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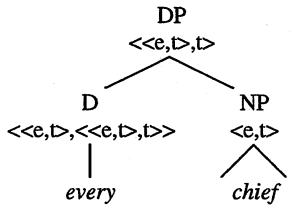
1. Introduction

Determiner quantifiers, such as *every* or *most,* are standardly assumed to take common noun phrases (NPs) as their first argument. The NP corresponds to a one place predicate, of type <e,t>, and the resulting constituent denotes a generalized quantifier, of type <<e,t>,t>. An example is given in (1).

(1)



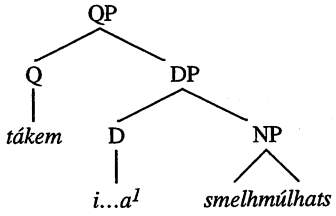
This paper subjects these standard beliefs about determiner quantifiers to cross-linguistic scrutiny. I begin by showing that in St'át'imcets (Lillooet Salish), the creation of a generalized quantifier always proceeds in two steps. Constructions paralleling the typical English case are systematically ungrammatical; the structure of a generalized quantifier is always as illustrated in (2) (see also Jelinek 1995, Matthewson 1998).

(2) a. tákem [i smelhmúlhats-a]
all [DET.PL woman(PL)-DET]
'all the women'

[1] I am very grateful to St'át'imcets consultants Beverley Frank, Gertrude Ned, Laura Thevarge, and Rose Whitley. I am also very grateful to the following people for feedback and ideas: Lisa Cheng, Henry Davis, Rose-Marie Déchaine, Hamida Demirdache, Kai von Fintel, Martin Hackl, Irene Heim, Angelika Kratzer and Susanne Winkler. Thanks also to audiences at the University of British Columbia, MIT, the University of Connecticut, the University of Massachusetts, Amherst, and the International Conference on the Syntax and Pragmasemantics of Noun Phrases, Antwerp. Finally, many thanks to all the participants in my spring 2000 seminar.

UMOP 23: Issues in Semantics, Kiyomi Kusumoto and Elisabeth Villalta (eds.),101-135.

b.



I then provide an analysis of quantificational constructions in St'át'imcets. First, a non-quantificational determiner chooses one plural individual which satisfies the NP predicate (cf. Reinhart 1997, Kratzer 1998 on choice functions). The DP *i smelhmúlhatsa* in (2) thus denotes a plural individual composed of women. Second, a quantifier quantifies over parts of that plural individual. The entire QP corresponds to a generalized quantifier.

The fact that in at least one language, quantifiers cannot enter into the prototypical construction predicted by the standard analysis, raises a cross-linguistic problem. There appears to be significant, and therefore undesirable, variation in the ways in which generalized quantifiers may be constructed in English vs. in St'át'imcets.

In the second half of the paper, I present a way of dealing with this cross-linguistic problem. The most appealing solution would obviously be to have a unified analysis which deals with both languages. Since the St'át'imcets constructions are not capturable within the standard analysis of English, I propose that we reconsider the standard analysis.

The idea to be pursued is that English is a disguised version of St'át'imcets, and that universally, the creation of a generalized quantifier proceeds in two steps rather than one.[2] I begin by discussing the English partitive construction, which is assimilable to St'át'imcets under the simple (though not uncontroversial) assumption that partitive *of* is semantically vacuous. I argue that the 'vacuous *of*' account fares better, both within English and cross-linguistically, than the 'contentful *of*' theory proposed by Ladusaw (1982).

I then turn to discussion of the Partitive Constraint (the requirement that the inner DP should be definite; see Jackendoff 1977 and much subsequent work). I propose a new way of deriving the constraint, according to which violations of it are pragmatically ruled out, because they involve the vacuous use of quantifiers. My version of the Partitive Constraint correctly derives both the English and the St'át'imcets facts, as well as having the advantage of not being a construction-specific constraint. I show that the divorcing of the Partitive Constraint from the partitive construction per se has some desirable results for the analysis of non-partitive quantification.

In the final sections of the paper, I show that my analysis of St'át'imcets quantificational structures can be extended also to English non-partitive quantification. I argue that non-partitive *all* and *most*-phrases contain bare plurals. These quantifiers do

[1] This determiner consists of two discontinuous parts, a proclitic which encodes deictic and number information, and an enclitic ...*a* which attaches to the first lexical item in the phrase. See Matthewson (1998) for details.

[2] This claim relates closely to the large literature on domain restrictions, but is implemented differently from other work in this area. See section 4.2.

not combine directly with a predicate-denoting NP, as the standard analysis would predict, but rather with a phrase of argumental type. This correctly predicts some quite striking facts about the possible interpretations of *all* and *most*-phrases. I conclude by addressing English *every*, potentially the most problematic quantifier for my proposal. The strict version of my 'no cross-linguistic variation in quantification' hypothesis leads to the suggestion that *every* is not really a quantifier, but rather a collective determiner, which may optionally receive its distributivity from elsewhere in the sentence (cf. claims by Beghelli and Stowell 1997).

Insofar as my reanalyses of the various English constructions go through, they lead to a very elegant theory of (the absence of) cross-linguistic variation. Quantifiers now have completely uniform denotations in both languages. The apparently significant difference between English and St'át'imcets reduces to the relatively minor (and independently attested) fact that St'át'imcets possesses obligatory overt determiners and therefore lacks bare plurals.

2. The standard analysis of determiner quantifiers

In this section I briefly outline some standard ideas about quantification.

Common noun phrases (NPs) are assumed to correspond to one-place predicates of type <e,t> (ignoring intensionality, which is not relevant here). An example of a lexical entry is given in (3), using the formalism of Heim and Kratzer (1998).

(3) [[*woman*]] = $\lambda x \in D_e$. x is a woman

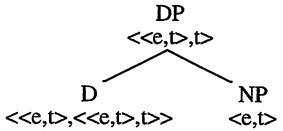
Determiner quantifiers such as *every, most, few* or *no* are assumed to combine with predicative NPs to create generalized quantifiers. Sample lexical entries are provided in (4), from Heim and Kratzer (1998:146).

(4) a. [[*every*]] = $\lambda f \in D_{<et>}$. $\lambda g \in D_{<et>}$. for all $x \in D_e$ such that $f(x) = 1$, $g(x) = 1$

b. [[*no*]] = $\lambda f \in D_{<et>}$. $\lambda g \in D_{<et>}$. there is no $x \in D_e$ such that $f(x) = 1$ and $g(x) = 1$

The syntax / semantics correspondence for determiner quantifiers is summarized in (5). The syntactic category labels 'D' and 'DP' need not concern us unduly, since the semantics is blind to such labels. The crucial point is that there is one element which creates a generalized quantifier from a predicative NP.

(5)



The information provided so far is very basic, and merely summarizes what may be found in any introductory semantics textbook or standard reference on quantification. This is precisely the point; I wish to emphasize the standardness of these assumptions before I proceed to cast doubt on them in the light of data from another language. Some of the many authors who adopt the assumptions outlined here are Barwise and Cooper (1981:162), van Benthem (1986:5), Keenan and Stavi (1986:259), Cooper (1987:73), Chierchia and McConnell-Ginet (1990:410), Partee, ter Meulen and Wall (1990:374),

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Cann (1993:164), von Fintel (1994:2-3), Partee (1995:544), Larson and Segal (1995:276 (in a slightly different framework)), Keenan (1996:42), Heim and Kratzer (1998:146), and de Swart (1998:172).

The analysis outlined so far leads to a cross-linguistic prediction. Assuming that we want the denotation of quantifiers to be constant across languages, then the structures and the general form of the lexical entries given here should have universal validity. Obviously, languages may differ in the subset of quantificational notions which are encoded in single lexical items; we do not, however, expect differences in the general type of quantifiers or in their method of composing with their arguments.

There are at least two problems for the predictions of the standard analysis. The first arises already internal to English, and concerns the partitive construction *(most of the women, many of the women)*. Partitives provide a challenge for the standard analysis because they show that quantifiers which elsewhere combine directly with NPs may also combine with larger constituents which are not obviously of type <e,t>. I will discuss partitives in section 5.

The second problem is a cross-linguistic one: there are languages where the canonical D-quantification construction in (5) is completely impossible. We will examine one such language in the next section.

3. Quantification in St'át'imcets

St'át'imcets (šƛ̓áƛ̓imxəč; a.k.a. Lillooet) is a Northern Interior Salish language spoken in the southwest interior of British Columbia, Canada. The language is endangered; almost all fluent speakers are over the age of 60. Example sentences are presented in the practical orthography of the language (van Eijk and Williams 1981).

3.1. DPs in St'át'imcets: Relevant basic facts

All argumental phrases in St'át'imcets require the presence of an overt determiner. This is illustrated in (6-8); omission of the D from any of the arguments results in ungrammaticality. (As before, the category label 'D' is not crucial. What will be crucial is that the overt elements in the set I am calling 'D' are in an exceptionless one-to-one correspondence with argumenthood.)

(6) a. q'wez-ílc [**ti** smúlhats-**a**]
dance-INTR [**DET** woman-**DET**]
'A woman danced.'

b. * q'wez-ílc [smúlhats]
dance-INTR [woman]
'A woman danced.'

(7) a. léxlex [**i** smelhmúlhats-**a**]
intelligent [**DET** woman(PL)-**DET**]
'Women are intelligent.'

b. * léxlex [smelhmúlhats]
intelligent [woman(PL)]
'Women are intelligent.'

(8) a. wa7 ts'aqw-an'-ítas **[i** t'éc-**a]** **[i** míxalh-**a]**
PROG eat-TR-3PL.ERG **[DET.PL** sweet-**DET]** **[DET** bear-**DET]**
'Bears eat honey.'

b. * wa7 ts'aqw-an'-ítas [t'ec] [i míxalh-a]
PROG eat-TR-3PL.ERG [sweet] [DET.PL bear-DET]
'Bears eat honey.'

