

The count-mass distinction in St'át'imcets (and beyond)*

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Abstract: There has been little systematic investigation of the count-mass distinction in Salish; previous work is confined to a brief discussion on St'át'imcets in Davis and Matthewson (1999), and a fuller treatment of Upriver Halkomelem in Wiltschko (2005, 2009, 2012). Both conclude that the distinction is not grammatically instantiated in Salish. Based on the pattern of number marking on determiners and the distribution of plural reduplication on nouns, I show that mass and count nouns must be grammatically distinguished in St'át'imcets. I then turn to the Upriver Halkomelem evidence, and argue that though it differs from St'át'imcets in the inflectional encoding of number, it too can be shown to grammatically encode the count-mass distinction.

Keywords: Salish, St'át'imcets, Upriver Halkomelem, syntax, semantics, count-mass

1 Introduction

It is a sobering thought that after nearly half a century of sustained linguistic investigation, there are so many areas of Salish grammar that remain only partially understood. This speaks, of course, to the richness and sophistication of the languages themselves, but also to the theoretical (or anti-theoretical!) preoccupations of those investigating them, which inevitably lead to a focus on certain questions to the neglect of others. It is also a timely reminder that in the few years that we have left with the current generation of first language speakers, it is important to identify and examine areas which for one reason or another have hitherto escaped detailed attention.

The distinction between count and mass nouns is one such area. As far as I am aware, previous work on this distinction in the Salish literature has been confined to St'át'imcets (Davis and Matthewson 1999) and especially Upriver Halkomelem (Wiltschko 2005, 2008, 2012). For both languages, it has been claimed that the distinction is absent, a radical proposal which invites more detailed investigation. In this paper, I take up that invitation.

I begin in Section 2 by reviewing the core diagnostics for the mass-count distinction, as established by cross-linguistic work over the past twenty years. In

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Section 3, I turn to a detailed examination of St’át’imcets, presenting new data which I think rather conclusively establish the distinction, contra to Davis and Matthewson’s earlier speculation. In Section 4, I go on to compare the St’át’imcets facts to those reported by Wiltschko for Upriver Halkomelem: I conclude that in spite of morphosyntactic differences between the two languages which partially obscure the distinction in Halkomelem, there is good evidence that both languages distinguish count from mass nouns. I finish in Section 5 by providing a preliminary cross-linguistic typology of the distinction.

2 Core diagnostics for the count-mass distinction

In cross-linguistic work on the count-mass distinction (see e.g. Chierchia 1998, 2010, Cheng and Sybesma 1999, and the papers in Massam 2012, *inter alia*) the following set of core diagnostics has emerged (illustrated here by English, which tests positively for all of them):

- (i) *Number marking*. In languages such as English with a grammaticalized number marking system, count nouns typically inflect for (plural versus singular) number, trigger number concord in the nominal system, and trigger number agreement on the verb, while mass nouns do not.

- (1) a. Those potatoes/apples/candies **are** on the table.
b. # Those rices/waters/gums **are** on the table.

In other languages, classifiers can take the place of number marking, but still distinguish mass from count nouns. Mandarin, for example, has both classifiers and ‘massifiers’, the former for count and the latter for mass nouns (Cheng and Sybesma, 1999). As emphasized by Chierchia (2010), however, there are also languages where number does not appear to be grammaticalized at all. Dëne Suline (Athabaskan) under Wilhelm’s (2008) analysis fits this ‘number neutral’ profile, though it tests positive for other count-mass diagnostics.¹

- (ii) *Count and mass quantifiers*. In many languages, quantifiers can be specialized to take either count restrictions (2), or mass restrictions (3); others can take both (4).²

- (2) a. Many/several/(a) few apples fell from the table.
b. # Many/several/(a) few water spilt from the bottle.

¹ In particular, for ‘countability’ (diagnostic (iii) below).

² The distinction is actually a little more fine-grained once number marking is taken into consideration: the examples in (2) only take a plural count restriction, whereas *every*, *each*, and *a(n)*, which are equally allergic to mass nouns, take only a singular count noun restriction.

- (3) a. Much/a bit of/a little water spilt from the bottle.
b. # Much/a bit of/a little apples fell from the table.
- (4) a. All the/a lot of/some/no apples fell from the table.
b. All the/a lot of/some/no water spilt from the bottle.

This diagnostic is known to vary widely across languages: for example, languages in the Pacific Northwest do not generally distinguish ‘many’ from ‘much’. Instead, they employ a general-purpose quantifier with the distribution of ‘a lot (of)’: see Section 3.2 below.

- (iii) *Countability*. Identified by Chierchia (2010) as the ‘signature property’ of count nouns, this diagnostic describes the ability of count but not mass nouns to be directly selected by numerals:
- (5) a. I bought three potatoes/apples/candies.
b. # I bought three rice(s)/wine(s)/salsa(s)

Notoriously, however, this distinction may be obscured by what are sometimes known as ‘apportionment functions’. These functions coerce mass nouns into showing count behaviour by dividing them covertly into contextually and/or conventionally appropriate portions, as shown in (6). A special case of apportionment is represented by ‘kind of’ readings, which are quite prominent for certain mass nouns in English (6d):

- (6) a. Three rices on table six!
b. Four waters for table eight!
c. Two salsas for table nine!
d. I sampled two rices/wines/salsas.

