A part of wood is not a tree.
On the absence of the count/mass distinction in Halkomelem

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In this paper, I establish that in contrast to English, Halkomelem Salish has no grammaticized distinction between mass and count N's. Nevertheless, in both languages there are N's that denote substance and N's that denote individuals. Consequently, I argue that this is not a grammatical property but purely based on ontological distinctions. I propose a formal analysis that captures this cross-linguistic difference between English and Halkomelem: Halkomelem lacks the functional category responsible for the count/mass distinction in languages like English. The data and analysis presented have two crucial implications: first the count/mass distinction is a grammatical and not a lexical distinction; second N's do not have to be individuated in order to be counted.

1 The problem

It is a well-known fact that the plural marker in English can attach to N's that denote individuals (1) but not to N's that denote substance (2):

(1) *Plural marking on count N's in English*
a. There is a tree in my garden.
b. There are tree-**s** in my garden.

(2) *No plural marking on mass N's in English*
a. There is wood in my garden.
b. *There are wood-**s** in my garden.

The distributional difference between these two kinds of N's leads one to propose two subcategories of N's: count N's and mass N's. The situation is strikingly different in Halkomelem Salish.[1] Here, the distribution of the plural marker does not seem to be sensitive to whether the N it attaches to denotes an

[1] Halkomelem is a Central Coast Salish language, spoken around the Vancouver area in B.C. There are three dialects: Upriver, Downriver and Island Halkomelem. The data presented in this paper are from the Upriver dialect and appear in the official orthography of the language. I would like to thank the elders Dr. Elizabeth Herrling and the late Rosaleen George for teaching me about their language. Research on this paper was supported by a SSHRC grant (410-2002-1078) awarded to the author.

individual (3) or a substance (4) (see Davis and Matthewson 1999 for the same generalization in Lillooet Salish):[2]

(3) a. tsel kw'éts-lexw ye theqtheqát
1sg.s see-trans det.pl tree.pl
'I have seen trees.'

b. tsel kw'éts-lexw te swóweles
1sg.s see-trans det. boy.pl
'I have seen boys.'

(4) a. tsel kw'éts-l-exw te th'exth'éxet
1sg.s see-trans-3o det gravel.pl
'I saw a lot of gravel.'

b. tsel kw'éts-l-exw te syiqyíq
1sg.s see-trans-3o det snow.pl
'I've seen a lot of snow.'

c. tsel kw'éts-l-exw te spepíw
1sg.s see-trans-3o det ice.pl
'I've seen a lot of ice.'

d. tsel kw'éts-lexw te shweláthetel
1sg.s see-trans-3o det fog.pl
'I've seen a lot of fog.'

e. qex te spelháls li kw lhqálets
Q det wind.pl P det Vancouver
'There is a lot of wind in Vancouver.'

The purpose of this paper is to provide answers to the following two questions which we are faced with in light of the data in (1)-(4).

i) Why does plural marking in Halkomelem not distinguish between N's denoting individuals and N's denoting substance (i.e. count and mass N's)?
ii) What is the source of the cross-linguistic difference between English and Halkomelem?

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[2] Plural marking is associated with a number of allomorphs: reduplication (i), -l- infixation (ii), or vowel change (iii):

i)	méle	mámele
	child	*children*
ii)	q'ámi	q'álemi
	girl	*girls*
iii)	swíweles	swóweles
	boy	*boys*

Galloway 1980: 14; 1993: 379f.

As far as I was able to determine, all three allomorphs behave identically with respect to the properties discussed in this paper and therefore I will not discuss them here. Extensive discussion of the properties of these allomorphs can be found in Galloway 1980, 1993; Hukari 1978, Suttles 2004, Urbanczyk 2004, among others.

In a nutshell, I will argue that the count/mass distinction is not grammaticized in Halkomelem whereas it is in English. Consequently, Halkomelem does not show any of the grammatical effects associated with the count/mass distinction in English. This proposal and its consequences are discussed in section 2.

In section 3, I will develop a formal (structural) account that captures this insight using the framework of principles and parameters theory in its minimalist version. In particular, I will argue that Halkomelem lacks the functional category which is responsible for the count/mass distinction of N's in English (i.e. *ClassifierP*). I will show that several further (seemingly unrelated) differences between Halkomelem and English fall out from this proposal. Thus, I argue that the Halkomelem pattern provides indirect evidence for the assumption that the count/mass distinction is structurally (and not lexically) conditioned.

In section 4, I take on the question as to why Halkomelem lacks such a category. In particular I will argue against the common view that N's without classifiers or plural markers cannot be counted. Rather, I argue that the obligatoriness of plural marking or classifiers in languages like English or Chinese, respectively is a function of the presence of ClP and not a function of the denotation of the nominal root. I will contrast two potential analyses: i) roots are underspecified or ii) all roots are count N's (cf. Davis and Matthewson 1999). Based on empirical evidence I will argue for the first option (in terms of underspecified roots). This discussion will shed some light on the issue of cross-linguistic variation in the denotation of N's – a topic of much discussion in the recent literature (Chierchia 1998 and subsequent research).