Determiners are obligatorily absent on all main predicates, as shown in (9). (9a-b) show that a nominal predicate such as *kúkwpi7* 'chief' obligatorily lacks a D. (9c) illustrates how equational sentences are expressed; the predicate in (9c) is the focus marker *nilh.*

(9) a. kúkwpi7 [kw-s Rose]
chief [DET-NOM Rose]
'Rose is a chief.'

b. * **[ti** kúkwpi7-**a]** [kw-s Rose]
[DET chief-**DET]** [DET-NOM Rose]
'Rose is a / the chief.'

c. nilh s-Rose [ti kúkwpi7-a]
FOC NOM-Rose [DET chief-DET]
'Rose is the chief.'

The evidence so far indicates that in St'át'imcets, arguments are categorially DPs, while nominal predicates are categorially NPs. This corresponds directly to the predictions of Higginbotham (1985), Stowell (1989), Longobardi (1994), among others, and fits in very well what I called the standard analysis above. In terms of Chierchia's (1998) system, this makes St'át'imcets an NP-Predicate language similar to French.

3.2. The syntax of quantification in St'át'imcets

In the discussion to follow I concentrate for reasons of space on strong quantifiers, which in St'át'imcets comprise the universal quantifier *tákem* 'all' and the distributive universal quantifier *zí7zeg'* 'each'. Examples will sometimes be given containing weak quantifiers.

Quantifiers which appear inside arguments always co-occur with determiners. Examples are given in (10).[3]

(10) a. q'wez-ílc **[tákem i** smelhmúlhats-**a]**
dance-INTR **[all DET.PL** woman(PL)-**DET]**
'All (of the) women danced.'

b. úm'-en-lhkan **[zí7zeg' i** sk'wemk'úk'wm'it-**a]** [ku kándi]
give(TR)-1SG.SUBJ **[each DET.PL** child(PL)-**DET]** [DET candy]
'I gave each of the children candy.'

[3] Word order can be ignored throughout; there is some freedom of positioning for quantified phrases, but it does not affect the interpretation in any way. See Demirdache and Matthewson (1995), Matthewson (1998). See also Davis (1999) on word order in St'át'imcets.

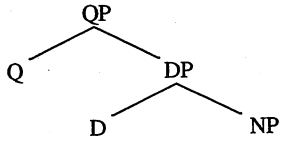
Arguments crucially cannot be of the form [Q NP], as shown in (11). (11b) shows that the quantifier *zí7zeg'*, which allows either a singular or a plural range, is ungrammatical with either a singular or a plural noun, if no D is present. (See also Jelinek (1995) for the absence of the [Q NP] construction in Straits Salish.)

(11) a. *q'wez-ílc **[tákem** smelhmúlhats]
dance-INTR **[all** woman(PL)]
'All women dance(d).'

b. * úm'en-lhkan **[zí7zeg'** sk'úk'wm'it / sk'wemk'úk'wm'it] [ku kandi]
give(TR)-1SG.SUBJ **[each** child / child(PL)] [DET candy]
'I gave each child / each (of the) children candy.'

The first step in an analysis of the St'át'imcets construction is establishing basic facts about its syntax. Demirdache et al. (1994), Matthewson and Davis (1995), and Matthewson (1998) have argued in detail that in constructions such as those in (10), the quantifier takes a DP sister to form a larger constituent. The syntactic structure I adopt is as in (12).[4]

(12)



3.3. The semantics of determiners and quantifiers in St'át'imcets

Now we have a structure which our semantics needs to interpret, namely (12). Beginning with the NP, there is no reason to doubt the standard assumption that NPs denote predicates of type <e,t>. NPs function as one-place predicates in sentences such as (13) (see also (9a) above).

(13) nk'yap [ti t'ák-a]
coyote [DET go-DET]
'The one going along is a coyote.'

The entire quantificational phrase in St'át'imcets corresponds to a generalized quantifier, as argued in detail in Matthewson (1998). This gives us the situation in (14), with question marks indicating what we still need to find out about the semantic types.

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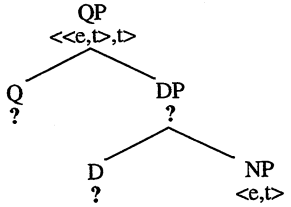
[4] There is one construction not discussed here in which strong quantifiers may appear; this is shown in (i). The quantifier still co-occurs with a determiner, but the order of Q and D is reversed.

(i) qwatsáts [i tákem-a smúlhats]
leave [DET.PL all-DET woman]
'All the women left.'

Analysis of this construction goes beyond the bounds of this paper.

(14)



Recall that in the standard theory which accounts for English, determiner quantifiers take an argument of type <e,t>, and create a generalized quantifier. This is clearly not the case in St'át'imcets. There are two steps involved in the transformation from an NP predicate to a GQ. Moreover, the Q takes a DP, not an NP, as its sister. Recall that DPs never function as predicates in St'át'imcets. This is shown in (15), repeated from (9c) above.

(15) * [ti kúkwpi7-a] [kw-s Rose]
[DET chief-DET] [DET-NOM Rose]
'Rose is a / the chief.

During the remainder of this section I will present my analysis of the St'át'imcets facts, returning to the cross-linguistic problem in section 4.

3.3.1. Choice function determiners, plus quantifiers

My proposal begins with an independently-required analysis of St'át'imcets Ds. As argued in detail in Matthewson (1999), St'át'imcets determiners uniformly introduce variables over choice functions (see Reinhart 1995, 1997, Winter 1997, Kratzer 1998, among many others).[5] In other words, these determiners apply to NPs of type <e,t> and choose one (singular or plural) individual from the set denoted by the NP predicate. A simple example is given in (16).

(16) a. q'wez-ílc [ti smúlhats-a]
dance-INTR [DET woman-DET]
'A woman danced.'

b. danced (f(woman))

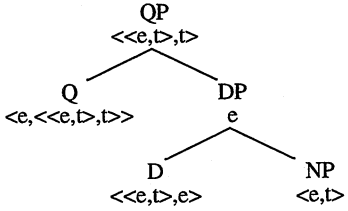
c. Paraphrase: The woman who is chosen from the set of women by the contextually salient function f danced.

In (16b), f is a variable over choice functions. It remains free and receives a value from the context, as in Kratzer (1998).

DPs in St'át'imcets thus denote singular or plural individuals (on plural individuals, see Link 1983, among many others). This means that quantifiers in St'át'imcets must be taking individual-denoting phrases as their first argument. The quantifiers quantify over parts of the individual denoted by their sister DP. We can thus fill in the question marks as follows:

[5] There is one determiner in St'át'imcets which does not introduce variables over choice functions; this D is irrelevant to the current discussion since it does not co-occur with quantifiers.

(17)



The lexical entries which go along with this analysis are given and discussed in (18-22).

(18) Nouns

smúlhats 'woman':

[[*smúlhats*]] = $\lambda x \in D_e$. x is a woman

(19) Plural morphology (pluralization operator; Link 1983)

smelhmúlhats 'women':

[[*smelhmúlhats*]] = [[*]] ([[*smúlhats*]])

The pluralization operator * takes any one-place predicate over individuals f, and adds to its extension all the plural individuals composed of members of the extension of f. $\oplus$ is a mereological sum operator.[6,7]

[[*]] = $\lambda f \in D_{<et>}$. $\lambda x \in D_e$. [f(x) = 1 or $\exists y \exists z$ [x = y$\oplus$z and [*(f)](y) = 1 and [*(f)](z) = 1]]

(20) Singular determiner

The determiner *ti...a* is defined only for application to predicates over singular individuals. It returns one of the individuals which satisfy the predicate. (The index on 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>.)

[[*ti...a*$_k$]]^g = $\lambda f \in D_{<et>}$ and $\forall x \forall y$ [(f(x) & f(y) & y$\leq$x) $\rightarrow$ x=y] . (g(k))(f)

(21) Plural determiner

The determiner *i...a* is defined only for application to predicates over plural individuals. It returns one of the individuals which satisfy the predicate.

[[*i...a*$_k$]]^g = $\lambda f \in D_{<et>}$ and $\exists x \exists y$ [(f(x) & f(y) & y$\leq$x & x$\neq$y] . (g(k))(f)

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[6] For any x $\in$ D, y $\in$ D, x$\oplus$y is the unique z $\in$ D such that:
i. $\forall u$ [[u$\leq$x $\vee$ u$\leq$y] $\rightarrow$ u$\leq$z]
ii. $\forall z'$ [$\forall u$ []u$\leq$x $\vee$ u$\leq$y] $\rightarrow$ u$\leq$z'] $\rightarrow$ z$\leq$z']
$\leq$ is a reflexive, transitive and antisymmetric 'part of' relation.

[7] I adopt Link's * operator for convenience; nothing crucial hinges on the fact that I include singular individuals in the extension of plural predicates (as does Schwarzschild 1991, 1996), rather than excluding them (as do Hoeksema 1983, Chierchia 1995, 1998).

(22) Universal quantifier

The universal quantifier *tákem* takes an individual and a predicate, and specifies that every subpart of that plural individual satisfies the predicate.[8]

$[[\ \textit{tákem}\ ]] = \lambda x \in D_e\ .\ \lambda f \in D_{<et>}\ .\ \forall y \leq x\ [\ [^*(f)](y) = 1]$

Putting everything together, the sentence in (23a) ends up with the meaning paraphrased in (23b).

(23) a. q'wez-ílc [tákem i smelhmúlhats-a]
dance-INTR [all DET.PL woman(PL)-DET]
'All the women danced.'

b. [[*q'wezílc tákem* i_k *smelhmúlhatsa*]]^g = 1 iff for all y which are parts of the plural individual composed of women chosen by the choice function g(k), y danced or the parts of y danced.

Summarizing the results so far, we have seen that in St'át'imcets, the creation of a generalized quantifier proceeds in two steps rather than one. First, a determiner creates a phrase of argumental type (type e); second, a quantifier quantifies over parts of the individual denoted by the DP. The intermediate step, in which a plural individual is chosen from the plural predicate NP, corresponds intuitively to the oft-discussed process of domain restriction in quantificational constructions (see for example von Fintel 1994, and many references contained therein). In section 4.2 below I discuss the relationship between choice function determiners and resource domain variables.