While in English the felicity of apportioned readings varies according to a number of factors, including real-world plausibility and conventional usage, Deal (2013) argues that in Nez Perce, a covert apportionment function can *always* be grammatically supplied for any given pragmatic context. This is important, because it provides evidence that apportionment is not simply a pragmatically controlled ‘universal packager’, but a grammatically mediated operation which may be subject to parametric variation.³

It is important to emphasize that though all three core diagnostics for the count-mass distinction coincide in English, this is not necessarily the case cross-

³ Another well-known source of cross-linguistic variation in countability is the existence of numeral classifier languages, which do not allow nouns to be directly counted, but instead require them to compose with a classifier first. Krifka (1995) argues that counting universally involves a measure function, introduced in classifier languages by an overt classifier, and in non-classifier languages by a covert one; under this view, apportionment is always necessary, with count nouns being distinguished from mass nouns only by being lexically supplied with an ‘atomic’ apportionment/measure function.

linguistically: one or more of the tests may be obscured for independent reasons, leading to the partial or perhaps even total occlusion of the distinction in the grammars of individual languages. For example, Yudja (Tupian) as analyzed by Lima (2014) appears to be freely apportioning (like Nez Perce), lacks selective quantifiers (like Salish languages), and is number neutral, like Dëne Suline; it therefore fails to test positive for *any* of the core diagnostics for the count-mass distinction. This poses a particularly interesting analytical question: if the count-mass distinction is undetectable in a given language, is it legitimate to say it does not exist in the mind of a speaker of that language, or is it latently present but simply not expressed? For a promising attempt to tackle this question empirically, see Lima (2014).

With this background in mind, let us now turn to Salish, beginning with St’át’imcets.

3 St’át’imcets

In the only previous investigation of the count-mass distinction in St’át’imcets, Davis and Matthewson (1999) (henceforth D&M) make the following (radical) claim:

(7) *All nouns in St’át’imcets denote sets of individuals*

They go on to comment: ‘We intend (71) [i.e., (7)] to be understood in a strict sense, that also excludes mass nouns; we are literally claiming that in St’át’imcets Ns denote sets of atomic individuals, and not un-individualized masses.’

It turns out that this claim is mistaken: contrary to first appearances, St’át’imcets does indeed show a robust count-mass distinction in its nominal system, as diagnosed particularly by number marking (Section 3.1). It follows that not all St’át’imcets nouns denote (sets of) atoms: some must be substance-denoting, just as in English.

3.1 Number marking

The principal empirical support adduced by D&M for their contention that all nouns are atomic comes from the distribution of singular and plural determiners. Unusually for a Salish language, St’át’imcets obligatorily encodes number in the ‘existence-asserting’ part of its determiner system, as shown in the following table, adapted from Matthewson (1998):

(8) *St’át’imcets Determiners*

		assertion-of-existence (a-o-e)			¬ a-o-e
		present	absent	invisible	
- plural		<i>ta/ti</i> =...= <i>a</i>	<i>na/ni</i> =...= <i>a</i>	<i>ku</i> =...= <i>a</i>	<i>ku</i>
+ plural	-collective	<i>i</i> =...= <i>a</i>	<i>nelh</i> =...= <i>a</i>	<i>kwelh</i> =...= <i>a</i>	<i>(kwelh)</i>
	+ collective	<i>ki</i> =...= <i>a</i>			

Singular count nouns obligatorily take singular determiners (9a), and plural count nouns obligatorily take plural determiners (9b).⁴

- (9) a. wa7 wáz'-am **ta=sqáx7=a**
 IPFV bark-MID **SG.DET=dog=EXIS**
 'A dog is barking.'
 ≠ 'Some dogs are barking.'
- b. wa7 wáz'-am **i=sqáx7=a**
 IPFV bark-MID **PL.DET=dog=EXIS**
 'Some dogs are barking.'
 ≠ 'A dog is barking.'

This much is unremarkable; but D&M observe that unlike in English, 'mass' nouns freely take plural Ds (10):

- (10) a. wa7 **i=máq7=a** l=ta=c.wálh=a
 IPFV **PL.DET=snow=EXIS** on=DET=road=EXIS
 'There's snow on the road.'
- b. áts'x-en **i=qú7=a**
 see-DIR **PL.DET=water=EXIS**
 'Look at the water!'

They conclude that 'mass' nouns are treated simply as plural count nouns in St'át'imcets.

However, it turns out that this is only part of the story. In fact, plural marking is actually *optional* with determiners on mass nouns (11)–(15), whereas it is obligatory on plural count nouns, as shown above in (9b).

- (11) a. cw7it **i=máq7=a** l=ta=sqwém=a
 many **PL.DET=snow=EXIS** PREP=SG.DET=mountain=EXIS
 'There is a lot of snow on the mountain.' (Alexander et al n.d.)

⁴ St'át'imcets examples are given in the van Eijk orthography adopted by all St'át'imc communities. Glosses generally follow the Leipzig Glossing Rules except ABS = absent, ACT = active intransitive, CIRC = circumstantial modal, DIR = directive transitive, EXCL = exclusive, EXIS = existential, IND = indirective transitive, INST = instrumental suffix, LOC = locative, NCT = non-control transitive, OOC = out-of-control, RED = reduplication, RLT = relational transitive.

- b. p'a7cw s=cw7it=s **ta=máq7=a**
 more NMZ=many=3POSS **SG.DET=snow=EXIS**
 l=ki=sqwém=a
 PREP=PL.DET=mountain=EXIS
 'There's more snow on the mountains.' (Alexander et al. n.d.)

