the possibility that St'át'imcets has other demonstratives. Typologically, it is very common to possess more than one demonstrative paradigms, encoding e.g. proximity to/distance from the speaker, deixis, etc, so their existence is orthogonal to our suggestion that D is a definintess marker. The crucial factor is the status of the deictic D as a head—a morphosyntactic constraint, in our account, for an element to be able to shift to D_{DR}. The demonstratives that Matthewson mentions are phrasal (and must combine with the D (Matthewson 1998: 229), just like in Greek demonstratives). As expected, these demonstratives cannot combine directly with Qs the way the D does, a fact that supports our account:

(44) a. *Lám-lhkan tu7 wa7 páqwens [iz' tákem i púkw-a]
already compl prog look-tr dem all D.pl book-D
b. Lám-lhkan tu7 wa7 páqwens [tákem iz' i púkw-a]
already compl prog look-tr all dem D.pl book-D
'I already looked at all these books'

To sum up, we found the arguments for indefiniteness for St'át'imcets DP to be either inconclusive, or equally compatible with our idea that the D is deictic, demonstrative-like. We thus conclude that there is no convincing evidence for indefiniteness of St'át'imcets DP. Rather, the evidence we have presented here, and Matthewson's (2008) additional observations, suggest that the DP is a referential, morphologically deictic nominal that exhibits the strictest form of definiteness: dependency to the utterance situation. If this is so, then its ability to type-shift to D_{DR} that we argue for comes as no surprise.

6 Conclusions

What we saw here is that the need to contextually restrict the domain of Qs is syntactically more real in some languages than one would have expected had the phenomenon been only pragmatic. This, of course, does not exclude the possibility that pragmatic domain restriction also happens; but it does show that domain restriction is grammaticalized to a certain extent. Second, D elements—the definite D in particular, as well as the deictic D in St'át'imcets, are systematically used as domain restrictors. In D_{DR}, D type-shifts to apply to the Q itself as a modifier, bringing in the presupposition that there be a weakly familiar property C in the common ground that the domain of Q will intersect with. We suggested that English *each* can have a similar analysis as [D every], and hypothesized that our composition of D_{DR} plus strong Q is the underlying structure in the whole class of presuppositional, veridical Qs. Further examination of this point is clearly needed to establish that this is indeed the case.

In our theory, the ability to type-shift to D_{DR} is a property of D-heads: the definite D or a deictic D. We thus added D_{DR} to the landscape of definiteness, and to the set of type-shifting

rules that a D head may undergo. Although we have undoubtedly not answered all the questions that arise from the link between definiteness, determinerhood and context sensitivity that we argued for, we do hope that our analysis offers solid and testable ideas that will serve as a springboard for future research in this area. We may have taken issue with the specifics of earlier accounts, but our analysis shares with these a common and powerful thread: it emphasizes that Q and D are the places where conditions on the use of variables must be stated (resonating with, among others, Farkas 2002, Giannakidou 2004, Matthewson 1998, 2001, 2008, Gillon 2006, 2009, Martí 2003, 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.

References:

Alexiadou, A., L. Haegemann & M. Stavrou (2008). *Issues in the morphosyntax of noun phrases*. Berlin: Mouton de Gruyter.

Barwise, J. & Cooper, R. (1981). 'Generalized quantifiers and natural language', *Linguistics & Philosophy* 4: 159-219.

Carlson, G. (1977). *Referents to Kinds in English*. PhD dissertation.

Cheng, L. (2009). 'On *every* type of quantificational expression in Chinese', in Giannakidou, A. & M. Rathert (eds.), *QP Structure, Nominalizations, and the Role of DP*, Oxford: Oxford University Press. Oxford Studies in Theoretical Linguistics Series.

Chung, S. & B. Ladusaw (2003). *Restriction and Saturation*, Cambridge, MA: MIT Press.

Davis, H. (1996). 'Wa7 t'u7 Wa7'. Paper presented at the 4th Annual Victoria Salish Morphosyntactic Workshop. University of Victoria.

Demirdache, H. (1997). 'Predication times in St'át'imcets', in Blight, R. & M. Moosally (eds.), *Texas Linguistic Forum 38: The Syntax and Semantics of Predication*. Austin, Texas: University of Texas Department of Linguistics.

Elbourne, P. 2005. *Situations and Individuals*. MIT Press.