The specifics of the analysis of St'át'imcets presented in this section are independent of the inescapable observation that the creation of a generalized quantifier in this language proceeds in two steps. Consequently, the cross-linguistic conclusions drawn in later sections are also independent of the specifics of the analysis of St'át'imcets given here. Either part can be adopted without necessarily having to adopt the other. I do believe, however, that there is very good evidence for a choice function approach to St'át'imcets determiners; indeed, I can see no other way to account for the St'át'imcets data. Some arguments for the choice function analysis are outlined in the following subsection.

3.3.2. Why we need the choice function analysis

In this section, I will briefly summarize the reasons why a choice function analysis of the St'át'imcets determiners is required, independently of the [Q D NP] constructions discussed above. For more detailed argumentation, see Matthewson (1999).

The crucial data have to do with distributive readings. In English, sentences containing quantified noun phrases and indefinite DPs allow distributive readings.

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[8] The lexical entry given here for the universal quantifier *tákem* will make the wrong predictions in the same ways that a ∀-analysis fails for English *all*. For example, we do not account for the fact that *tákem* is compatible with the collective predicate 'meet':

(i) tákem i sqáycw-a gew'p
all DET man-DET meet
'All the men met.'

These are well-known problems in writing a lexical entry for 'all', which go beyond the aims of this paper. See Link (1983), Dowty (1987), Brisson (1998), among others.

Examples are given in (24).

(24) a. Every man loves a woman.
Distributive reading: Each man loves a (possibly different) woman.

b. Most women brought a cat along.
Distributive reading: Most women x are such that x brought a (different) cat.

These readings are easily generated under an analysis of indefinites and quantificational noun phrases as generalized quantifiers; if the quantified phrase in subject position takes wide scope over the object indefinite at LF, the distributive reading follows automatically:

(25) [[*every man*$_1$ *a woman*$_2$ t_1 *loves* t_2]] = 1 iff for all x $\in$ D_e such that x is a man, there exists some y $\in$ D_e such that y is a woman and x loves y

Distributive readings thus come 'for free' under a standard analysis of the semantics of quantifiers and indefinites. However, these readings are systematically absent in St'át'imcets, as illustrated in (26).

(26) a. [zí7zeg' smelhmúlhats] met'-en-ítas [ta máw-a]
[each woman(PL)] pet-TR-3PL.ERG [DET cat-DET]
'Each woman petted a cat.'

Accepted in context: Each woman petted the same cat.
Rejected in context: Each woman petted a different cat.

b. # [tákem i sqáyqeycw-a l-ti tsítcw-a] melyíh-s-as
[all DET.PL man(PL)-DET in-DET house-DET] marry-CAUS-3ERG
[ti emh-ál'qwem'-a syáqtsa7][9]
[DET good-appear-DET woman]
'All (the) men in the building married a beautiful woman.'

Consultant's comment: "Doesn't make sense. How can they all marry one woman?"

The unavailable readings in (26a,b) have narrow scope for the object. Therefore, the problem is not that St'át'imcets has 'frozen scope' or 'scope according to S-Structure position'. The absence of the relevant reading is also not due to obligatory wide scope of the object DP at LF; I show in Matthewson (1999) that no two DPs in St'át'imcets ever display scopal interactions of the type exemplified in (24) above.[10]

Perhaps the absence of distributive readings could be explained by saying that the DPs in question are really definite? If the DPs were definite, we would be able to explain the lack of distributive readings, while doing away with choice functions. However, in Matthewson (1999) I show that a definite analysis of the relevant DPs is untenable, since they can appear in all contexts which are restricted to indefinites (such as existential constructions).

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[9] Different lexical items are used for 'woman' in examples throughout the paper. This is merely a dialect difference.

[10] Except for when the non-choice function determiner is used; see footnote 6.

The behavior of the St'át'imcets DPs can easily be accounted for under a choice function analysis, either a Kratzerian analysis where the function variable remains free and receives a value from context, or an existential closure analysis where the existential quantifier takes obligatory wide scope. The two versions of choice function theory which correctly predict the absence of distributive readings are illustrated in (27a) and (27b) respectively. (The empirical differences between these two approaches are subtle; see section 5.1 below for some discussion.)

(27) All the men love a woman.

a. leaving the choice function variable free:

$\forall x$ [man (x) $\rightarrow$ loves (x, f(woman))]
'Every man loves the woman who is chosen from the set of women by the contextually given choice function f.'

b. existential closure with widest scope:

$\exists f$ [$\forall x$ [man (x) $\rightarrow$ loves (x, f(woman))]]
'There is a way of choosing a woman from the set of women, such that every man loves that woman.'

The distributive reading we want to rule out would be incorrectly generated by a choice function approach which allowed choice function variables to be existentially closed with narrow scope (as in for example Reinhart 1997, Winter 1997). This is shown in (28).

(28) $\forall x$ [man (x) $\rightarrow$ $\exists f$ [loves (x, f(woman))]]
'For every man x, there is a choice function f such that x loves the woman that f chooses from the set of women.'

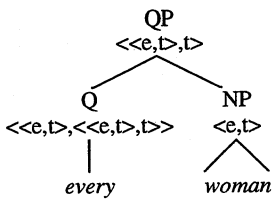
In Matthewson (1999) I argued for the widest-scope existential closure analysis in (27b), whereas above in section 3.3.1 I presented a free-variable analysis as in (27a). It turns out that a free-variable analysis is required, at least as an option, once quantificational constructions are taken into consideration. I will return to this very briefly in section 5.1 below.

4. What about English?

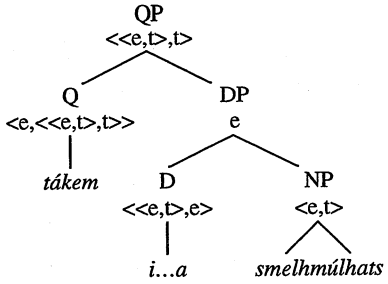
In previous sections we have seen that in English, a generalized quantifier is created from a predicative NP in one step, but in St'át'imcets, there are always two steps involved. I have labeled these two steps D and Q. The D introduces a choice function which chooses an individual from the set denoted by the NP. Then, the Q quantifies over the parts of that individual, creating a generalized quantifier.

The cross-linguistic difference is summarized in (29).

(29) a. English:



b. St'át'imcets:



Variation of this sort is undesirable, as it means that there is no uniformity of semantic type for quantifiers across languages. More importantly, we have no explanation for why the canonical English construction in (29a) should be completely unavailable in St'át'imcets. The problem to be addressed in the remainder of the paper is how to reconcile the behavior of quantifiers in these two languages.

One possible method for dealing with the problem involves searching for independent reasons why the canonical English construction is unavailable in St'át'imcets. This method is adopted in Matthewson (1998). There, I claimed that English and Salish exemplify opposite settings of a parameter dealing with possible determiner denotations. One of the consequences of the Salish setting of the parameter is that quantificational elements are barred from occupying the D position. Hence, quantifiers have no option but to appear as sisters to an entire DP.

This general method also underlies much of the other work that has been done on non-Indo-European quantificational systems. For example, both Jelinek (1995) and Baker (1995) propose parameters which as one of their consequences derive the absence of English-like quantificational structures, in Straits Salish and Mohawk respectively.

The parametric approach weakens the null hypothesis that languages do not vary at all in matters as fundamental as the presence or absence of determiner quantification. Even if the absence of determiner quantification is derived as one consequence of a parameter rather than being independently stipulated, it still leaves us in a conceptually less desirable situation than if there were no variation at all.

Here I would like to pursue the null hypothesis instead. Rather than seek for parametric differences which could explain the St'át'imcets system, let us try to find a common analysis for both languages. Since we have seen that the St'át'imcets system is not reducible to the standard analysis of English, I propose taking the opposite tack: let us use the St'át'imcets facts as an invitation to re-examine English. Let us explore the possibility that the standard analysis is wrong, and that English is more like St'át'imcets than it at first appears.

4.1. A proposal to reanalyze English

The idea to be explored in the rest of this paper is as follows. Assume that in getting from an NP predicate to a generalized quantifier, there are always two steps. We will call these two steps D and Q. The function of D is to 'narrow down' the domain of the quantifier from the original set provided by the NP. The function of Q is to quantify

over elements in that narrowed down domain.

For English, which superficially looks quite unlike Salish, a certain amount of reanalysis of familiar phenomena will be required. The reanalyses range from the highly plausible, and well-motivated on English-internal grounds, to the somewhat more controversial. However, it should be borne in mind that the analysis of St'át'imcets outlined in previous sections was virtually forced on us by the syntactic facts and by independent evidence about the nature of determiners in that language. We therefore have very strong evidence that quantification works like this in at least one language. Consequently, the null hypothesis is that English is the same. My intent is to see how far we can push this null hypothesis.

In following sections I will examine in turn the English partitive construction (section 5), phrases of the form *all* NP and *most NP* (section 6), and *every*-phrases (section 7). Before embarking on these case studies, I will briefly relate my proposal to earlier work which postulates a two-step process involving domain-narrowing.

4.2. Resource domains

In my summary above of the standard analysis of English, I made the simplifying assumption that the first argument of a quantifier is provided by its NP, and that the quantifier quantifies over the entire set denoted by that NP. However, it has been noted by many people that the domain of a quantifier is actually contextually restricted. This general idea is in fact hundreds of years old; see discussion and references provided in Kratzer (1978:229-230). See also Westerstahl (1984), Neale (1990), Lewis (1973, 1986), among many others. Here, I will concentrate on a recent explicit analysis of domain restrictions, that of von Fintel (1994).

Consider the following example. The scenario is that the speaker is relating the experiences of last night when a group of people went out for pizza.