- (12) a. wa7 n-t'ak'w **i=qú7=a**
 IPFV LOC-flow **PL.DET=water=EXIS**
 l=ti=xzúm=a n-gwáts'-cal-ten
 PREP=SG.DET=big=EXIS LOC-irrigate-ACT-INST
 'There was water in the big irrigation ditch.' (Matthewson 2005:156)

- b. tsícw-almen l=ti=tsitcw-lhkálh=a
 reach-almost PREP=SG.DET=house-1PL.POSS=EXIS
ti=qú7=a
SG.DET=water=EXIS
 'The water almost reached our house.' (Matthewson 2005:164)

- (13) a. wá7=lhkacw=t'u7 zewát-en **i=qwal'ílh=a**,
 IPFV=2SG.SUB=EXCL know-DIR **PL.DET=pitch=EXIS**
 stéxw=t'u7 q'ix.
 really hard
 'You know what pitch is, it is really hard.'
 (van Eijk and Williams 1981:10)

- b. sáol-vl **ta=qwal'ílh=a**
 liquid.runs-OOC.RED **SG.DET=pitch=EXIS**
 lh=w=as qemp
 COMP=IPFV=3SBV hot
 'Pitch runs when it's hot.' (Alexander et al. n.d.)

- (14) a. Mék'-en **ta=máqin-sw=a**
 slick-DIR **SG.DET=hair-2SG.POSS=EXIS**
 'Slick your hair down.' (Alexander et al. n.d.)

- b. pináni7 papt wa7 zact **i=n-máqin=a**
 back.then always IPFV long **PL.DET=1SG.POSS-hair=EXIS**
 nilh kwes q'áq'lha7
 COP DET+NOM+IPFV+3POSS braided
 'Back then my hair was always long, so I wore it in braids.'
 (Matthewson 2005:132)

- (15) a. mays i=szaq'7-úl=a lhel=**ta=qú7**=a
 made PL.DET=bread-real=EXIS from=**SG.DET=water**=EXIS
 múta7 saplín
 and flour
 'Bannock is made from water and flour.'
- b. mays i=szaq'7-úl=a lhel=**ki=qú7**=a⁵
 made PL.DET=bread-real=EXIS from=**PL.DET=water**=EXIS
 múta7 saplín
 and flour
 'Bannock is made from water and flour.'
 Consultant's comment: 'Yep, that works too.'

As far as I can see, there is no appreciable semantic difference between mass nouns with singular and plural determiners. The plural versions do not necessarily signal a greater quantity of the substance denoted by the noun, nor do they necessarily refer to 'apportioned' masses. In (11), for example, the singular *ta máq7a* 'snow' in (b) refers to snow distributed over more than one mountain, while the plural *i máq7a* 'snows' in (a) refers to a mass of snow on one mountain (both examples are from the same source). Likewise, (12a) and (12b) (from the same speaker, in the same narrative) both refer to single masses of water (an irrigation ditch in (a), and a flood in (b)). And the elicited sentences in (15), from the same speaker in the same session, are identical in every way except for the number of the determiner on the prepositional object.⁶

⁵ The determiner *ki*= is the predictable allomorph of plural *i*= that occurs after prepositions.

⁶ It is nevertheless important to mention that 'optionality' in this case is not a simple notion. For any given sentence containing a mass noun, speakers almost always choose either a singular or a plural determiner. However, the choice is arbitrary, and speakers often seem unsure of which determiner to use. For example, one consultant volunteered the following sentence with a singular determiner on a mass noun:

- (i) áp'-an **ti=ptél7**=a l=ti=sts'úqwaz'=a
 wipe-DIR **SG.DET=blood**=EXIS PREP=**SG.DET=fish**=EXIS
 'Wipe the blood off the fish.'

But when subsequently asked whether she preferred the singular *ti*= or the plural *i*= for this case, she replied '*i*= is better.' Furthermore, consultants' explanations for their determiner choices often contradict each other (though in interesting ways). For example, the same consultant who volunteered (i) preferred to use a plural determiner in the following sentence:

(16) ka-lhwál-s=kan-a i=/*ta=n-stem'tétem'=a
CIRC-leave.behind-CAUS=1SG.SUB-CIRC PL.DET=/*SG.DET=clothes=EXIS
'I accidentally left my clothing/belongings behind.'

As can be observed in (15), the determiner system is not the only place where number is marked in St'at'imcets. Like many other Salish languages, it also has a stem-level process of CVC reduplication which yields a plural meaning when applied to count nouns. Here are some typical examples of singular and plural count nouns:⁷

- She then commented: 'Can't use that word [*ti=*] because it's lots; *ti=* always means just one.' A second consultant preferred to use a singular determiner for the example in (iii):

- His comment on the plural version was: ‘That’s pretty hard but it would work, because $i =$ means something like “what you can count”, but some people [...] would use something like that.’

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(17)		SINGULAR	PLURAL
a.	‘child’	sk’úk’wmi7t	sk’wemk’úk’wmi7t
b.	‘friend, relative’	snúk’wa7	snek’wnúk’wa7
c.	‘man’	sqaycw	sqáyqeycw
d.	‘woman’	smúlhats	smelhmúlhats ⁸
e.	‘First Nations person’	úcwalmicw	ecw7úcwalmicw
f.	‘tree’	srap	srepráp
g.	‘mountain’	sqwem	sqwémqwem

Pluralized nouns in argument positions obligatory take plural determiners:

- (18) a. t’iq **i=smelh-múlhats=a**
arrive **PL.DET=PL.RED-woman=EXIS**
‘Some women arrived.’
- b. *t’iq **ta=smelh-múlhats=a**
arrive **SG.DET=PL.RED-woman=EXIS**
* ‘A women arrived.’

However, the converse is not true: plural determiners quite happily take non-reduplicated count nouns:

- (19) a. t’iq **ta=smúlhats=a**
arrive **SG.DET=woman=EXIS**
‘A woman arrived.’
- b. t’iq **i=smúlhats=a**
arrive **PL.DET=woman=EXIS**
‘Some women arrived.’