2 Some notes on the nature of grammaticized categories

2.1 The count/mass distinction is grammaticized in English

When we teach introduction to linguistics at the undergraduate level we often mention the count/mass distinction in English as an example for *subcategories*. That is, categories are defined by means of their syntactic and morphological distribution. For example, in English N's follow definite and indefinite determiners, demonstratives, numerals and quantifiers and they take plural inflection:

(5) *the distribution of count N's in English*
   a. **the/a/this/that/one/every/each/no/** tree
   b. **these/those/two/several/some/many/no/all** tree-s

However, a subset of N's (usually but not always denoting a substance rather than an individual) does not share quite the same range of distribution: they do not usually follow definite and indefinite determiners, numerals and combine with a different set of quantifiers:

(6) *The distribution of mass N's in English*

a. **?the/*a/this/that/*one/*every/no** wood
b. ***these/*those/*two/*several/*some/*many** woods
c. **some/no/all/much/little** wood

The difference in distribution leads one to postulate two *subcategories of N's*: i) count N's (5) and ii) mass N's in (6) (see Gillon 1992 for extensive discussion). The division of N's into two subcategories in English is supported by another distributional difference. Only mass N's, but not singular count N's can be used without a determiner. In other words, English allows for bare mass N's and bare plurals but not for bare singulars:

(7) *The distribution of "bare N's" in English*

a. I saw wood.
b. I saw trees.
c. *I saw tree.

Evidence that the count/mass distinction is indeed a matter of morpho-syntactic subcategorization as opposed to being semantic in nature is as follows. If it was purely a matter of lexico-semantic properties, one could argue that N's differ as to whether they denote individuals (this could correspond to the class of count N's) or substance which is not individuated (this could correspond to the class of mass N's). Crucially, this semantic account cannot explain that there are certain (language specific) mismatches between the semantic and the morpho-syntactic categorization. These 'mismatches' are often referred to as 'object mass N's' because they denote individuated objects (as opposed to unindividuated substance). Nevertheless, these N's behave like mass N's in terms of their distribution:

(8) *Object mass N's in English*

much furniture/clothing/fruit/silverware/mail/jewelry

Crucially, the grammatical categorization seems to be subject to (arbitrary) cross-linguistic variation in that different languages categorize equivalent words in different ways as illustrated in (9):

(9) *Cross-linguistic variation in categorization*

a. much furniture → mass N in English
b. les meubles → count N in French

I take the existence of such mismatches between morpho-syntactically and semantically defined categories as the crucial motivation for the existence of a morpho-syntactic (i.e. grammatical) category. A crucial consequence of the existence of a grammatical category in a given language is that such categorization is forced upon the entire class of N's. That is the decision as to whether a given N is count or mass must be made for all N's.

Before we proceed to Halkomelem which I argue lacks the count/mass distinction, let me briefly turn to a grammatical category English lacks, namely gender. Languages with grammatical gender usually possess N's which display a mismatch between natural gender and grammatical gender:

(10) *Gender mismatched N's in German*

a.	das	Mäd-chen	→	neuter female N
	the.neut	girl-dim		
	‚the girl'			
b.	das	Männ-chen	→	neuter male N
	the.neut	man-dim		
	‚the little man'			
c.	der	Mond	→	masculine neutral N
	the.masc	moon		
	'the moon'			

And again, the grammatical categorization seems to be subject to (arbitrary) cross-linguistic variation in that different languages categorize equivalent words in different ways as illustrated in (9):

(11) *Cross-linguistic variation in gender assignment*

a.	i.	die	Sonne	→ *feminine in German*
		the.fem	sun	
	ii.	il	sole	→ *masculine in Italian*
		the.masc	sun	
		'the sun'		
b.	i.	der	Mond	→ *masculine in German*
		the.masc	moon	
	ii.	la	luna	→ *feminine in Italian*
		'the moon'		

In the realm of gender it is generally acknowledged that languages differ as to whether or not they possess grammatical gender. English is a language which does not have grammatical gender but nevertheless it has natural gender (that is we can talk about males and females, but this is purely a property of the ontology, not the grammar). As a consequence, there are no mismatches of the type found in German and gender is not expressed anywhere obligatorily.

An important lesson we learn from the gender-example is that languages can differ in the inventory of the grammatical categories they use. Consequently, if the count/mass distinction is indeed an instance of a grammatical category, then we might expect languages to differ as to whether the count/mass distinction is grammaticized. And of course we would expect a number of properties to follow from this difference. This is precisely what I propose for Halkomelem to which I turn in the next subsection.

2.2 The count/mass distinction is not grammaticized in Halkomelem

I propose that the difference between Halkomelem and English introduced in section 1 is best analyzed as a difference in grammatical category: whereas English has a grammaticized mass-count distinction, Halkomelem does not. Of course, just like it is the case that English can talk about male and female individuals (i.e. it has a distinction for natural gender) we are not denying that we can talk about substance vs. individuals in Halkomelem. However, as with natural gender, the decision as to whether a N is categorized as count or mass is not forced by the grammar. In fact, N's are not subcategorized as such at all.[3] This of course predicts that all N's share the same morpho-syntactic distribution. If so, we immediately understand the data mentioned in section 1: plural marking can equally target N's which denote individuals as well as N's which denote substance. From now on I will use the terms "substance" vs. "individual" for the ontological properties and reserve the terms "mass" vs. "count" for the grammaticized category distinction of N's. In other words, substance vs. individual is to mass vs. count what natural gender is to grammatical gender.

Given this proposal, we predict that no determiner or quantifier is sensitive to the count/mass distinction. To the best of my knowledge, this prediction is borne out. The quantifier *qex* (many/much) can be used with N's denoting substance (12) as well as with N's denoting individuals (13).

(12) *Halkomelem N's denoting substance following 'qex'*

a. tsel kw'éts-lexw qex (te) syíts'em[4]
1sg.s see-trans Q det sand
'I saw lots of sand.'

b. tsel kw'éts-lexw qex (te) siyólh
1sg.s see-trans Q det wood
'I saw lots of wood.'

c. tsel kw'étslexw qex (te) qó/qoqo
1sg.s see-trans-3o Q det water/water.pl
'I have seen lots of water.'

d. el stl'í kw qex (te) mélk/memelk
1sg.poss want det Q det milk/milk.pl
'I want lots of milk.'