(30) Everyone had a good time. (von Fintel 1994:28)

Von Fintel argues (1994:29) that 'what is said by [30] is literally the narrower claim that every member of the group last night had a great time ... The contextually calculated restriction to members of our group is part of the truth-conditions.' He argues that each quantified phrase must have its own domain restriction (i.e., a global domain restriction will not work), and proposes that 'the context-dependency is located in each determiner itself ... the locality of the contextual restriction is captured by interpreting the determiner relative to a contextually supplied set which is intersected with the common noun argument' (1994:30).

Von Fintel's theory thus involves a two-step process in the creation of a generalized quantifier. The semantics of a quantifier like *every* is redefined, so that it will first intersect the set denoted by its NP sister with another contextually-determined set, provided by a resource domain variable. The quantifier will then take the resulting 'narrowed down' domain as its first argument, rather than the entire set denoted by its NP sister.

The conceptual similarity is clear between von Fintel's proposal and mine. My basic claim that a two-step process is universally present thus receives support from the fact that a two-step process has already been argued for on English-internal grounds. However, the two approaches involve different implementations (a resource domain variable which is a phonologically null predicate, vs. a choice function determiner which

narrows the domain and also converts the NP predicate into an argumental type). My idea is to say that St'át'imcets provides us with overt evidence about the nature and the position of the domain restriction of quantifiers. My proposal will also unify the domain restriction present in ordinary quantification with the function of the overt definite determiner inside partitives.[11]

In the next section I begin my attempt to assign a common analysis to English and St'át'imcets quantificational structures.

5. The partitive construction

The partitive construction, illustrated in (31), poses an English-internal challenge for the standard analysis of quantifiers. In partitives, a quantifier combines not with a common noun phrase, but with *of the* NP.

(31) Most / many / some / no / three / few / all / both **of the** chiefs spoke.

We would like quantifiers to have the same denotation in all syntactic environments, yet in the partitive it is not obvious that the quantifier is combining with a one-place-predicate-denoting sister. The problem is described by Ladusaw (1982:232-233):

> Quantifier determiners like *some* and *every* denote functions which take sets as their arguments ... Assuming that quantifier determiners have the same denotations in Partitive NPs as they do in simple NPs, we are faced with a technical question: how can the family of sets that the Partitive Phrase NP denotes be reduced to an appropriate argument for the determiner, a set?

Ladusaw's (1982) solution, which builds on that of Barwise and Cooper (1981), is to say that partitive *of* ensures that the Q receives the right type of input. It works as follows. First, the DP inside the partitive must denote an individual, where 'individuals' are defined as the principal filters generated by atoms:

(32) For atoms x of the set of possible CN denotations, I_x (the individual generated by x) is $\{p \in D_{CN}: x \subseteq p\}$.

For example, the name *John* denotes the individual I_j, which is the set of all sets which contain the atom {j}. Singular definites such as *the woman* similarly denote individuals in models where their presuppositions are met. For plurals, Ladusaw utilizes the notion of a group, a non-empty, non-singleton set of entities. The phrase *John and Mary* denotes the individual which is the set of all sets containing the group consisting of John and Mary. *The women* denotes the set of all sets containing the unique contextually relevant group of women.

Partitive *of* then converts the individual denoted by the DP into a set of atomic individuals. In (33), g is a 'consists of' function which takes any group-level individual and returns the set of atoms corresponding to the generator of the principal filter. *Of the women* is thus the same type of object as the NP *women,* but instead of denoting the set of all women, it denotes the set of all contextually relevant women.

(33) $[[of\ NP]] = g(a)$ if $[[NP]] = I_a$, undefined otherwise.

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11 Recently, von Fintel has also proposed unifying resource domain variables with choice function determiners; see for example handouts from lectures given in Prague, 1998.)

Ladusaw's analysis of *of,* like Barwise and Cooper's forerunner of it, is designed to ensure that the quantifier receives an input of type <e,t>. This allows the denotation of quantifiers to remain uniform, a desirable result. Ladusaw himself notes, however, (p. 239) that there is no independent explanation of why the 'consists of' function g should be necessary.

Here is an alternative view. Suppose we reject the assumption that the [Q NP] structure is 'basic' in the sense that it reveals the true nature of quantifiers. We thus reject the assumption that partitives should be assimilated to the non-partitive construction. Based on observations about St'át'imcets, let us entertain the idea that quantifiers actually prefer to receive an input which has already been turned operated on by a determiner. Then, all that needs to be said about English partitives is that *of* is semantically vacuous.

Once *of* is semantically vacuous, we have a structure which directly parallels the St'át'imcets structure. The English partitive can be analyzed exactly as was outlined for St'át'imcets in section 3.3 above. The DP denotes an individual chosen by a choice function, and the quantifier quantifies over parts of that individual.[12] We don't need to talk about principal filters, and we don't need to include a 'consists of' function.

The semantic vacuity proposal obviously raises the question of why the *of* is there at all, and I do not have an answer to this at this stage. Angelika Kratzer suggests (p.c.) that a Case requirement could be involved. She notes that in German, there are partitives containing *von* 'from', which require dative case on the definite determiner *(von* is a dative-inducing preposition), but there are also partitives which lack *von,* and in these, genitive case is required. The claim that case is what requires *of* to appear correlates well with the fact that St'át'imcets, which lacks an *of*-like element in partitives, lacks overt case marking. (See work by Martina Wiltschko (in prep.), claiming that Salish languages lack structural Case entirely.)

An interesting problem is raised by some cases in which *of* is optional in English:

(34) a. all (of) the women
b. both (of) the women
c. half (of) the women

Neither the semantic vacuity analysis nor Ladusaw's analysis have obvious answers to why *of* should be optional here. The vacuity analysis is supported by the observation that there does not seem to be any meaning difference between the *of* versions and the *of*-less versions;[13] however, the question of why *of* is allowed to be optional only for these quantifiers is unexplained. Under Ladusaw's analysis, the *of*-less versions would have to contain a null element which performs the same function as overt *of;* it is unclear why other quantifiers do not allow the null version of *of.*

The fact that *all* and *both* allow *of* to drop could actually be encouraging for the 'contentful *of*' theory, in light of recent work by Brisson (1998). Brisson argues that *all* and *both* are not true quantifiers, but rather modifiers which make an adjustment to the meaning of a definite DP. Briefly, it works as follows. Sentences containing definite plural DPs are analyzed as in (35). Cov_k is a contexually-specified cover of the universe of discourse. All elements of Cov_k which are also subsets of the denotation of *the boys*

[12] This is an individual of type e, not an 'individual' in Ladusaw's sense, which is a generalized quantifier.

[13] Reed (1996:165) notes that 'There is general agreement in the literature that such expressions are interpreted identically, e.g. *both the boys* is equivalent to *both of the boys* (Hogg 1977; Westerstahl 1984).'

have to satisfy the predicate *hungry.*[14]

(35) a. The boys are hungry.
b. $\forall x [x \in [[Cov_k]] \& x \subseteq [[the.boys']] \rightarrow x \in [[hungry']]$

If a value for Cov_k is chosen in which one of the boys appears in the same subset as a non-boy, the prediction is that that boy will not have to be hungry. This accounts for the fact that definite plurals allow exceptions; (35a) can be judged true if not all of the boys are hungry.

When *all* attaches to a definite subject DP, its effect is to ensure that such 'ill-fitting' covers are ruled out. When *all* is present, the only covers under consideration are those in which every boy appears in a subset consisting only of boys. Thus, the formula in (35b) also provides the truth conditions for *All the boys are hungry,* but in this case, no exceptions are allowed.

Brisson's claim that *all* and *both* are not true quantifiers accounts for the fact that they can float, while true quantifiers such as *every* or *most* cannot float. It also predicts that *all* and *both* allow *of* to be dropped; since they are merely modifiers, they do not require inputs of type <e,t>, unlike the true quantifiers. Brisson in fact claims that the *of* in *all* and *both*-phrases is there, optionally, merely by analogy with other partitive constructions (1998:21).

This is not the place to enter into detailed discussion of Brisson's proposals. I shall merely note that *of* is optional also with *half,* which does not float and presumably would not fall into the 'modifier' category with *all* and *both.*[15] My intuition is that the presence or absence of *of* in (34a-c) (as well as elsewhere) is a fairly superficial fact, and that the fact that *of* is droppable is consistent with the vacuity hypothesis.[16] In the remainder of this subsection I shall point out some empirical and conceptual problems for the contentful *of* theory.

The contentful *of* theory as it stands mistakenly generates ungrammatical partitive constructions. If *of* turns a definite DP into a set-denoting predicate, we predict that any set-taking D or Q could appear upstairs in a partitive, which is incorrect (this is pointed out by Hoeksema 1996:8). For example, why are the constructions in (36) bad?

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[14] For any set A, C is a cover of A iff:
i. C is a set of subsets of A
ii. Every member of A belongs to some set in C.
iii. Ø is not in C. (Schwarzschild 1996:69)
See work by Schwarzschild (1991, 1996) on plurals, on whose ideas Brisson draws.

[15] Thanks to Henry Davis (p.c.) for drawing this to my attention. Marcin Morzycki (p.c.) points out a possible contrast between *half the* NP and *half of the* NP. Suppose that a bunch of women are sitting in a room, and there is a draft coming under the door. The bottom half of each woman is cold, but the top half isn't. It is marginally possible to say (ia), but impossible to say (ib).
(i) a. Half of the women are cold.
b. Half the women are cold.
I am not sure about the judgment for (ia); I strongly prefer to say *Half of each woman is cold.* However, this point certainly deserves further investigation.

[16] This claim receives indirect support from dialect variation, albeit in a slightly different construction. In my dialect, *a couple books* is ungrammatical and *of* is required, whereas in varieties of American English the *of*-less version is fine.

(36) a. * the of the women
b. * these of the women
c. * no of the women
d. * every of the women

The contentful *of* theory runs into further problems when we consider St'át'imcets. In this language, quantifiers appear to take individual-denoting sisters directly as arguments. In order to keep the general semantic properties of quantifiers constant across languages, the contentful *of* theory would have to say that in St'át'imcets, there is a null version of 'of' in every quantified phrase. Apart from the fact that this raises the question of why *of* must be overt in English but may be null in St'át'imcets, it leaves the core fact unexplained that quantifiers cannot directly combine with one-place predicates in St'át'imcets. If (37a) is good, showing that *tákem* 'all' can take an input of type <e,t>, then why is (37b) bad? Similarly, if (37c) is good, why is (37d) bad?