Not all count nouns have reduplicative plurals: those that lack them also occur freely with plural determiners and a plural interpretation (see e.g. *sqáxa7* ‘dog’ in (9b) above).

However, significantly, mass nouns *systematically* lack reduplicative plurals:

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- (iv) pála7 **ecw.úcwalmicw** **i=st’át’imc=a**
one **PL.RED-person** **PL.DET=st’át’imc=EXIS**
‘The St’át’imc are one people.’

(Alexander et al. n.d.)

⁸ This is the Upper St’át’imcets form: the Lower dialect has *syáqtsa7* for ‘woman’, which reduplicates as *syeqyáqtsa7*.

(20)		SINGULAR	*PLURAL
a.	‘snow’	máqa7	* meq máqa7
b.	‘water’	qu7	* qú7 qu7
c.	‘ice’	sk’ímal’ts	* sk’emk ’ímal’ts
d.	‘mud’	sk’vlht	* sk’vlhk ’vlht

The cases in (20c) and (20d) are particularly interesting in that they are derived via nominalization (*s-* prefixation) of non-nominal stems (*k’ímal’ts* ‘freeze’, and *k’vlht* ‘be muddy’, respectively). The latter *permit* CVC reduplication (with a distributive sense of ‘freeze/be muddy here and there’):

- (21) wa7 **k’em-k’ímal’ts** ti=c.wálh=a
 IPFV **PL.RED-freeze** SG.DET=road=EXIS
 ‘There are patches of ice on the road / The road is frozen here and there.’

- (22) a. wa7 i=sk’vlht=a l=ti=c.wálh=a
 IPFV PL.DET=mud=EXIS PREP=SG.DET=road=EXIS
 ‘There’s mud on the road.’

- b. wa7 **k’vlh-k’vlht-áw’s** ti=c.wálh=a
 IPFV **PL.RED-muddy-road** SG.DET=road=EXIS
 ‘There are patches of mud on the road/ The road is muddy here and there.’

In other words, plural reduplication is specifically out for mass *nouns*, even when the same stem can be reduplicated (with a distributed meaning) on a derivationally related verb or adjective.

Like number on determiners, stem-level reduplication thus serves as a positive test for the count-mass distinction in St’át’imcets, though in a rather different fashion: while count nouns receive a plural interpretation when reduplicated, mass nouns simply fail to reduplicate at all.

3.2 Count and mass quantifiers

As documented in Matthewson (1998), there are no determiner quantifiers in St’át’imcets (or in Salish more generally). This means that in argument positions, quantificational elements will always form part of DPs, making it rather difficult to test for the sensitivity of quantifiers to the count-mass distinction, as opposed to that of determiners.

One way to sort the two out is to employ quantifiers in environments where number marking on determiners is neutralized. For the non-numerical weak quantifiers *cw7it* ‘much, many, a lot of’ and *k’wík’wena7* ‘(a) few’, there are two such environments: in predicate position, where the quantifiers lack determiners altogether, and in ‘polarity’ environments, where they co-occur with the number neutral determiner *ku=* (for the latter, see Matthewson 1998, 1999). Weak

quantifiers in these environments are illustrated in (23)–(24) and (25)–(26), respectively.

- (23) [cw7it/k'wík'wena7 qu7] na=n-s-záw'em=a
 [much/little water] SG.ABS.DET=1 SG.POSS-NOM-fetch=EXIS
 'I fetched a lot/a little bit of water.'
- (24) [cw7it/k'wík'wena7 stsáqwem] nelh=n-s-q'weláw'-em=a
 [much/little saskatoon] PL.ABS.DET=1 SG.POSS-NOM-pick=EXIS
 'We picked many/a few saskatoon berries.'
- (25) n-t'ak'w-ci-túmul-i [ku=cw7it/k'wík'wena7
 LOC-pour-IND-1 PL.OBJ-PL.IMP [DET=much/little
 sxusum-átkwa7]
 soapberry-liquid]
 'Pour us a lot/a little bit of *sxúsum* (soapberry juice).'
- (26) n-lham'-ci-túmul-i [ku=cw7it/k'wík'wena7 petáok]
 LOC-put.in-IND-1 PL.OBJ-PL.IMP [DET=much/little potato]
 'Serve us a lot of/a few potatoes.'

This test yields negative results for the count-mass distinction: weak quantifiers are perfectly comfortable with either mass or count nouns, with no obvious semantic difference between the two.

In contrast to weak quantifiers, strong (proportional) quantifiers do not occupy predicate position when they quantify over individuals, and generally do not co-occur with *ku*=, because they presuppose the existence of their DP restriction and therefore require assertion-of-existence determiners. This means that neither of the tests employed above with weak quantifiers is applicable.

However, differences between count and mass nouns do emerge with DP-adjoined strong quantifiers, as shown in (27) with *tákem* 'all' and in (28) with *sáq'ulh* 'half'. With count nouns, there is a distinction between quantification over individuals (a) and parts of a single individual (b), while with mass nouns this distinction is neutralized (c).⁹

- (27) a. ts'aqw-an'-ítas [tákem ta=sts'úqwaz'=a]
 eat-DIR-3PL.ERG [all SG.DET=fish=EXIS]
 'They ate the whole fish.'

⁹ This is true whether speakers permit plural, singular or both singular and plural determiners on mass nouns (see footnote 5). The important point is the absence of the systematic singular-plural distinction seen in the contrast between the (a) and (b) examples with count nouns.