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[3] A subcategory that one does need to recognize in Halkomelem is that between common N's and proper names. The latter but not the former can be preceded by the determiner *tl'* which is itself restricted to "ergative", possessive and oblique arguments.

[4] The optionality of the determiner (*te*) is independent of the 'mass-count' distinction. Furthermore, in all cases the determiner can also appear preceding the quantifier:

i) tsel kw'ets-lexw te qex syítsem
1sg.s see-trans det Q sand
'I saw lots of sand'

(13) *Halkomelem N's denoting individuals following 'qex'*

a. tsel kw'éts-lexw qex (te) theqá/theqtheqát
1sg.s see-trans Q det tree.pl
'I saw lots of trees.'

b. tsel kw'éts-lexw qex (te) sth'ím/sth'eth'ím
1sg.s see-trans Q (det) berry
'I saw lots of berries.'

c. tsel kw'éts-lexw qex (te) swíweles/swóweles
1sg.s see-trans Q (det) boy/boy.pl
'I saw lots of boys.'

Similarly, the quantifier *mekw'* ('all') can also be used with N's denoting substance (12) as well as with N's denoting individuals (13).

(14) *Halkomelem N's denoting substance following 'mekw''*

a. tsel kw'éts-lexw mekw' (te) siyíts'em
1sg.s see-trans Q det sand
'I seen all the sand.'

b. tsel kw'éts-lexw mekw' (te) sqélep
1sg.s see-trans Q det dirt
'I seen all the dirt.'

c. tsel kw'ets-lexw mekw' (te) siyólh
1sg.s see-trans Q det wood
'I seen all the wood.'

(15) *Halkomelem N's denoting individuals following 'mekw''*

a. tsel kw'éts-lexw mekw (te/ye) theqát/theqtheqát
1sg.s see-trans Q det.pl tree/tree.pl
'I seen all the trees.'

b. tsel kw'éts-lexw mekw' (te/ye) sth'eth'ím
1sg.s see-trans Q det/det.pl berry.pl
'I seen all the berries.'

c. tsel kw'ets-lexw mekw' (te/ye) swíweles/swóweles
1sg.s see-trans Q det/det.pl boy/boy.pl
'I saw lots of boys.'

Finally, both types of N's can co-occur with the negative predicate '*ewete'* in combination with the hypothetical determiner *kw*:

(16) *Halkomelem N's denoting substance following 'neg + kw'*

a. ewéte í-l kw'éts-lexw kw syíts'em/siyíts'em
neg aux-1sg.ss see det.hyp sand/sand.pl
'I didn't see no sand'

b. ewéte-el í kw'éts-lexw kw sqélep
neg-1sg.ss aux see-trans det.hyp dirt
'I seen no dirt.'

c. ewéte í-l kw'éts-lexw kw siyólh
net aux-1sg.ss see-trans det.hyp wood
'I never seen any wood.'

(17) *Halkomelem N's denoting individuals following 'neg + kw'*

a. ewéte í-l kw'éts-lexw kw theqát/theqtheqát
neg aux-1sg.ss see-trans det.hyp tree/tree.pl
'I didn't see no trees.'

b. éwe tsel lí-l kw' éts-lexw kw sth' ím/sth'eth'ím
neg 1sg.s aux-1sg.ss see-trans det.hyp berry/berry.pl
'I never seen any berries.'

c. éwe tsel lí-l kw'éts-lexw kw swíweles/swóweles
neg 1sg.s aux-1sg.ss see-trans det.hyp boy/boy.pl
'I never seen any boys.'

Finally, it is also possible to combine numerals with both types of N's:[5]

(18) *Halkomelem N's denoting substance following numeral*

a. tsel kw'éts-l-exw isále siyítsem
1sg.s see-trans-3o two sand.pl
'I seen two pieces of/kinds of sand.'

b. tsel kwé'ts-l-exw isále siyólh
1sg.s see-trans-3o two wood
'I saw two pieces of wood.'

(19) *Halkomelem N's denoting individuals following numeral*

a. tsel kw'éts-l-exw isále sth'ím/sth'eth'ím
1sg.s see-trans-3o two berry/berry.pl
'I seen two berries.'

b. tsel kw'éts-l-exw isále theqát
1sg.s see-trans-3o two tree/tree.pl
'I seen two trees.'

In sum, to the best of my knowledge there is no determiner or quantifier that would distinguish between two subcategories of N's akin to mass- and count N's in English. This is of course expected if the count/mass distinction is not grammaticized in Halkomelem.

Another way in which the count/mass distinction plays out in English is the possibility for bare mass N's and bare plurals. Again, Halkomelem differs in this respect: in argument position all N's must be preceded by a determiner, no matter whether they denote substance or individuals and no matter whether they appear in their unmarked or in the plural form (see Matthewson 1998).

[5] Some N's denoting substance were rejected in the context of a numeral. I assume that this has to do with ontological implausibility (just like it is weird to say *male woman* in English) rather than with ungrammaticality in the strict sense.

(20) *No bare N's in Halkomelem: unmarked or plural-marked*

a. í:mex *(te) swíyeqe
walking det man
'The man is walking.'

b. *tsel kw'éts-lexw *(te/ye) sí:wí:qe
1sg.s see-trans-3o man.pl
'I saw men.'

(21) *No bare N's in Halkomelem: N denoting substance*

a. tsel kw'éts-lexw (*te) syíts'em
1sg.s see-trans det sand
'I seen sand.'

b. tsel kw'éts-lexw (*te) sqélep
1sg.s see-trans det dirt
'I seen dirt.'

c. tsel kw'éts-lexw (*te) siyólh
1sg.s see-trans det wood
'I seen wood.'

Finally, given that there is no grammaticized count/mass distinction it follows that there will not be any mismatches between an ontological category (denoting substance) and a grammatical category (mass). To the best of my knowledge this is indeed the case in Halkomelem.