(37) a. tákem **Ø** i smelhmúlhats-a
all **of** DET.PL woman(PL)-DET
'all of the women'

b. * tákem smelhmúlhats
all woman(PL)
'all women'

c. cw7it **Ø** i smelhmúlhats-a
many **of** DET.PL woman(PL)-DET
'many of the women'

d. * cw7it smelhmúlhats
many woman(PL)
'many women'

The basic problem with Ladusaw's theory is that it makes *of the* NP parallel to a plain NP. At the level where the upstairs Q attaches, there is no way to look inside the predicate-denoting sister to see whether it is a plain NP or an *of*-phrase. This predicts complete parallelism between the two types of potential sisters, a prediction which breaks down in the ways outlined above.

According to my proposal, on the other hand, partitives are clearly different from non-partitive DPs such as *the women.* Quantifiers such as *all* take individual-denoting DPs as sisters, while determiners such as *the* take one-place predicates as their arguments. The reason why (37b) and (37d) are bad is that *tákem* and *cw7it* are quantifiers which expect a DP sister.[17]

To summarize, in this section we have seen that if quantifiers are to have a uniform denotation, both language-internally and cross-linguistically, there are two possible approaches to take. The first is to claim that partitive *of* converts a generalized quantifier into a set-denoting predicate. Under this proposal, St'át'imcets quantified phrases contain a null version of *of.* The second is to claim that partitive *of* is vacuous, and that quantifiers uniformly function as in the analysis of St'át'imcets given in section 3.3 above. The contentful *of* theory over-generates some non-existent constructions in

[17] For discussion of why *all women* is good in English, see section 6 below. Unfortunately, I do not have time to talk about weak quantifiers in any detail, but a similar story will also be told about English *many women.*

both English and St'át'imcets, while the vacuous *of* theory accounts for all of the facts, with the only open issue being the exact syntactic requirement that *of* is fulfilling. Our conceptually desirable hypothesis, that English is like St'át'imcets, can be upheld so far.

In the next subsection I turn to discussion of the Partitive Constraint. We will see that the vacuous *of* theory has some advantages here, too.

5.1. The Partitive Constraint

The Partitive Constraint is a requirement that the inner DP in a partitive be definite; examples are given in (38). See Jackendoff (1977), Selkirk (1977), Abbott (1996), Reed (1991, 1996), Wilkinson (1996), de Hoop (1997), among others.

(38) a. * many of some women
c. many of the women
d. * all of many men
e. all of the many men
f. many of his friends
g. * one of both books
h. one of the two books

Ladusaw's analysis derives the Partitive Constraint from the semantics assigned to *of*: the 'consists of' function g which *of* denotes is defined only for inputs which denote individuals. This rules in definite DPs, including genitive DPs and *the two* NP, while ruling out strongly or weakly quantified phrases. If there were a null 'of' in St'át'imcets quantified phrases, we would expect the PC also to hold in St'át'imcets. In this section I first address the status of the PC in St'át'imcets, and then show how my *of*-less analysis can account for the facts.

St'át'imcets does not have a definite / indefinite distinction in its determiner system (Matthewson 1998, 1999). Therefore, we cannot tell simply by looking at the form of the DP contained within a quantified phrase whether there is a PC in effect. To determine whether there is an interpretive restriction on the DPs contained within partitives, we must compare the possible interpretations of plain (non-quantified) plural DPs with those of DPs inside partitives.

A non-quantified plural DP may, but need not, pick out the entire contextually salient set of individuals in a given discourse context. The availability of a non-maximal interpretation is illustrated in (39), which is judged to contain no contradictions.

(39) q'em'pwi xw7útsin i sk'wemk'úk'wm'it-a wa7 s-7ats'x-s-túm
ten PL four DET.PL child(PL)-DET PROG STAT-see-CAUS-1PL.SUBJ
'We are looking after 14 children.'

wa7 q'7-áol'men **i** **sk'wemk'úk'wm'it-a**;
PROG eat-want **DET.PL** **child(PL)-DET**
cuystwí malh áz'-cit ku s-q'a7
let's ADHT buy-APPL DET NOM-eat
'DET.PL children are hungry. Let's buy some food.'

cw7it-7úl! cw7ay t'u7 kw-s tákem i sk'wemk'úk'wm'it-a
many-too NEG just DET-NOM all DET.PL child(PL)-DET
wa7 q'7-áol'men
PROG eat-want
'That's too much! Not all the children are hungry.'

Now consider (40), where the DP *i sk'wemk'úk'wm'ita* is inserted into a quantified phrase. Here, the speaker is perceived as having contradicted herself.

(40) q'em'pwi xw7útsin i sk'wemk'úk'wm'it-a wa7 s-7ats'x-s-túm
ten PL four DET.PL child(PL)-DET PROG STAT-see-CAUS-1PL.SUBJ
'We are looking after 14 children.'

wa7 q'7-áol'men **tákem** **i** **sk'wemk'úk'wm'it-a;**
PROG eat-want **all** **DET.PL** **child(PL)-DET**
cuystwí malh áz'-cit ku s-q'a7
let's ADHT buy-APPL DET NOM-eat
'All the children are hungry. Let's buy some food.'

cw7it-7úl! tsukw t'u7 q'em'p i sk'wemk'úk'wm'it-a wa7 q'7-áolmen
many-too only just ten DET.PL child(PL)-DET PROG eat-want
'That's too much! Only 10 children are hungry.'

The fact that the final sentence gives rise to a contradiction may appear unremarkable; after all, we used a universal quantifier in the second sentence. However, the data are significant for the following reason. Fundamental principles of uniformity and compositionality require that the meaning of a DP when by itself be the same as the meaning of that DP when it is contained within a larger phrase. We have seen that the DP in (39) can pick out a non-maximal set of children. If the same DP were allowed to do this in (40), then (40) should have a non-contradictory reading, where <u>all</u> of a group of <u>some</u> of the children are hungry. Yet this reading is unavailable.

We thus see that while a DP in isolation <u>may</u>, but need not pick out the entire contextually salient set, as soon as the same DP participates in a quantified construction, it <u>must</u> pick out the entire contextually salient set. This indicates that it is something about the quantificational construction itself which is disallowing one of the possible interpretations of a plural DP. In other words, there is some kind of Partitive Constraint at work in St'át'imcets. Moreover, the restriction parallels the English Partitive Constraint, in that the disallowed reading in (40) could be expressed in English by **all of some children are hungry* (more on this below).

Could this claim about the significance of (39-40) be invalidated by Brisson's theory about *all?* Recall that according to Brisson, a definite plural DP allows exceptions, while *all* is a modifier which serves to rule out the exceptions. Therefore, perhaps we could analyze both (39) and (40) as containing definite DPs, which inherently would allow exceptions. The exceptions are ruled out in (40) because of the presence of the modifier *tákem.*

This is not what is going on. Firstly, I have argued elsewhere that plural DPs in St'át'imcets are not unambiguously definite; they can appear inside existential sentences and in other indefinite-only environments (Matthewson 1999).

Secondly, the two approaches diverge empirically, in favor of my claim that we

are dealing with a Partitive Constraint effect rather than a potential Brisson-style account. The exception-allowing properties of definites are highly subject to context and to the size of the group. For example, (41) is fine if 29 out of 30 children are participating in the raft-building, but degrades if 2 out of 3 children are.

(41) The children are building a raft.

In contrast, my claim that non-quantified plurals in St'át'imcets allow non-maximal readings (rather than exceptions to a maximal reading) predicts that a discourse parallel to (40), in a context where 2 out of 3 children are hungry, should be fully acceptable. This expectation accords with native speaker judgments.

Thirdly, quantifiers other than universals also show that the entire contextually salient set must be picked out by the DP before quantification takes place. For example, the quantifier *cw7it* 'many' has an unambiguously proportional reading when it appears inside an argument DP (see Matthewson 1998 for detailed argumentation). The sentence in (42) is accepted in context 1 because 25 out of 30 is a large proportion. It is rejected in context 2 because 25 out of 100 is not a large proportion.

(42) [cw7it i plísmen-a] úxwal'
[many DET.PL policeman-DET] go.home
'Many (of the) policemen went home.'

Accepted in context 1:
There are 30 policemen (along with a bunch of cooks and teachers) at a party. 25 policemen go home, and 5 stay.

Rejected in context 2:
There are 100 policemen (along with a bunch of cooks and teachers) at a party. 25 policemen go home, and 75 stay.

If the DP *i plísmena* were free to pick out a non-maximal subset of the 100 policeman in context 2, then the sentence would be able to be judged true in this scenario. It cannot, supporting my claim that inserting a plural DP into a quantified construction restricts its interpretation to a maximal one.

So far I have established that there is some kind of Partitive Constraint at work in St'át'imcets, and that the restriction seems to correspond closely to the English Partitive Constraint. The next task is to account for this constraint. Since I do not believe that there is a null *of* in the St'át'imcets construction, I obviously cannot rely on Ladusaw's account.

My explanation for the facts is as follows. The St'át'imcets DPs allow either an existential reading (which will be analyzed as existential closure over choice functions), or a reading where they receive a contextually given value (here, the choice function variable remains free). When the variable remains free and receives a value from the context, the default value will be that which picks out the entire contextually salient set. This accounts for the fact that non-quantified DPs may, but need not, pick out the contextually salient set.[18]

[18] The correlation between the two readings (existential vs. contextually salient) and the two mechanisms for interpreting choice functions is not crucial to the basic idea. There are many interesting questions raised when one thinks about how free choice function variables would get their value, which I do not have space to go into here. See lecture notes by von Fintel (1998, 1999), and thanks to Kai von Fintel and Roger

When a DP appears inside a quantified phrase, it in principle still has the same two interpretive options. However, if the existential option is chosen, very strange readings will result. Let us first look at 'all'-phrases. (43) shows that if we existentially close the choice function variable, we predict a reading with surprisingly weak truth conditions.