- b. ts'aqw-an'-ítas [tákem i=sts'úqwaz'=a]
 eat-DIR-3PL.ERG [all PL.DET=fish=EXIS]
 'They ate all the fish(es).'
- c. uqw7-ans-twítas [tákem ta/i=sxusum-átkw7=a]
 drink-DIR-3PL.ERG [all SG/SPL.DET=soapberry-liquid=EXIS]
 'They drank all the *sxúsum* (soapberry juice).'
- (28) a. ts'aqw-an'-ítas [sáq'ulh ta=sts'úqwaz'=a]
 eat-DIR-3PL.ERG [half SG.DET=fish=EXIS]
 'They ate half of the fish.'
- b. ts'aqw-an'-ítas [sáq'ulh i=sts'úqwaz'=a]
 eat-DIR-3PL.ERG [half PL.DET=fish=EXIS]
 'They ate half of the fish(es).'
- c. uqw7-ans-twítas [sáq'ulh ta/i=sxusum-átkw7=a]
 drink-DIR-3PL.ERG [half SG/PL.DET=soapberry-liquid=EXIS]
 'They drank half the *sxúsum* (soapberry juice).'

However, a closer examination shows that this contrast is not tied to the selectional properties of the quantifiers themselves, but to the determiners with which they co-occur. In fact, without the quantifiers, (27) and (28) show exactly the same contrasts: the DPs in the (a) cases refer to sets of atoms; those in the (b) cases to sets of pluralities, and those in the (c) case to substances, where the atom/plurality distinction is neutralized.

- (29) a. ts'aqw-an'-ítas [tákem ta=sts'úqwaz'=a]
 eat-DIR-3PL.ERG [all SG.DET=fish=EXIS]
 'They ate the whole fish.'
- b. ts'aqw-an'-ítas [i=sts'úqwaz'=a]
 eat-DIR-3PL.ERG [PL.DET=fish=EXIS]
 'They ate the [plural] fish(es).'
- c. uqw7-ans-twítas [ta/i=sxusum-átkw7=a]
 drink-DIR-3PL.ERG [SG/SPL.DET=soapberry-liquid=EXIS]
 'They drank the *sxúsum* (soapberry juice).'
- (30) a. ts'aqw-an'-ítas [ta=sts'úqwaz'=a]
 eat-DIR-3PL.ERG [SG.DET=fish=EXIS]
 'They ate the (single) fish.'

- b. ts'aqw-an'-ítas [i=sts'úqwaz'=a]
 eat-DIR-3PL.ERG [PL.DET=fish=EXIS]
 'They ate the [plural] fish(es).'
- c. uqw7-ans-twítas [ta/i=sxusum-átkw7=a]
 drink-DIR-3PL.ERG [SG/PL.DET=soapberry-liquid=EXIS]
 'They drank the *sxúsum* (soapberry juice).'

In other words, the distribution of strong quantifiers doesn't tell us anything we didn't already know from the number marking on the determiners with which they co-occur.

This does, though, raise some interesting questions for the mass-count distinction in languages where the *sole* positive diagnostic is based on the behaviour of strong quantifiers. Deal (2013), for example, claims the following for Nez Perce, which lacks overt determiners altogether:

...mass nouns, modulo apportionment, combine with quantifiers within singular NPs, whereas count nouns, modulo grinding, always occupy plural NPs when they combine with a Nez Perce quantifier.

This generalization is identical to that which holds for St'át'imcets – but as we have just seen, in St'át'imcets this does not reflect a property of the quantifiers themselves, but of the number marking on the determiners of the DPs to which they adjoin.¹⁰ The possibility then arises that the same is true for Nez Perce – but that the relevant determiners are null.

Before concluding this section, it is worth pointing out that weak quantifiers on their strong (proportional) readings behave identically to strong quantifiers in the relevant respects. This is unsurprising, given that in St'át'imcets, strong readings of weak quantifiers occur in (almost) precisely the same environments as strong quantifiers – i.e., in argument positions, with number-marked determiners. The examples in (31) and (32) with *cw7it* and *k'wik'wena7* are directly comparable to the strong quantifier cases in (27) and (28) above.

- (31) a. ts'aqw-an'-ítas [ta=cw7ít=a sts'úqwaz']
 eat-DIR-3PL.ERG [SG.DET=lot.of=EXIS fish]
 'They ate a lot of the fish.'
- b. ts'aqw-an'-ítas [i=cw7ít=a sts'úqwaz']
 eat-DIR-3PL.ERG [PL.DET=lot.of=EXIS fish]
 'They ate a lot of the fish(es).'

¹⁰ Davis (2010, 2013) argues on independent grounds that strong quantifiers in St'át'imcets are not really 'true' quantifiers (in the logical sense) at all; instead, they encode presuppositions over plural DP domains. It follows that their behaviour will always be dependent on the properties of the DPs to which they adjoin, as shown in (27)–(30).

- c. uqw7-ans-twítas [[i/ta=cw7ít=a **sxusum-átkwa7]**
 drink-DIR-3PL.ERG [PL/SG.DET=lot.of=EXIS **soapberry-liquid]**
 ‘They drank a lot of the *sxúsum* (soapberry juice).’

- (32) a. ts’aqw-an’-ítas [ta=k’wík’wen7=a **sts’úqwaz’]**
 eat-DIR-3PL.ERG [SG.DET=bit.of=EXIS **fish]**
 ‘They ate a bit of the fish.’

- b. ts’aqw-an’-ítas [i=k’wík’wen7=a **sts’úqwaz’]**
 eat-DIR-3PL.ERG [PL.DET=bit.of=EXIS **fish]**
 ‘They ate a few fish(es).’