2.3 Summary and remaining questions

In this section we have started to answer the questions posited in section 1, repeated below for convenience:

i) Why does plural marking in Halkomelem not distinguish between count and mass N's.
ii) What is the source of the cross-linguistic difference between English and Halkomelem.

I have argued that Halkomelem differs from English in that it does not grammaticize the count/mass distinction. Note that this claim does not imply that a Halkomelem speaker does not know whether a given N denotes a substance or an individual. To the contrary, in Halkomelem the distinction is purely ontologically defined whereas in English we find certain mismatches between the ontological and the grammatical category. The differences between the two languages which fall out from this claim are summarized below:

	English	Halkomelem
plural marking distinguishes mass vs. count	yes	no
certain determiner/quantifiers dinstinguish mass vs. Count	yes	no
mismatches between ontological and grammatical category	yes	no

Table 1: differences between English are Halkomelem

The question I would like to take on in the remainder of this paper is about the source of this difference. In other words, even though from a descriptive point of view we have an understanding of the claim that a certain category is grammaticized or not, it is not immediately clear as to how to implement this in a formal theory of grammar, such as the principles and parameters framework and its minimalist versions (Chomsky 1995) adopted in this paper. In what follows I will develop a formal account for this distinction which will allow us to derive various other seemingly unrelated empirical properties of Halkomelem from a single source. In addition, the properties of Halkomelem will help us shed light on a debate about the nature of the count/mass distinction that is found in the current literature.

3 A formal implementation and its consequences

3.1 The structural source of the count/mass distinction

In the current literature dealing with the count/mass distinction, we find a variety of approaches regarding the source of this distinction – the main question evolving around whether or not the distinction is lexical or syntactic. In this paper, I will adopt the view that in languages with a grammaticized count/mass distinction, it is syntactically derived (see Allan 1980, Bosweld de Smelt 1997, Muromatsu 1998 among others for different versions of this idea). I will further assume in line with many recent proposals that "countability" can be derived in at least one of two ways: by means of classifiers or by means of plural marking. In other words I will assume that classifiers and plural marking serve the same function (Cheng and Sybesma 1999, Doetjes 1996, 1997, Peyraube 1998, Tang 1990, Wiese 2000) and can therefore be analyzed as occupying the head of the very same functional projection, call it Cl(assfier)P (Borer 2004) as in (22):

(22) a. $[_{DP}$ D $[_{ClP}$ **[plural]**$_{Cl}$ $[_{NP}$ N]]] → English count N
b. $[_{DP}$ D $[_{ClP}$ **[classfier]**$_{Cl}$ $[_{NP}$ N]]] → Chinese count N

I will further assume that the mass interpretation derives from N to Cl movement as in (23)

(23) $[_{DP}$ D $[_{ClP}$ **[N]** $[_{NP}$ ~~N~~]]] → mass N

This approach captures the observation that there is a tendency for languages without grammatical number to have classifiers – in other words that grammatical number is in complementary distribution with grammatical classifiers (Cheng and Sybesma 1999, Greenberg 1966, 1974, Ikoro 1994, Sanches and Slobin 1973). This approach implies that the grammaticization of the count/mass distinction depends on the presence of the functional category Cl, which is responsible for deriving countability.

We will now turn to the formal analysis of Halkomelem. I propose that the absence of a grammaticized count/mass distinction derives from the absence of the functional category Cl as in (24) (see Wiltschko 2004, to appear-a for exactly this claim based on the properties of plural marking in Halkomelem):

(24) $[_{DP}$ D $[_{NP}$ N]]

The remainder of this section is organized as follows. First I will show how the properties discussed in section 2 are to be analyzed structurally and then I will introduce several other predictions which fall out from the analysis.

3.2 Deriving the differences between Halkomelem and English

The first empirical difference between English and Halkomelem we have discussed above concerned plural marking: only in English, but not in Halkomelem plural marking distinguishes between mass and count N's. This immediately follows from the postulated structural difference: Only English but not Halkomelem has a functional category Cl which hosts number marking:

(25) a. $[_{DP}$ D $[_{ClP}$ **[plural]**$_{Cl}$ $[_{NP}$ N]]] → English
b. $[_{DP}$ D $[_{NP}$ N]]] → Halkomelem

Of course this raises the question as to how to analyze the Halkomelem plural marker. Here I will simply adopt the claim that the plural marker in Halkomelem is best analyzed as a modifier adjoined to roots (see Wiltschko to appear-b for arguments).

Next, we have seen that only in English but not in Halkomelem certain quantifiers distinguish between mass and count N's. Again, this follows straightforwardly from the present analysis in the following way. In English, Cl can be occupied by either the plural marker (yielding a plural interpretation), the ∅ singular marker (yielding a singular interpretation) as well as by the N (yielding a mass interpretation). The head which selects Cl, i.e. D (or Q) can be sensitive to the content of Cl. In other words, Cl can select for a specific instantiation of Cl (just like certain complementizers can select for the content of T in English). Thus, the co-occurrence restrictions between determiner/quantifiers and different kinds of N's can be analyzed as a matter of selection.

(26) $[_{DP}$ D $[_{ClP}$ **[plural/singular/"mass"]** $[_{NP}$ N]]]

In Halkomelem, which lacks Cl, no such selectional restriction can be established since the difference between singular, plural, and mass N's is not encoded in a functional head. Thus all determiners and quantifiers can co-occur with unmarked or plural marked N's independent as to whether they denote substance or individuals.