(43) a. [tákem i smelhmúlhats-a] q'wez-ílc
[all DET.PL woman(PL)-DET] dance-INTR
'All the women danced.'

b. $\exists f [\forall x [x \leq f(\text{women}) \rightarrow x \text{ danced or the parts of x danced}]]$

(43b) is true iff there is a way of choosing an individual from the set of plural individuals composed of women, such that all atomic parts of that plural individual danced. However, this incorrectly predicts that if there are 10 women in the context where (43a) is uttered, and exactly 5 of them dance, (43a) is true.[19]

Now, the facts are that this reading does not exist. Why not?

My proposal is that this reading does not exist because it renders the contribution of the universal quantifier completely vacuous. Under the existential closure reading of the determiner, the quantified phrase ends up meaning 'all of some women'. But the truth conditions for 'all of some women danced' are equivalent to those of 'some women danced'. These truth conditions can be expressed perfectly well by using a simple plural DP. I therefore postulate that the use of a vacuous universal quantifier is ruled out for pragmatic reasons.

Interestingly, it turns out that <u>any</u> kind of upstairs quantifier gives rise to strange truth conditions if the lower DP is interpreted existentially. This is illustrated, in terms of paraphrases, in (44-48).

(44a-d) involve vacuous upstairs quantifiers:

(44) a. all of some women = some women
b. most of some women = some women[20]
c. half of some women = some women
d. some of some women = some women

(45) gives rise to almost completely vacuous truth conditions:

(45) at most 3 of some women → leads to tautology, as long as women exist

In (46a,b), the downstairs existential quantification is vacuous ((44d) could also

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Schwarzschild (p.c.) for discussion of these issues. See also Chierchia (1999) on existential closure of choice functions vs. leaving them free.

19 The existential quantifier is given wide scope in (43) for the reasons alluded to in section 3.3.2 above. However, if the existential quantifier were given narrow scope, even weaker truth conditions would result. Therefore, the discussion in the remainder of this section applies equally well, regardless of relative scope. Thanks to Meredith Landman (p.c.) for raising this question.

20 It may not be quite right that *most of some women* means the same as *some women.* If *most* means *most but not all,* then *most of some women* means the same as *some but not all women.* It is still clear that the inherent semantics of *most,* which forces a large proportion, disappears. The same reasoning holds for *half of some women* in (44c).

appear with this group):

(46) a. at least 3 of some women = at least 3 women
b. few of some women = few women

(47a-c) represent counterintuitive and hard-to-process ways of expressing what is simply expressed by other constructions:

(47) a. none of some women = not all women
b. exactly 3 of some women = at least 3 women
c. both of some women = at least 2 women

In (48), if *many* is interpreted proportionally, then *many of some women* probably reduces to *some women*. If *many* were able to be interpreted cardinally in this construction, *many of some women* would reduce to *many women*. Either way, one of the quantifiers is vacuous.

(48) many of some women = some women / many women

Although there is a range of ways in which the results are 'strange', they are all odd. I have not been able to find a quantifier which gives rise to sensible truth conditions when attached to an existentially interpreted DP. This is, in my opinion, the root of the Partitive Constraint. The claim is summarized in (49).

(49) i. Partitive Constraint violations are not ungrammatical; they are pragmatically infelicitous.

ii. The infelicity results from vacuous or strange truth conditions which arise when a quantifier attaches to an existentially interpreted phrase.[21]

This version of the Partitive Constraint applies equally well to English and to St'át'imcets, since the restriction in each language is the same.

One interesting feature of this analysis of the Partitive Constraint is that it is not actually related to the partitive construction as such. Rather, it is a general pragmatic effect which we may well expect to show its results elsewhere. This contrasts directly with Ladusaw's analysis, under which the Partitive Constraint is built into the meaning of partitive *of*.

The untying of the Partitive Constraint from the partitive construction does seem to be the right move, since the exact same effects arise in non-partitive constructions as well. Recall that non-partitives are analyzed by von Fintel (1994) as containing a resource domain variable, which narrows the domain of quantification by intersecting with the set denoted by the NP. The resource domain variable is provided by the context. Crucially, it has to be the case that the resource domain is never narrowed to something smaller than the maximal contextually relevant set of individuals. Otherwise, we would incorrectly predict that (50) could be judged true if 5 out of the 10 contextually salient women danced.

[21] Abbott (1996) also proposes that the Partitive Constraint is merely a pragmatic effect. However, our analyses are quite different. See section 5.1.1 below for some discussion.

(50) Context: There was a party last night, and 10 women and 6 men came. The speaker is discussing what happened at the party.
Every woman danced.

The most usual way, according to von Fintel, for the resource domain variable to receive its value is that the 'most salient resource domain' is picked deictically (p. 31). Implicit in this is the necessity that the entire contextually salient set is picked. But why must this be so? My proposal provides the reason. Unless the entire contextually salient set is picked, the quantifier in (50) becomes vacuous. The same effect is present as with partitives, in spite of the fact that (50) contains non-partitive quantification.

In the next subsection I turn to some oft-discussed cases in which violations of the Partitive Constraint are judged to be good. We will see that the current analysis can handle these data also.

5.1.1. Violations of the Partitive Constraint

It has often been noticed that apparent PC 'violations' are felicitous when the embedded phrase is 'specific' in some sense. Ladusaw (1982:240) says that the examples in (51) 'are appropriately used only when the user has a particular group of individuals in mind.'

(51) a. That book could belong to one of three people.
b. This is one of a number of counterexamples to the PC.
c. John was one of several students who arrived late. (Ladusaw 1982:240)

Hoeksema (1984:40, fn. 10, cited in Abbott 1996:36) similarly claims that 'perhaps an analysis of specificity along the lines of Fodor and Sag (1982) is needed' to account for PC violations. The claim that it is a Fodor and Sag-style specificity which is relevant accords with Ladusaw's intuition about (51), since a Fodor and Sag-style specific indefinite denotes a particular individual, the individual that the speaker has in mind.

If Fodor and Sag-style specificity is involved in the PC violations, Ladusaw's analysis can deal with the facts. Since a specific indefinite denotes a particular individual, it will also denote an 'individual' in Ladusaw's sense (a principal filter), and specific indefinites will be correctly predicted to be good inside partitives.

My pragmatic account of the PC outlined above can also account for the ability of specific indefinites to appear inside partitives. Specific indefinites are not existentially closed, and we will not have the vacuous quantification problems found in (44-48) above. On the contrary, (52a-c) make perfect sense and will be predicted to be good.

(52) a. all of a specific group of women
b. most of a specific group of women
c. many of a specific group of women

As expected, all of the acceptable PC 'violations' obey the requirement proposed above, that the maximal relevant set be quantified over rather than a subset. Consider the examples in (53) ((53a) and (c) are from Stockwell, Schachter and Partee 1973:144):

(53) a. **One of some boys who were playing in the alley** got arrested.
b. **Most of some boys who were playing in the alley** got arrested.
c. He ate **three of some apples he found on the ground.**

(53a) cannot mean that one out of a subset of the boys the speaker has in mind who were playing in the alley got arrested, while some other boys from another subset might have also been arrested. In other words, (53a) does not get to mean *At least one of some boys who were playing in the alley got arrested.* Similarly, in (53c), he ate three out of all the apples he found, not three out of a possibly proper subset of the apples he found. *Three of some boys* is not a pragmatically 'approved-of' way to say *at least three boys.*[22]

Before leaving this subject I will briefly consider claims by Abbott (1996) that the inner DP in an acceptable PC violation does not have to be specific in Fodor and Sag's sense. Abbott gives the examples in (54), among others. She claims that the speaker does not have to have any particular group of individuals in mind for the examples to be grammatical.

(54) a. John was apparently **one of several students who arrived late** - I have no idea how many, or who the others were.
b. Every year only **one of many applicants** is admitted to the program.
c. Anybody who breaks **more than one of any dishes they're given** won't get any more.
d. He brought back **several of twenty of his roses that were sick** to get a refund, but had to just throw out the rest, which was about fifteen.

If Abbott's claim were right, it would not cause a problem for my analysis. This is because my account does not rely on specificity as such, but rather on the avoidance of vacuous quantification or strange truth conditional effects. All of Abbott's cases conform to the requirement that it be all of the relevant group which is quantified over.

While this is not the place to go into this issue in detail, I believe that all the felicitous 'violations' do in fact involve specificity, contrary to Abbott's claims. For a start, it is suspicious that relative clauses are practically obligatory in all the felicitous 'violations'. It is well-known that relative clauses are a way of inducing or helping a specific reading (this is mentioned by Fodor and Sag 1982, among many others). Moreover, the sense in which a speaker has to have a particular individual 'in mind' is not so clear-cut. How much do we need to know about the individual? We certainly don't have to know their name, but how do we draw the line? It is not so simple to rule out the possibility that the speaker 'has someone in mind' in (54a-d).[23]

Summarizing the results up to now, I have argued that in the interests of a cross-linguistically valid and appealing theory, we should investigate the idea that English quantification parallels St'át'imcets quantification. This means rejecting the assumption that the [Q NP] structure is 'basic' and that partitives need to be 'explained away'. I have shown that the simple assumption that *of* is semantically vacuous allows us to analyze the English partitive as directly paralleling the St'át'imcets canonical quantification structure. I have further argued that the so-called Partitive Constraint is the result of a general pragmatic prohibition on vacuous or strange uses of quantifiers. The analysis proposed

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22 An apparent counter-example to the maximality generalization is Abbott's (1996:35) example in (i).

(i) Kim asked them to tell the caterer to put two strawberries on **each of three pies**, and kiwi slices on the remainder.

The *each of n* NP construction has some special properties differentiating it from ordinary partitives, and I set it aside for future research.