- c. uqw7-áns-twítas [i/ta=k’wík’wen7=a
 drink-DIR-3PL.ERG [PL/SG.DET=bit.of=EXIS
 sxusum-átkwa7]
 soapberry-liquid]
 ‘They drank a bit of the *sxúsum* (soapberry juice).’

Given that weak quantifiers are unselective in number-neutral environments, the data in (31) and (32) provide further evidence that quantifiers never directly distinguish between count and mass nouns – where they appear to do so, it is in fact the number-marking on the determiners they occur with which is doing the work.

To conclude this section, there is evidence that non-numerical weak quantifiers in St’át’imcets are unselective as far as the mass-count distinction is concerned. Furthermore, and in spite of initial appearances, there is no evidence that strong quantifiers (and weak quantifiers with strong readings) distinguish between count and mass nouns, either; rather, they are confined to environments with number-marked determiners, which, as we saw in the last section, independently manifest the count-mass distinction.

3.3 Countability

As a number-marking language, St’át’imcets allows numerals, whether in predicate (33) or argument position (34), to select directly for (plural) count nouns:

- (33) xzúm-alts ta=tsitcw-kálh=a,
 big-house SG.DET=house-1PL.POSS=EXIS
 kalhás *ta=i=n-guy’t-ten-álhcw-s=a
 three *SG.DET=/PL.DET=LOC-sleep-INST-place-3POSS=EXIS
 ‘Our house is big, it has three bedrooms.’ (Alexander et al. n.d.)

- (34) kwám-em=wit *ta=/i=kalhélhs=a metsáz'
 get-FRE=3PL *SG.DET=/PL.DET=three=EXIS lingcod
 'They got three lingcod.' (Alexander et al. n.d.)

However, numerals do not so easily combine directly with mass nouns. In cases where an implicit apportionment function can be supplied by convention or by context, it is sometimes possible to count masses directly, but judgments are variable.

- (35) a. *Context: at breakfast*
 % uqw7-áns=kan i=án'was=a káopi
 drink-DIR=1 SG.SUB PL.DET=two=EXIS coffee
 'I drank two coffees.' (i.e., cups of coffee)
speaker I: good
speaker II: corrected to (b)
- b. uqw7-áns=kan i=án'was=a zew'áksten
 drink-DIR=1 SG.SUB PL.DET=two=EXIS cup
 (ku=)káopi
 (DET=)coffee
 'I drank two cups of coffees.'
- (36) a. *Context: in a grocery store*
 % xát'-min'=lhkan ku=án'was káopi
 want-RLT=1 SG.SUB DET=two coffee
 'I want two coffees (i.e., pound packets of coffee)
speaker I: good
speaker II: corrected to (b)
- b. xát'-min'=lhkan ku=án'was pound ku=káopi
 want-RLT=1 SG.SUB DET=two pound DET=coffee
 'I want two pounds of coffee.'
- (37) a. *Context: at breakfast*
 % xw7útsin szaq' kwelh=n-s-xat'
 four bread PL.DET=1 SG.POSS-NMZ-desire
 'I want four breads.' (i.e., slices)
speaker I: good
speaker II: corrected to (b)
- b. xw7útsin snik' ku=száq' kw=n-s-xat'
 four slice DET=bread DET=1 SG.POSS-NMZ-desire
 'I want four slices of bread.'

(38) *Context: in a grocery store*

xw7útsin saq' kwelh=n-s-xát'

four bread PL.DET=1SG.POSS-NMZ-desire

'I want four bread.' (i.e., loaves)

speaker I: good

speaker II: 'I can't remember what the word for loaf is...'

(39) a. ka-nik'-aká7=lhkan-a, **án'was**=t'u7

CIRC-cut-hand=1SG.SUB-CIRC **two**=EXCL

i=ptél7=a kwis

PL.DET=**blood**=EXIS fall

'I cut my hand, but just two bloods fell.' (i.e., drops of blood)

speaker I: 'No, you can't say "two bloods".'

speaker II: good

b. *Context: donating blood*

an'was i=um'náy'lh=a **ptéla7**

two PL.DET=donate=EXIS **blood**

'I donated two bloods.' (i.e., bottles of blood)

speaker I: corrected to (c)

c. **an'was-úlwih** i=um'náy'lh=a **ptéla7**

two-vessel PL.DET=donate=EXIS **blood**

'I donated two bottles of blood.'

This pattern is familiar: it also characterizes English. Given the fact that English otherwise shows a clear-cut count-mass distinction (as evidenced by number marking and selective quantification), it is tempting to conclude that such a pattern is diagnostic of languages which distinguish between count and mass nouns.

However, there is an alternative explanation (explicitly proposed by Wiltschko 2012 for Upriver Halkomelem): 'countability' is not a diagnostic for a 'grammaticalized' count-mass distinction, but merely for a pre-linguistic 'ontological' distinction. Under this view, the variability and pragmatic sensitivity characteristic of both English and St'át'imcets is a reflection of the fact that countability is not part of the grammar at all. We will return to this issue in Section 4.3 below.

3.4 A pilot field experiment

Before leaving St'át'imcets, I want to report on a very preliminary attempt to emulate the pioneering efforts of Lima (2014), who tries to move beyond the standard repertoire of linguistic diagnostics for the count-mass distinction by employing a series of tests drawn from the psycholinguistic literature. One of Lima's tests involves a scenario in which substances are divided into countable

units (e.g., glasses of water) and compared with non-apportioned quantities of the same substance (e.g., water in a jug). Lima found that in answer to the question ‘Who has more x’, her Yudja consultants consistently chose the apportioned over the non-apportioned quantities, even when the latter were clearly greater in total mass than the sum of the former. She concludes that substances are treated as count nouns by Yudja speakers, supporting her contention that the language lacks the count-mass distinction altogether.