Finally, we have seen that in English we find mismatches between ontological and grammatical categories. That is, certain N's denote individuated objects but nevertheless pattern as mass N's. This follows from the assumption that the grammaticized count/mass distinction is a matter of structure, not of meaning. I will assume that such mismatches are idiomatically stored as obligatorily moving to Cl. This is similar in spirit to Marantz's (1997) claim that the obligatory nounhood of N's like *cat* is idiomatic. No such mismatches can ever arise in Halkomelem due to the lack of Cl.

3.3 Further predictions of the absence of ClP

In addition to deriving the properties introduced in section 2, the structural analysis for the count/mass distinction and the absence thereof in Halkomelem predicts a number of seemingly unrelated properties to which I will turn now.

3.3.1 No obligatory classifiers

Above, I have argued that plural marking does not instantiate Cl in Halkomelem. This in itself would not necessarily lead us to the conclusion that there is no Cl. That is, Halkomelem could be a classifier language of the Chinese-type which obligatorily requires classifiers for counting:

(27) *Obligatory classifiers in Chinese*

a. denwa ni dai
telephone two cl
'two telephones'

b. denwa ni hon
telephone two cl
'two telephone calls

Borer 2004: (3)

This approach receives initial support from the fact that Halkomelem does in fact appear to have an elaborate system of classifiers. There are approximately 20 so called lexical suffixes (i.e. bound morphemes with lexical meaning) which are used for counting different kinds of things. Below is a list of some of these classifiers (see Galloway 1993, Gerdts and Hinkson 1996, Gerdts 1999, Gerdts et al. 2002, Gerdts 2003, Suttles 2004 for extensive discussion):

(28) *Halkomelem classifiers*

a.	-ále	counting people
b.	-íws	counting birds
c.	-íqw	counting fish
d.	-álhp	counting trees (belonging to one person)
e.	-òls	counting fruit in a cluster
f.	-ó:llh	counting young (in a litter)
g.	- ówelh	counting canoes (belonging to one person)
h.	-ówes	counting canoe paddles (in a single canoe)
i.	-á:wtxw	counting houses (or buildings) of one person
j.	-eqel	counting containers
k.	-ámeth'	counting poles (tied together), sticks, ropes, threads
l.	-élwet	for counting garments
m.	-áyiws	for counting pants
n.	-mó:t	for counting kinds or parts of things
o.	-álh	for counting times

Galloway 1980, 1993: 33-36

However, what distinguishes the Halkomelem from the Chinese classifiers is their optionality. That is, in the context of counting, classifiers can but need not to be used:

(29) *Halkomelem N's denoting individuals following numeral*

a. tsel kw'éts-lexw isále sth'ím
1sg.s see-trans two berry/berry.pl
'I seen two berries.'

b. tsel kw'éts-lexw isále theqát
1sg.s see-trans two tree
'I seen two trees.'

This optionality is consistent with the present proposal according to which there is no functional category Cl in Halkomelem. As a consequence, the syntax of Halkomelem "classifiers" is predicted to be different from the syntax of Chinese classifiers, which do instantiate Cl and are therefore obligatory (Cheng and Sybesma 1999, Tang 1990).

3.3.2 Classifiers and plural markers are not in complementary distribution

A related prediction to the one discussed above has to do with the co-occurrence restriction on classifiers and plural markers in languages with Cl. For example, in Armenian classifiers and plural markers can never co-occur:

(30) *Armenian classifiers and plural marking are in complementary distribution*

a. yergu hovanoc uni-m
two umbrella have-1s
'I have 2 umbrellas'

b. yergu had hovanoc uni-m
two cl umbrella have-1s
'I have 2 umbrellas'

c. yergu hovanoc-ner uni-m
two umbrella-pl have-1s
'I have 2 umbrellas'

d. *yergu had hovanoc-ner uni-m
two cl umbrella-pl have-1s
'I have 2 umbrellas' Borer 2004 (39)

The Armenian pattern follows from the assumption that both plural markers and classifiers occupy the same position and as such are expected to be in complementary distribution. Again, the situation is different in Halkomelem which does not have the functional category Cl. Here the plural marker which is modificational can co-occur with lexical suffixes:[6]

(31) *Halkomelem classifiers and plural marking are not in complementary distribution*

a. tsel kw'éts-l-exw lhxwále siyó:lexwe
1s.sg.s see-trans-3o three-cl old.people.pl
'I saw three old people.'

b. iwólem lhq'áts-ále swóweles
play five-cl boy.pl
'Five boys were playing.'

c. tsel kw'étslexw yéysele slhelháli
1sg.s see-trans-3o two-cl woman.pl
'I saw two women.'

3.3.3 No indefinite determiner in Halkomelem

A final prediction of the present analysis has to do with the syntax of singular indefinite determiners. It has been argued that the indefinite article in English is best analyzed as a singularizer occupying Cl (Borer 2004, Davis and Matthewson 1999).

(32) $[_{DP}$ D $[_{ClP}$ **[a]** $[_{NP}$ tree]]]

[6] Aikhenvald (2003) identifies a number of languages where classifiers and plural markers are not in complementary distribution, including Yik, Nootka, Tlingit, Tucano, North Arawak, and South Dravidian. If the present analysis is on the right track, we predict that these languages either do not have Cl as a grammatical category or else that either the plural marker or the classifier does not occupy Cl.

This immediately accounts for the fact that the indefinite article in English is obligatory even in predicative contexts (33)a, i.e., it does not serve the same function as a determiner which turns a predicate into an argument; see Longobardi 1994 among others. Consequently, it is not compatible with mass N's because mass N's must move to Cl and are thus in complementary distribution with any other material occupying Cl (33)b. Furthermore, the indefinite determiner is restricted to singular N's since plural marking occupies Cl as well and is therefore in complementary distribution with the indefinite determiner.

(33) *The indefinite determiner as a singularizer in English*
a. Konrad is ***(a)** boy.
b. Konrad drank **(*a)** water.
c. Konrad saw **(*a)** trees.