23 There are also some suspicious features in many of Abbott's examples. (54a), for example, contains *apparently,* which could indicate that the specificity is in relation to someone other than the speaker (thanks to Angelika Kratzer for pointing this out).

correctly accounts not only for the English data, but also for Partitive Constraint-like effects in St'át'imcets, where a plural DP in isolation has more interpretive possibilities than a plural DP embedded inside a quantificational phrase.

6. Non-partitive *all* and *most*

In this section I examine non-partitive *all* and *most,* in constructions such as *all linguists, most lions.* Unlike in partitives, there is no obvious overt evidence here for the two-tier structure I have been advocating. Nevertheless, we will see that the two-step process is well-supported.

My proposal about non-partitive *all* and *most*-phrases is that they contain bare plurals. This means that the quantifier does not combine directly with a predicate-denoting NP, as the standard analysis would predict, but rather with a phrase of argumental type. More importantly, the bare plural which *all* or *most* combines with is predicted to have all the properties which bare plurals are independently known to have (subject, of course, to the generalized pragmatic restriction against vacuous quantification, introduced above).[24]

There is good evidence for the claim that bare *all* and *most*-phrases contain more, in some sense, than the standard analysis would lead us to expect. First, *all* and *most*-phrases combine only with plurals, not with singular count nouns, as shown in (55a-b). They also combine with mass nouns, as illustrated in (55c).

(55) a. All / most linguists are millionaires.
b. * All / most linguist is a millionaire.
c. All / most snow is white.

These data are consistent with my idea that *all* and *most* combine with phrases of argumental type. Plurals and mass nouns are exactly the things which can stand alone as arguments in English:

(56) a. Linguists are millionaires.
b. * Linguist is a millionaire.
c. Snow is white.

Therefore, the assumption that *all* and *most* phrases contain phrases of argumental type means that whatever rules out (56b) can also directly rule out (56b). In the discussion from now on, I shall deal only with the bare plural case, setting aside the mass noun cases for reasons of space.

What do we predict about the semantics of *all* and *most*-phrases, if they contain bare plurals? Roughly speaking, bare plurals allow either existential or generic readings. As for the exact way in which these readings arise, there is a vast literature on the topic and this is certainly not the place to decide on the best analysis (see Carlson 1977, Krifka 1988, Wilkinson 1991, Diesing 1992, Gerstner and Krifka 1995, Kratzer 1995, Chierchia 1998, and many others too numerous to mention). For concreteness, I will assume the neo-Carlsonian version put forward by Chierchia (1998), according to which bare plurals denote kinds, usually by virtue of having undergone the $\cap$ operation defined in (57) (K is the set of kinds).

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24 The idea that *all*-phrases, at least, contain bare plurals, has some precedent in the literature; Partee (1995:583) claims that '*all* is not so much acting as a determiner as it is adding an "exhaustiveness" meaning to what is otherwise still the meaning of a bare plural.'

(57) For any property P and world / situation s,

$\cap P = \lambda s \iota P_s$, if $\lambda s \iota Ps$ is in K
undefined, otherwise

where P_s is the extension of P in s. (Chierchia 1998:350)

The $\cap$ operator makes a kind out of a property P by returning the largest member of the extension of P at any given world. Kind-denoting bare plurals receive an existential interpretation in certain contexts; the details of how this happens do not concern us here.

Now, if a bare plural is inserted inside an *all* or *most*-phrase, we should expect the quantifier to be able to quantify over the kind denoted by the bare plural. We will crucially not expect the existential reading of the bare plural to be possible, for the same reasons as an existential interpretation is disallowed for the inner DP in a partitive (see discussion in section 5.1 above). We also do not expect *all* and *most* to be able to quantify over a contextually restricted set, except in cases where bare plurals can also do this (cf. Condoravdi 1994).

All these predictions are correct. *All* and *most* do not usually quantify over a contextually restricted set, but instead seem to be felicitous only in generic-type contexts. This is noticed by Partee (1995), as well as by Brisson (1998:7) and by Gil (1995:352, fn. 2), who notes that 'NPs of the form *all* N generally entail a preference for generic contexts. ... In [episodic] contexts, a more appropriate construction is provided by NPs of the form *all the* N.'

Examples showing the preference for genericity are given in (58-60). In each case, the clash between an *all*-phrase and an overtly non-generic context gives rise to infelicity. (Infelicity is marked differently for each author, by #, * or !).

(58) a. All desks are brown.
b. # All pages in this book were torn. (Partee 1995:583)

(59) a. All the girls went to the gym.
b. * All girls went to the gym. (Brisson 1998:7)

(60) a. I admire all linguists.
b. ! I talked to all linguists.
c. I talked to all the linguists. (Matthewson 1998)

Significantly, bare plurals in each of the (b) cases would allow an existential reading. Without going into formal details, we can see that it is entirely expected that this reading disappears when a quantifier is added, given my explanation above of the Partitive Constraint. This offers further evidence for my proposal to divorce the so-called Partitive Constraint from the partitive construction per se, and to view it as a completely general restriction on quantification.

According to my judgments, *most*-phrases also prefer to occur in generic environments. Some examples are given in (61).

(61) a. Most linguists are millionaires.
b. # Most linguists went to New Zealand for Christmas last year.
c. I admire most linguists.
d. # I talked to most linguists.

Even if we explicitly set up a discourse context which would normally be sufficient to restrict the domain of quantification, *all* and *most* resist quantifying over a restricted set. This is shown in (62) and (63). In each case, the *all / most* phrase sounds like it should involve quantification over all linguists in the world, and hence gives rise to infelicity.

(62) Last night I threw a party and a bunch of linguists and philosophers came.
All / most linguists got drunk.

(63) There were 100 linguists and 100 philosophers at the party. We asked everyone, and we found out that ...

a. Every linguist went to New Zealand for Christmas last year.
b. All / most of the linguists went to New Zealand for Christmas last year.
c. # All / most linguists went to New Zealand for Christmas last year.

An interesting prediction of the bare plural analysis arises with cases where it is independently known that bare plurals allow a reading other than the usual generic or existential ones (thanks to Kai von Fintel for pointing this out to me). Condoravdi (1994) discusses cases such as (64).

(64) In 1985 there was a ghost haunting the campus ...

a. Students were aware of the danger.
b. The students were aware of the danger.
c. There were students who were aware of the danger.

(64a) seems to mean the same as (64b), not (64c). Condoravdi provides arguments that (64a) is not an instance of a generic reading, but is a separate reading, which she calls 'functional'.

Condoravdi argues that the functional reading always involves contextual restrictions, but that not just any contextual restriction is appropriate. Strikingly, the cases where bare plurals do allow functional readings are those which also allow *all* and *most*-phrases to receive non-generic readings. The cases where bare plurals do not allow functional readings are those in which *all* and *most*-phrases sound infelicitous. Some examples are provided in (65-66).

(65) In 1985 there was a ghost haunting the campus ...

a. Students were aware of the danger. (functional reading ok)
b. All / most students were aware of the danger. (same reading)

(66) Last night I threw a party and a bunch of linguists and philosophers came over ...

a. Linguists got drunk. (no functional reading; existential only)
b. # All / most linguists got drunk. (infelicitous)

A further example is given in (67). Condoravdi notes (1994:87) that (67a) does not allow a functional reading restricted to the visible students, but does allow a functional reading which encompasses all students on campus. The exact same results hold in (67b). Quantification must be over all the students on campus; no restriction is possible to the visible students.

(67) Context: We know that there is a ghost haunting the campus. We are standing in front of the library and we can both see several students.

a. Students are afraid to enter the library.
b. All / most students are afraid to enter the library.

The data concerning functional readings provide very good evidence for the claim that *all* and *most*-phrases contain bare plurals. The range of readings seems to correlate absolutely with the range of readings available for bare plurals. The one reading which disappears, the existential reading, is predicted to disappear by the general pragmatic constraint against vacuous quantification introduced above.

My claim that English *all* and *most*-phrases contain bare plurals has a further desirable consequence when we consider St'át'imcets. St'át'imcets differs from English in one very relevant respect: it lacks bare plurals. As was shown in section 3.1, all argumental phrases in St'át'imcets must contain an overt determiner. This independently-required difference between the languages immediately accounts for the fact that St'át'imcets completely lacks quantificational phrases of the surface form [Q NP]. Thus, we immediately account for the core way in which St'át'imcets quantification appears so different from English quantification. Nothing further needs to be said about the cross-linguistic difference.

A further interesting consequence of the absence of bare plurals in St'át'imcets has to do with the expression of genericity in that language. Not only are Ds always present and overt, they all encode semantic number and deictic features (van Eijk 1997, Matthewson 1998). This means that they all narrow the domain of the quantifier in a meaningful (i.e. non-trivial) way. We therefore predict that it should be difficult to make generic statements in St'át'imcets by using the quantifier *all*.

This prediction is upheld. When an English generic sentence is given to a St'át'imcets speaker, sentences such as (68) are sometimes volunteered as translations. However, the consultant's comment about (68) is highly revealing.[25]

(68) [tákem i twéw'w'et-a] ama-mín-itas k-wa píx-em'
[all DET.PL boy(PL)-DET] good-APPL-3PL.SUBJ DET-prog hunt- INTR
'All boys love hunting.'

Consultant's comment: "There's a bunch of men there; it doesn't pertain to all the men in the world."

Summarizing this section, I have argued that non-partitive *all* and *most* do not take predicate-denoting NPs as their arguments, as the standard analysis would lead us to expect. Rather, *all* and *most*-phrases are best analyzed as containing bare plurals. This claim correctly predicts that *all* and *most* quantify either over the entire kind denoted by the NP, or over a contextually restricted set correlating with Condoravdi's 'functional' reading of bare plurals. *All* and *most* may not quantify over an existentially interpreted bare plural, due to the general pragmatic constraint against vacuous quantification which also accounts for Partitive Constraint effects.

[25] The one non-choice-function determiner does not encode number and deictic features. Correspondingly, it is often employed in generic contexts, and may be what is used when kind-reference is desired. See Demirdache (1997a,b) for some discussion. Note also that one may not use deictic determiners inside the subjects of kind-level predicates such as 'be extinct', 'be rare'.