--- (2007). Descriptions. *Stanford encyclopedia of Philosophy,* Open access encyclopedia.

Etxeberria, U. (2005). *Quantification and Domain Restriction in Basque*, Doctoral dissertation. University of the Basque Country (UPV-EHU).

---- (2008). 'On quantification in Basque and on how some languages restrict their quantificational domain overtly', in Matthewson, L. (ed.), *Quantification: A crosslinguistic perspective*. Emerald. 225-276.

---- (2009). 'Contextually restricted quantification in Basque', in Giannakidou, A. & M. Rathert (eds.), *QP Structure, Nominalizations, and the Role of DP*, Oxford: Oxford University Press. Oxford Studies in Theoretical Linguistics Series.

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

Etxeberria and Giannakidou, 2009. D as a domain restrictor. In *Perspectives on Contextualism and Relativism.* ed. by F. Recanati, I. Stojanovic, N. Villanueva. Mouton, de Gruyter.

Farkas, D. (2002). 'Varieties of Indefinites', in *Proceedings of SALT 12*, Ithaca, NY: CLC Publications, Cornell University.

von Fintel, K. (1994). *Restrictions on Quantifier Domains*. Doctoral dissertation, UMass.

---- (1997). 'Bare plurals, bare conditionals, and *only*', *Journal of Semantics* 14: 1-56.

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

Francez, I. (2007). *Existential Propositions*. PhD thesis, Stanford.

---- (2009). Existentials, predication, modification. *Linguistics and Philosophy* 32:1.

Giannakidou, A. 1998. Polarity Sensitivity as Nonveridical Dependency. John Benjamins.
Giannakidou, A. (2004). 'Domain restriction and the arguments of quantificational determiners', in *SALT 14*. Dept. of Modern Languages, Cornell University, Ithaca, NY, 110-128.
---- (2009). Negative polarity and positive polarity: licensing, variation, and compostionality. In von Heisinger et al. (ed.), *The Handbook of Natural Language Meaning (second edition)*. Mouton de Gruyter. In press.
Giannakidou, A. & M. Rathert (2009). *QP Structure, Nominalizations, and the Role of DP*, Oxford: Oxford University Press. Oxford Studies in Theoretical Linguistics Series.
Giannakidou, Anastasia, L. Schurcks, and U. Etxeberria: 2009. Domain restriction and the definite determiner: the view from Slavic. Talk presented at the Workshop on NP/DP: Formal descriptions of Slavic Languages. University of Potsdam.
Gillon, C. (2006). *The Semantics of determiners: Domain restriction in Skwxwú7mesh*, Doctoral Dissertation, The University of British Columbia.
---- (2009). 'The semantic core of determiners: Evidence from Skwxwú7mesh', in Gomeshi, J. et al. (eds.), *Determiners: Variation and universals*, Amsterdam: John Benjamins.
Keenan (1996). 'The Semantics of Determiners', in Lappin, S. (ed.), *The Handbook of Contemporary Semantic Theory*, Oxford: Blackwell Publishers. 41-63.
Keenan, E. L. & Stavi, J. (1986). 'A semantic characterization of natural language quantifiers', *Linguistics & Philosophy* 9: 253-326.
Keenan, E. L. & D. Westerståhl (1997). 'Generalized Quantifiers in Linguistics and Logic', in van Benthem, J. & A. G. B. ter Meulen (eds.), *Handbook of Logic and Language*, Elsevier. 839-893.
Lekakou, M. & K. Szendroi. (2009) 'Close apposition with and without noun ellipsis: an analysis of Greek polydefinites'. In: *Studies in Greek Linguistics 29*. Thessaloniki: Institute of Modern Greek Studies. 151-166.
Martí, L. (2003). *Contextual Variables*. Doctoral dissertation, UConn.
Matthewson, L. (1998). *Determiner Systems and Quantificational Strategies: Evidence from Salish*, The Hague: Holland Academic Graphics.
---- (1999). 'On the interpretation of wide-scope indefinites', *Natural Language Semantics* 7: 79-134.
---- (2001). 'Quantification and the nature of crosslinguistic variation', *Natural Language Semantics* 9: 145-79.
---- (2008). 'Pronouns, presuppositions, and semantic variation', in T. Friedman and S. Ito (eds.), SALT XVIII, Ithaca, NY: Cornell : 527-550.
---- (to appear). 'Strategies of quantification in St'át'imcets, revisited', in Gil, K.-H. and G. Tsoulas (eds.) *Strategies of Quantification*, Oxford: Oxford University Press.
McNally, L. (1992). *An Interpretation for the English Existential Construction*, Doctoral dissertation, University of California, Santa Cruz. [Published 1997 by Garland NY]
---- (2009). 'Existential sentences', in Maienborn, C., K. von Heusinger & P. Portner, (eds). *Semantics: An International Handbook of Natural Language Meaning*. Berlin: de Gruyter.
Merchant, J. (1998). 'Pseudosluicing: Elliptical clefts in Japanese and English', in Artemis Alexiadou, Nanna Fuhrhop, Paul Law, and Ursula Kleinhenz (eds.), ZAS Papers in Linguistics 10, 88-112. ZAS, Berlin.
---- (2001). *The Syntax of Silence*. Oxford University Press. Milsark, G. (1977). 'Toward an Explanation of Certain Peculiarities of the Existential Construction in English', in *Linguistic Analysis* 3-1. 1-28.