The situation is very different in Halkomelem. Given that there is no functional category Cl, we expect there to be no indefinite determiner of the kind found in English. This is indeed what we find (see for example Matthewson 1998 for extensive discussion). The absence of indefinite determiners can most easily be seen on the basis of the fact that in predicative position, no determiner can precede a N.

(34) *No indefinite determiner in Halkomelem*
a. (*kw'/te) swíyeqe te í:mex
det man det walking
'It is a man that is walking'
b. tsel (*kw'/te) slhálì
1sg.s det woman
'I am a women.'

Furthermore, as already noted, there is no determiner which is prohibited to co-occur with N's denoting substance or N's marked for plural.

3.4 Summary and remaining questions

In this section, I have developed a formal (structural) account for the lack of a grammaticized count/mass distinction in Halkomelem. In particular, I have argued that English, but not Halkomelem has a structural position associated with "countability", namely Cl(assifier)P:

(35) a. $[_{DP}$ D $[_{CIP}$ **[plural]**$_{Cl}$ $[_{NP}$ N]]] → English
b. $[_{DP}$ D $[_{NP}$ N]]] → Halkomelem

With this account we were able to derive the properties discussed in section 2 as well as several further differences between the two languages. So

far we have identified the following properties of Halkomelem which set it apart from languages with Cl.

(36) *Properties of Halkomelem that follow from the absence of Cl*
- a. plural marking does not distinguish between mass and count N's
- b. no determiner/quantifier distinguishes between mass vs. count N's
- c. there are no mismatches between ontological and grammatical category
- d. there are no obligatory classifiers
- e. classifiers and plural marking are not in complementary distribution
- f. there is no indefinite determiner of the type found in English

The question we still need to address concerns the implications of this generalization for the cross-linguistic behavior of nominal roots.

4 The interpretation of nominal roots

In much of the literature which assumes a single functional category hosting classifiers and plural marking it is explicitly assumed that nominal roots denote undivided "stuff" (see for example Borer 2004). If undivided stuff is not individuated (i.e. classified, pluralized or singularized) the default interpretation is a mass interpretation. However, it is assumed that in order to *count* N's they first have to be divided, a function fulfilled by Cl. If we were to adopt this hypothesis then Halkomelem presents an interesting problem given that it lacks the category Cl. In particular, since Halkomelem N's can be counted without classifiers or plural marking one might be lead to the conclusion that Halkomelem N's are inherently (i.e., lexically) count N's. Such an analysis has been proposed for St'at'imcets by Davis and Matthewson 1999. In particular, they argue that all N's in St'at'imcets denote (characteristic functions of) sets of (concrete) individuals. If correct, this analysis would support the view of Chierchia (1998) who argues that languages differ with respect to the denotation of N's. In other words, this view would support the notion of a semantic parameter.

However, in this section I will show on empirical grounds that there are problems with such an analysis. Rather I will argue for an alternative, which makes such a semantic parameter obsolete. Suppose that N's are never inherently (lexically) specified for either mass or count. It will still be the case that they can denote substances or individuals but this is a lexico-semantic property and not a grammatical property. Given that Cl is missing in Halkomelem it follows that it is NOT a property of UG that the denotation of N's is not countable without being divided first. If so, we could argue that it is never a property of N's that they cannot be counted without being divided. Rather, I will assume that lexical entries (listemes) do not have **any** grammatical properties. Any apparent grammatical information is structural in nature. Inherent mass N's (mismatches) are idiomatic, that is they are stored in the

dictionary as obligatorily moving to Cl. If this is on the right track it follows that it is not a property of the lexical category N that it has to be divided to be counted. Rather it is a property of the functional architecture of languages like English and Chinese that they have an obligatory Cl head which must be filled. This accounts for the appearance that N's have to be divided before they can be counted. In Halkomelem, where the structure is missing, there is nothing that must be obligatorily filled (neither plural nor classfier). Consequently, there is no grammaticized count/mass distinction. This view implies that the existence of grammatical subcategories implies the existence of syntactic structure.

In what follows I will present evidence to the effect that the denotation of N's is not inherently count but rather unmarked. The evidence I will discuss includes the following:

i) N's can denote unindividuated substance without a "massifier"
ii) N's can denote individuated substance without a classifier
iii) N's can denote kinds without a "kindifier"

4.1 Mass interpretation is possible without a massifier

In previous sections we have already seen evidence that Halkomelem does have N's which denote (undivided) substance (i.e. what would be a mass N in English):

(37) *Halkomelem N's denoting substance*

a. tsel kw'éts-l-exw te syít'sem
1sg.s see-trans-3o det sand
'I saw sand.'

b. tsel kw'éts-l-ewx te sqélep
1sg.s see-trans-3o det dirt
'I seen some dirt.'

c. tsel kw'éts-l-exw te siyólh
1sg.s see-trans-3o det wood
'I seen some wood.'

Suppose for the moment that it was indeed the case that all N's in Halkomelem denote (characteristic functions of) sets of concrete individuals (i.e. count N's). If that was the case, we would not expect N's like (37) at all. Instead, one might expect special marking in order to achieve a "mass" interpretation. This is certainly the case in languages like English, where count N's can co-occur with so-called massifier (a special kind of classfier). Such massifiers create different units for counting and can co-occur both with mass N's as well as count N's:

(38) *Massifiers in English:*

a.	a group of boys	a group of people
b.	a bucket of ants	a bucket of sand
c.	a pile of chairs	a pile of furniture

Give the existence of massifiers, we might expect that Halkomelem (if indeed all N's are count N's) constitutes the mirror image of Chinese. That is, for Chinese it has been argued that all N's are mass (Chierchia 1998), based on the fact that they need to be obligatorily classified in order to count them. Given the logic of this argument we would expect that Halkomelem N's need to be obligatorily massified in order to denote undivided substance. This is clearly not the case as shown in (37) which has no sign of a massifier.