Given that St’át’imcets shows clear grammatical evidence for the distinction, the prediction for the psycholinguistic test described above is straightforward: St’át’imcets should show the opposite pattern from Yudja. Preliminary testing shows this prediction to be borne out. I presented a speaker with exactly the scenario describe above (a large amount of water in a single jug, and a smaller total amount of water apportioned into several glasses), and asked the question in (40a). The answer was – as predicted – (40b).

- (40) a. p’á7cw=ha s=cw7it=s ta=qú7=a
 more=Q NMZ=lots.of=3POSS SG.DET=water=EXIS
 l=ta=xzúm=a zaw’áksten, p’a7cw=ás=ha
 PREP=SG.DET=big=EXIS glass more=3SJV=Q
 l=ki=kwíkws=a zaw’áksten?
 PREP=PL.DET=small=EXIS glass
 ‘Is there more water in the big glass, or in the small glasses?’

- b. p’a7cw s=cw7it=s ta=qú7=a
 more=Q NMZ=lots.of=3POSS SG.DET=water=EXIS
 l=ta=xzúm=a zaw’áksten,
 PREP=SG.DET=big=EXIS glass
 ‘There’s more water in the big glass.’¹¹

Obviously, these data are very preliminary, but they do suggest a promising avenue for further cross-linguistic investigation; for example, it would be intriguing to know what Nez Perce speakers would do in the same scenario.

3.5 Summary

Summing up, contra to the original claims of D&M, St’át’imcets shows clear evidence for the count-mass distinction in its nominal system. The principal evidence comes from number marking in two separate domains: on determiners and on nouns. Determiners are obligatorily marked for number (singular versus plural) on count nouns, but the distinction is neutralized with mass nouns, where both singular and plural determiners are possible. Count noun stems are optionally

¹¹ The speaker rejected the plural determiner on the mass noun in this case; see footnote 5 for discussion.

marked for reduplicative plural, but mass nouns systematically fail to yield a plural form.

In contrast to number marking, non-numerical quantificational elements fail to show any sensitivity to the count-mass distinction. Apparent cases of selectivity turn out to be indirect: strong quantifiers only appear on DPs which are already number-marked, and since number-marking on determiners is independently sensitive to the count-mass distinction, the quantifiers simply inherit the selectional properties of the determiners.

Finally, St'át'imcets shows a 'countability' profile very much like that of English: certain conventionalized kinds of apportionment allow mass nouns to be (apparently) directly countable, but in contrast to count nouns, which denote sets of atoms and are therefore always directly countable, apportionment is sensitive to lexical and pragmatic factors, and varies between speakers and contexts.

4 Cross-Salish Considerations

In this section, I turn to the issue of whether other Salish languages display the count-mass distinction, and what kinds of evidence might bear on the question. In practice, this means I will be comparing St'át'imcets to Upriver Halkomelem, the only other Salish language which has been systematically investigated in this respect, thanks to the work of Wiltschko (2005, 2008, 2012).

First, however, it is worth emphasizing a significant difference between St'át'imcets and nearly all of its relatives: out of the 23 Salish languages, only St'át'imcets and Bella Coola/Nuxalk obligatorily encode number in their determiner systems.¹² Obviously, this means that for most languages, the arguments I have provided based on number marking will be partially or entirely inapplicable, and raises the perennial question of whether absence of evidence can constitute evidence of absence, a question which will be particularly relevant in our discussion of Wiltschko's arguments against the count-mass distinction in Upriver Halkomelem, to which we now turn.

4.1 Wiltschko on Upriver Halkomelem

Like D&M for St'át'imcets, Wiltschko (2012) denies the existence of a count-mass distinction for Upriver Halkomelem (henceforth UH). Her principal arguments are as follows.

¹² There is a short but informative discussion of Bella Coola deictic determiners and the count-mass distinction in Nater (1984:41–42, 46). Nater reports that mass nouns such as *gla* 'water' and *kay* 'snow' prefer to take plural determiners, except when they refer to a specific amount (e.g. water in a bucket). However, the class of nouns which prefer plural determiners also includes a number of subcategories (buildings, geographical and meteorological phenomena, temporal and spatial concepts, and events) which do not obviously fit the semantic profile of mass nouns; it is possible that these constitute a separate class of *pluralia tantum*, but more investigation is needed.

- (i) *Plural marking on mass nouns.* In contrast to St'át'imcets, UH allows stem-level plural morphology on mass nouns, as shown in (39), based on Wiltschko (2012:153); compare (19) above.¹³

(41)		SINGULAR	PLURAL ¹⁴
a.	'snow'	syiq	syiqyíq
b.	'fog'	shwathetel	shweláthetel
c.	'ice'	spiw	spepíw
d.	'wind'	speháls	spelháls
e.	'gravel'	th'éxet	th'exth'éxet

- (ii) *Lack of selectivity.* No quantifier or determiner selects for only count or mass nouns, as shown in the examples in (40) (Wiltschko 2012:151):

- (42) a. tsel kw'étslexw qex (te) syíts'em/siyólh/qó/mélk
 1SG.SUB see-NCT lot.of (DET) sand/wood/milk/water
 'I saw lots of sand/wood/water/milk.'
- b. tsel kw'étslexw qex (te) theqát/sth'im/swíweles
 1SG.SUB see-NCT lot.of (DET) tree/berry/boy
 'I saw lots of trees/berries/boys.'