Montague, R. (1974). 'The proper treatment of quantification in ordinary English', in Hintikka J. et al. (eds.), *Approaches to Natural Language*. Dordrecht: D. Reidel.

Partee, B. H. (1987). 'Noun phrase interpretation and type-shifting principles', in Groenendijk J., et al (eds.), *Studies in Discourse Representation Theory and the Theory of Generalized Quantifiers*. Dordrecht: Foris, 115-43.

Recanati, F. (1996). 'Domains of discourse. *Linguistics & Philosophy* 19:5. 445-475.

---- (2004). *Literal Meaning*, Cambridge: Cambridge University Press.

---- (2007). *Perspectival Thought: A Plea for (Moderate) Relativism*, Oxford: OUP.

Reuland, E. J. & A. Ter Meulen. (1989). *The representation of (in)definiteness*. Cambridge, Mass.: MIT Press.

Roberts, C. (2002). 'Demonstratives as definites', in K. van Deemter & Roger Kibble (eds.) *Information Sharing: Reference and Presupposition in Language Generation and Interpretation*. CSLI Press, Stanford. 89-196.

---- (2003). Uniqueness in definite noun phrases. *Linguistics and Philosophy* 26:287-350.

---- (2004). 'Context in dynamic interpretation', in Horn, L. & G. Ward (eds.), *Handbook of Pragmatics*, Oxford: Blackwell Publishers.

---- (2010). 'Retrievability and definite noun phrases', paper presented at *Chicago Workshop on Semantics and Philosophy*.

Romero, M. 1998. *Focus and Reconstruction effects in wh-phrases*. PhD thesis, U Mass.

Russell, B. (1905). 'On Denoting', in Martinich, A. P. (ed.), 2001, *The Philosophy of Language*, Oxford: Blackwell Publishers. 212-220.

Schwarz, F. (2009). *Two types of definites in natural languages*. PhD thesis, UMass.

Stanley, J. (2002). 'Nominal restriction', in G. Peters & G. Preyer (eds.), *Logical Form and Language*. Cambridge, MA: Oxford University Press, 365-88.

Stanley, J. & Szabó, Z. G. (2000). 'On quantifier domain restriction', *Mind & Language* 15: 219-61.

Stavrou, M. and G. Horrocks. (1989). Clitic and Demonstrative Pronouns in the NP. *Studies in Greek Linguistics*.

Szabolcsi, A. (1987). Functional categories in the Noun Phrase. In *Approaches to Hungarian* 2, I. Kenesei (ed.) 167-190. Szeged: JATE.

---- (2009). *Quantification*. Cambridge University Press.

Ward, Gregory and Betty J. Birner. "Definiteness and the English Existential," in *Language* 71:722-742

Westerståhl, D. (1984). 'Determiners and context sets' In van Benthem, J. and A. ter Meulen (eds), *Generalized quantifiers in Natural Language,* Foris, Dordrecht. 45-71.

---- (1985). 'Logical constants in quantifier languages', *Linguistics & Philosophy* 8: 387-413.

Zwarts, J. (1986). *Categoriale Grammatica en Algebraische Semantiek. Een studie naar negatie en polariteit in het Nederlands*. PhD thesis, University of Groningen.