Note furthermore that it is not the case that Halkomelem does not have ways to express the meaning of a massifier. That is, we find full N's used as container N's which can combine with either N's that denote substance or individuals:

(39) *Full container N*

a. tsel kw'éts-l-exw isále sqwówes siyíts'em
1sg.s see-trans-3o two bucket sand
'I seen two buckets of sand.'

b. tsel kw'éts-l-exw isále sqwówes sth'ím/sthíthem
1sg.s see-trans-3o two bucket berries
'I seen two buckets of berries.'

Furthermore, we also find lexical suffixes which function as container phrases:

(40) *Lexical suffix as container N*

a. tsel kw'éts-l-exw isále-qel siyíts'em
1sg.s see-trans-3o two-container sand.pl
'I seen two buckets of sand.'

b. tsel kw'étslexw isále-qel sqélep
1sg.s see-trans-3o two-container dirt
'I've seen two buckets of dirt.'

For completeness note that full container N's can also co-occur with the corresponding lexical suffix:

(41) *Lexical suffix + container N*

tsel kw'éts-l-exw isále-qel sqwówes sqélep
1sg.s see-trans two-container bucket dirt
'I've seen two buckets of dirt.'

This suggests that container N's are not associated with a unique functional head.

The fact that Halkomelem allows for a mass interpretation without an obligatory massifier is unexpected if all N's in Halkomelem were count N's. Rather the above data supports the present claim according to which N's in Halkomelem are underspecified for the count/mass distinction. Lexico-semantic

features determine whether they denote a substance or individuals and a grammaticized count/mass distinction plays no role in the language.

4.2 Grains are just small amounts

Another difference between languages like English that have a grammaticized count/mass distinction and Halkomelem which lacks this distinction has to do with the set of classifiers which name the unit of natural occurrence of the substance the N' denotes. For example, in English *sand* and *water* are mass N's:

(42) a. I didn't see (much) water.[7]
b. I didn't see (much) sand.

However, there are classifying (full) N's which can turn a phrase containing these N's into countable units by naming the natural occurrence of these substances:

(43) a. I didn't see (many) **drops** of water.
b. I didn't see (many) **grains** of sand.

The grammatical necessity for such classifiers to turn mass N's into count N's follows from the fact that the count/mass distinction is grammaticized in English.

The situation is again different in Halkomelem. I haven't been able to find any classifiers of the above type (*drop/grain*). As far as I can see there are two strategies available. First, there is a special word meaning 'drop of water' which is not at all related to the word for water:

(44) a. th'q'ém/th'eq'ém
'drop of water'
b. qo
'water'

The second (productive) strategy involves modifiers meaning 'small/little'. That is, when we talk about 'small/little' sand in Halkomelem it seems to be the case that individual grains satisfy the requirement of being small. In other words, grains are simply small amounts:

(45) a. i'axwíl syíts'em
small sand
'grain of sand'

[7] Note that the mass quantifier *much* behaves somewhat like a polarity item, i.e., it cannot be used in affirmative environments:
i) *I saw much water.
ii)*I saw much sand.

b. tsel kw'éts-l-exw qex emémel syíts'em
1sg.s see-trans-3o Q small sand
'I saw many grains of sand.'
c. tsel kw'éts-l-exw isále emémel syíts'em
1sg.s see-trans-3o two small sand
I saw two grains of sand

If the adjectives here are really just regular modifiers with the meaning of 'small/little' we expect a number of properties going along with this construction. First, we expect that it is not necessary to interpret 'small sand' as 'grain of sand'. That is, any small amount of sand should satisfy the requirement imposed by the modifier. This is indeed the case as shown below:

(46) tsel kw'éts-l-exw i'axwíl siyíts'em
1sg.s see-trans-3o small sand.pl
'I seen a little bit of sand.'

Note that this property provides evidence against the assumption that all N's are count N's in Halkomelem. Clearly, the mass interpretation is available.

Next, we predict that the modifier 'small' can also co-occur with N's denoting substances that do not have a natural smallest unit of occurrence. This prediction is indeed borne out. For such N's the modifier is best translated as either 'piece of N' or 'little bit of N':

(47) a. I'axwíl siyólh
piece of wood
b. tsel kw'éts-l-exw (te) i'axwíl siyólh
1sg.s see-trans-3o det small wood
i) 'I saw a piece of wood.'
ii) 'I saw a little bit of wood.'

(48) a. tsel kw'éts-l-exw qex emémel siyólh
1sg.s see-trans-3o Q small wood
'I saw many pieces of wood.'
b. tsel kw'éts-l-exw isále emémel siyólh
1sg.s see-trans-3o two small wood
'I saw two pieces of wood.'

(49) a. tsel kw'éts-l-exw i'axwíl sqélep
1sg.s see-trans-3o small dirt
'I seen a little bit of dirt.'
b. tsel kw'étslexw emémel sqélep
1sg.s see-trans-3o small dirt
'I seen a little bit of dirt.'

Finally, we predict that these modifiers are not restricted to N's denoting substance. Rather, we also expect them to co-occur with N's denoting individuals, in which case the most natural interpretation is for them to measure the size of the individual (just like *small* in English). Note that this seems to be independent of whether the N is marked for plural or not.

(50) a. tsel kw'éts-l-exw i'axwíl sth'ím/sth'eth'ím
1sg.s see-trans-3o small berry/berry.pl
'I saw a small little berry/berries.'

b. tsel kw'éts-l-exw qex emémel sth'ím/sth'eth'ím
1sg.s see-trans-3o many small berry/berry.pl
'I saw lots of small little berries.'

c. tsel kw'éts-l-exw isale emémel sth'ím
1sg.s see-trans-3o two small berry
'I saw two small berries.'