7. *Every*

So far, the English constructions we have examined have all been compatible with the null hypothesis that quantifiers have a constant denotation across all languages, and that this denotation corresponds to the analysis of St'át'imcets quantifiers provided above. Now we come to what is probably the most challenging case for the hypothesis: English *every*. *Every* is problematic since it is a quantifier which is not analyzable as taking a DP complement.

In contrast to what we saw with *all* and *most, every* seems to occupy a relatively low position in the syntax of the DP. For a start, *every*-phrases clearly do not contain bare plurals, since the complement of *every* is a singular count noun:

(69) Every linguist is a millionaire.

Unlike almost all other English quantifiers, *every* cannot precede an entire DP. Thus, it is illegitimate in the very type of construction which I am trying to reduce all quantification to!

(70) * Every (of) the linguists got drunk.

Other evidence that *every* occupies a low position comes from the constructions in (71), where *every* appears inside a possessive or another quantifier.

(71) a. She watched **his / Oscar's every** move.
b. Common to **most every** analysis of the partitive noun phrase is the claim ...
(Selkirk 1977:288)

In terms of its semantics, *every* can easily be interpreted as quantifying over a contextually limited subset of the set of individuals denoted by the common noun.

(72) There were many linguists and philosophers at the party last night ...

Every linguist had a good time.

Here, then, is the problem. The standard analysis puts quantifiers in D position and says that they create a generalized quantifier from an NP. For St'át'imcets quantification in general, and for English partitives and bare *all* and *most*-phrases, this claim has successfully been challenged. There is syntactic evidence that the quantifiers are in a higher position than D, and semantic evidence that the creation of a generalized quantifier proceeds in two steps. However, with *every* there is no such evidence. It is low in the structure, plausibly occupying the D position, yet it is quantificational.

Under a strict version of the hypothesis I am pursuing, the roles of Q and D are always separate. If *every* is in D position, as the syntactic evidence suggests, then I will be forced to claim that *every* is not a quantifier, and that its apparent quantificational nature comes from some other (possibly null) element.

This claim is obviously controversial, and I am not sure whether it is right. However, there are some suggestive pieces of evidence in favor of it which indicate that it is at least worth investigating.

Suppose that *every* is a determiner which selects the individual corresponding to the maximal contextually salient subset of the set denoted by the NP. In this respect it is

similar to plural definite *the*. In addition, however, *every* has a requirement for distributivity. This extra distributivity requirement could be implemented in a number of ways; see Beghelli and Stowell (1997) for a sketch of one possible implementation, and see the discussion of Lin (1998) immediately below. Landman (2000) also claims that *every*-phrases can have collective definite interpretations as well as generalized quantifier interpretations.

This assumption about *every* immediately accounts for the fact that it can quantify over contextually specified subsets, as in (72). *Every* can also quantify over the entire set denoted by the noun, as in (73):

(73) a. Every dog has four legs.
b. I admire every linguist.

However, we already know that domain narrowing can be trivial, so the data in (73) are not a problem.

The analysis being sketched here receives some indirect, because cross-linguistic, support from a construction in Chinese which directly parallels what I want to say about English *every*-phrases. It concerns the element *mei,* illustrated in (74).

(74) **mei** ge ren dou mai-le shu
every CL man all buy- ASP book
'Everyone bought a book.' (Lin 1998:219)

Mei, although translated as 'every', is analyzed by Lin (1998) as a non-distributive determiner. It denotes 'a function which takes a predicate of type <e,t> as its argument and returns the maximal collection of the individuals denoted by the predicate' (Lin 1998:238). Lin's lexical entry is given in (75) (Lin does not deal with context-dependency.)

(75) [[*mei*]] = that function f such that for all P an element of $D_{<et>}$, f(P) = $\cup$[[P]]

Mei obligatorily co-occurs, at least in subject position, with an overt element *dou.* Lin analyzes *dou* as a generalized distributivity operator. Thus, the distributivity found in *mei*-sentences comes from *dou* rather than from *mei* itself.

Some support for the claim that *mei* is not a quantifier comes from facts pointed out to me by Lisa Cheng (p.c.; see also Lin 1998). In Chinese, demonstratives co-occur with classifiers, as shown in (76), but quantifiers are more like modifiers and are marked with the modificational marker *de,* as in (77):

(76) na yi ben shu
that one CL book
'that book'

(77) a. suoyou de ren
all DE person
'all people/everyone'

b. henduo de shu
many DE book
'many books'

Mei parallels the demonstratives and differs from the quantifiers; it co-occurs with classifiers (at least in Mandarin and Cantonese):

(78) a. mei (yi) ge ren
every (one) CL person
'everyone'

b. mei (yi) zhang zhi
every one CL paper
'every piece of paper'

Cheng believes (p.c.) that *mei* simply gives a reading of a "collection" of the individuals from a particular domain; that is why the distributive *dou* is needed.[26]

This analysis of *mei* could be adopted to deal with English *every*. Perhaps *mei* corresponds to English *every*, and the distributivity operator, *dou* in Chinese, simply happens to be null in English.

Something similar to this idea is argued for by Beghelli and Stowell (1997) and Szabolcsi (1997) for English (although it is implemented differently). Beghelli and Stowell claim that *every*-phrases are not true distributive QPs. In their system, *every*-phrases introduce variables, just as indefinites do (1997:101). *Every*-phrases are underspecified for the feature [Distributive]; therefore (unlike *each)* they are not forced to check this feature by moving to Spec of DistP (1997:103).

Beghelli and Stowell's idea, as well as my idea that *every* is the same as *mei,* predicts that there should be cases where *every*-phrases receive non-distributive construals, in contrast to *each*-phrases. Some examples are given in (79-83).

(79) a. It took every boy to lift the piano.
b. * It took each boy to lift the piano. (Beghelli and Stowell 1997:98)

(80) a. She counted every proposal.
b. ? She counted each of the proposals. (Dowty 1987:106)

(81) a. # In this class I try to combine each theory of plurality.
b. In this class I try to combine every theory of plurality. (Landman 2000:10)

(82) a. # Ricky weighed each apple from the basket, but not individually.
b. Ricky weighed every apple from the basket, but not individually.
(Tunstall 1998:99)[27]

(83) a. ?# Jake photographed each student in the class, but not separately.
b. Jake photographed every student in the class, but not separately.
(Tunstall 1998:99)

There are many unresolved issues for the idea being sketched here. For instance, it is not at all clear under which circumstances *every*-phrases can be non-distributive, and why those circumstances allow non-distributivity. The discussion in this section is merely intended to show that the idea that *every* is not a true universal quantifier (which is forced

[26] Some quantifiers other than *mei,* such as *henduo* 'many ' and *dabufen* 'most' also need to have *dou.* See Lin (1998) for some discussion and explanation.

[27] Tunstall's (1998) theory is that *every* and *each* are subject to different kinds of distributivity conditions. I do not have the space to discuss this here.

upon us by the strict version of my 'no cross-linguistic variation in quantification' hypothesis) has some precedent in the literature and some potential for further investigation.

If the claim that *every* is not a quantifier does not go through, then our null hypothesis will have to be weakened. It need only be weakened slightly, however. We can still claim that in principle, the creation of a generalized quantifier proceeds in two steps. First, domain narrowing (or kind-creation) takes place. Then, quantification happens. The extra thing to be said about English *every* is that occasionally, in certain languages, the two jobs may be combined and performed by a single element. That is, *every* is an exceptional quantifier in that it performs two jobs rather than one. It restricts its own domain, and then quantifies over that restricted domain. (See Matthewson 1998 for this proposal about *every).*

Some support for the idea that *every* is an unusual, portmanteau element, is provided by Gil (1995). Gil explicitly analyses *every* and its counterparts in a number of other languages as portmanteau items which perform two jobs. He further notes (1995:321) that 'As for *every* and its equivalents, far from being prototypical, these are in fact among the most exceptional of quantifiers in their syntactic and semantic behaviour.'

This is relevant precisely because *every* is the most problematic element for my 'no cross-linguistic variation' hypothesis. The virtue of looking at things from a new angle (from a St'át'imcets starting-point rather than from an English starting-point) is that things that we thought were problems (St'át'imcets in general, the English partitive) become unproblematic, while things that we thought we understood (English *every)* become tricky. This new reversed standpoint may be not only refreshing, but right.

8. Conclusion

The goal of this paper was to subject the standard analysis of determiner quantifiers to cross-linguistic scrutiny. The reason why this is necessary is that there are entire languages, such as St'át'imcets, where the canonically expected quantificational structure is completely unavailable. My aim was to take the null hypothesis, that languages do not vary in their quantificational possibilities, and see how far it could be pushed. Along the way, I have provided reanalyses of various English constructions, both partitive and non-partitive.

Insofar as these reanalyses are successful, we have evidence for the strong claim that cross-linguistically, the creation of a generalized quantifier is not performed by a single element, a 'determiner quantifier'. Rather, there are always two steps involved. Put another way, quantifiers do not, contrary to our standard beliefs, expect to receive as input a predicative NP.

The claim that English quantificational structures are a disguised version of St'át'imcets ones obviously requires further work, since there are constructions I have not yet addressed. In particular, English *each* needs to be investigated, as do weak quantifiers. Briefly previewing, I suspect that *each*-phrases can be analyzed as containing some null partitive structure, while weak quantifiers will be ambiguous between true quantifiers and adjectives. (Weak quantifiers in Salish overtly show this distinction; they occur either before a D, or after a D, but never replace D. See Matthewson 1998 for discussion.)

To the extent that a common analysis along the lines outlined here can be found for English and St'át'imcets, we have an extremely elegant account of the variation

between these two languages. There is no variation at all in the denotations of quantifiers, a very desirable result. The surface variation can all be reduced to the independently-known fact that St'át'imcets possesses obligatory overt determiners and therefore lacks bare plurals. Consequently, in St'át'imcets we are never even fooled into thinking that there is a [Q NP] construction.

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