(51) a. tsel kw'éts-l-exw (te) i'axwíl theqát/ theqtheqát
1sg.s see-trans-3o (det) small tree/tree.pl
'I saw a small little tree/small little trees.'

b. tsel kw'éts-l-exw qex emémel theqát/theqtheqát
1sg.s see-trans-3o Q small tree/tree.pl
'I saw lots of small little trees.'

c. tsel kw'éts-l-exw isále emémel theqát
1sg.s see-trans-3o two small tree/tree.pl
'I saw two small trees.'

In this subsection we have seen further evidence that not all N's denote (characteristic functions of) sets of (concrete) individuals. And furthermore the fact that the modifier meaning 'small/little' can equally combine with N's denoting substance or individuals supporting the claim that there is no grammaticized count/mass distinction in Halkomelem.

4.3 A kind interpretation is possible

Assuming that N's in Halkomelem are unmarked (and not inherently count) we further predict that they can also denote kinds. (In fact, this might be the default interpretation of N's cross-linguistically; see Carlson 1978.) That N's can indeed refer to kinds without any special marking can be shown on the basis of the following data.

First, there is a modifier *letslotstel* which is used when talking about 'different kinds of N'. Crucially, this modifier must pick out kinds and cannot pick out individuals. Note also, that this modifier combines both with N's denoting substance (52) as well as N's denoting 'individuals' (53):

(52) a. tsel kw'éts-l-exw te mekw' letslótstel siyíts'em
1sg.s see-trans-3o det Q different.kind sand

i) 'I seen many different kinds of sand.'
ii) *'I seen many different grains of sand'

b. tsel kw'éts-l-exw qex letslótstel siyólh
1sg.s see-trans-3o Q different.kind wood
i) 'I seen many different kinds of wood.'
ii) *'I seen many different pieces of wood.'

(53) a. tsel kw'éts-l-exw qex letslótstel theqtheqát
1sg.s see-trans-3o Q different.kind wood.pl
i) 'I seen many different kinds of trees.'
ii) *'I seen many different trees.'

b. tsel kw'é ts-l-exw qex letslótstel sth'ím/ sth'eth'ím
1sg.s see-trans-3o Q different.kind berry/berry.pl
i) 'I seen many different kinds of berries.'
ii) *'I seen many different berries.'

Another piece of evidence for the unrestricted availability of the kind interpretation has to do with the interpretation of the lexical suffix *-mó:t*. This lexical suffix allows for a (sub)kind as well as a (sub)part interpretation for both N's denoting substance (54) as well as N's denoting individuals (55):

(54) a. tsel kw'éts-l-exw isále-mó:t siyí ts'em
1sg.s see-trans-3o two-part sand.pl
i) 'I seen two parts of sand.'
ii) 'I've seen two kinds of sand.'

b. tsel kw'éts-l-exw isále-mó:t sqélep
1sg.s see-trans-3o two-part sand.pl
i) 'I seen two parts of dirt.'
ii) 'I seen two kinds of dirt.'

c. tsel kw'éts-l-exw isále-mó:t siyólh
1sg.s see-trans-3o two-part sand.pl
i) 'I seen two parts of wood.'
ii) 'I seen two kinds of wood.'

(55) a. tsel kw'éts-l-exw isále-mó:t theqát
1sg.s see-trans-3o two-part tree
i) 'I seen two parts of trees.'
ii) 'I seen two kinds of trees.'

b. tsel kw'éts-l-exw isále-mó:t sth'ím
1sg.s see-trans-3o two-part berry
'I seen two parts of berries.'
'I seen to kinds of berries.'

c. tsel kwél-lexw isale-mó:t sth'óqwi/sth'eth'qwoy
1sg.s catch-trans-3o two-part fish
'I caught 2 different kinds of fish.'

We have now provided evidence that the kind interpretation of N's is available without any overt marking, that is there is no overt 'kindifier'. This is consistent with our claim that the denotation of N's in Halkomelem is unmarked.

5 Conclusion

At the beginning of this paper we posited the following two questions

i) Why does plural marking in Halkomelem not distinguish between count and mass N's.
ii) What is the source of the cross-linguistic difference between English and Halkomelem.

The answers we have provided in the course of this paper are as follows.

i) Plural marking in Halkomelem does not distinguish between count and mass N's because there is no count/mass distinction.
ii) The source of this cross-linguistic difference between English and Halkomelem is the absence of the functional category *Cl(assfier)*. Following much recent research it is assumed that this category is responsible for hosting either number marking (in English-type languages) or classifiers (in Chinese-type languages).

The following properties of Halkomelem fall out from the absence of Cl:

(56) *Properties of Halkomelem that follow from the absence of Cl*
- a. plural marking does not distinguish between mass and count N's
- b. no determiner/quantifier distinguishes between mass vs. count N's
- c. there are no mismatches between ontological and grammatical category
- d. there are no obligatory classifiers
- e. classifiers and plural marking are not in complementary distribution
- f. there is no indefinite determiner of the type found in English
- g. classifiers do not distinguish between mass and count N's

The data and analysis presented imply that the count/mass distinction is always a grammatical property but it is not universally instantiated. Nevertheless, it is probably universally the case that N's can denote substance or individuals. But this is not a grammatical property but purely based on ontological distinctions.

Furthermore, the Halkomelem data suggest that it is not a property of N's that they must be individuated in order to be counted. Rather I have proposed that if a language gives the impression that this is the case (like for example English or Chinese) it is a property of a grammatical (i.e., functional category): because English and Chinese have Cl, it must be filled. Therefore,

English N's must be marked plural and Chinese N's must be classified if they are counted.

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