Wiltschko (2012) gives no data on the optional plural determiner *ye*.¹⁵ However, in Wiltschko (2008:669) we find the following:

- (43) tsel kw'étslexw **te/ye** th'eth'éxet/syiyíq/spepíw/sweláthetel
 1SG.SUB see-NCT **DET/PL.DET** gravel[PL]/snow[PL]/ice[PL]/fog[PL]
 'I saw a lot of gravel/snow/ice/fog.'

¹³ UH examples are given in the community orthography employed by the Sto:lo Nation.

¹⁴ Though historically derived from the same CVC reduplication operation as stem-level pluralization in St'át'imcets, the Halkomelem plural is more complex, involving three phonologically conditioned allomorphs (reduplication, ablaut, and *l*-infixation).

¹⁵ UH is one of two Central Salish languages – the other being Squamish/ Skwxwú7mesh – to have optional plural determiners. These have almost certainly been innovated relatively recently, since other Central Salish languages lack them, as do the other two (more conservative) dialects of Halkomelem. Their source is clearly in the demonstrative system, where the singular-plural distinction is more systematically encoded in both languages: as Suttles (2004:152) observes, the UH form *yə* (*ye*) is probably derived from the Halkomelem plural present demonstratives *yəθéʔ* and *yəθéləy'*, and Peter Jacobs (p.c. 2014) notes that the Squamish plural determiners *?iya* and *?iyi* have analogues in the plural proximate and distal demonstratives *?iyawit*/*?iyawa* and *?iyiciwit*, respectively (see also Kuipers 1967:143). It seems that the plural determiners in both languages were originally confined to human or animate referents: this is still apparently the case in Squamish (Peter Jacobs, p.c. 2014), and is claimed by Galloway (1993:390) to hold for UH, though some of the examples he gives actually involve plural inanimate nouns.

(iii) *Direct modification by degree adjectives.* In UH, adjectives meaning ‘small’ can directly modify either count nouns (in which case they refer to the size of the atomic individual(s) in the denotation of the noun) or to mass nouns (in which case they either coerce an apportioned reading and refer to the size of the portions, or alternatively refer directly to the size of the total mass). This is illustrated in (44):

- This is impossible in St'at'imcets: *kwikws* 'small' cannot directly modify mass nouns; instead *k'wik'wena7* '(a) few' is used to indicate a small amount of a substance.

- ¹⁶ The following example, supplied by Martina Wiltschko from her UH database, shows that the plural determiner can also occur with non-pluralized mass nouns:

- On the other hand, Strang Burton reports that *ye* is ungrammatical in the same environment for his consultant, the last remaining first language speaker of UH:

- Given the paucity of data, and the unlikelihood of any more being forthcoming, the status of ν_e with respect to the count-mass distinction remains somewhat uncertain.

- b. * kwikws ta=qú7=a l=ta=stswáw'c=a
 small SG.DET=water=EXIS PREP=SG.DET=creek=EXIS
 'The water in the creek is small.'
- c. k'wík'wena7 ta=qú7=a l=ta=stswáw'c=a
 few SG.DET=water=EXIS PREP=SG.DET=creek=EXIS
 'There is little water in the creek.'

4.2 Countability: a potential counter-argument

One property of UH discussed by Wiltchko (2012) poses a potential problem for her claim that there is no count-mass distinction in the language: notional mass nouns are not as easily countable as notional count nouns. In fact, the pattern of countability she records for UH is very similar to that of St'át'imcets, as discussed in Section 3.3 above, which in turn is not dissimilar from that of English: mass nouns may be apportioned (and therefore become countable), but variably so, and subject to convention and context. For example, 'sand' and 'wood' can be apportioned in UH, but not 'snow' or 'wind':

- (46) a. tsel kw'êtslexw isále siyítsem/siyólh
 1SG.SUB see-NCT two sand[PL]/wood
 'I've seen two sands/wood.'
- b. * tsel kw'êtslexw isále syiqyiq/pehals
 1SG.SUB see-NCT two snow[PL]/wind
 'I've seen two snows/wind.'¹⁷ (Wiltchko 2012:155)

Wiltchko's explanation for this is that the mass-count difference with numerals is not part of the grammar, but reflects non-linguistic conceptual ('ontological') properties. According to this view, countability should therefore

¹⁷ It is unclear whether these ungrammatical cases would become felicitous with sufficient contextual support. In St'át'imcets, for example, 'wind' is usually unacceptable with numerals, but felicitous with a 'kind of' reading.

- (vii) **xw7útsin** **i=sk'éxem=a:** ta=sutik-ák7=a,
 four **PL.DET=wind=EXIS** PL.DET=winter-hand=EXIS
 ta=sqápts=a, ta=sgapten-ák7=a,
 SG.DET=spring.wind=EXIS SG.DET=west-hand=EXIS
 mûta7 ta=haw-haw-lán'cw=a,
 and SG.DET=hot-RED-wind=EXIS
 'There are four winds: the north wind, the spring wind, the west wind, and the south wind.'

be excluded as a diagnostic for a grammatical count-mass distinction. We return to this issue in the following section.

4.3 Assessing the arguments

Given that St'át'imcets clearly shows a count-mass distinction, there are two possibilities for UH: either Wiltschko's arguments against the distinction go through, in which case there is a genuine (and major) parametric difference between the two languages; or they do not, in which case both languages respect the distinction, with any differences being micro-parametric in nature.

Let us then consider Wiltschko's arguments one by one, beginning with plural marking. The following table compares the St'át'imcets and UH number-marking systems on both nouns and determiners:

(47) *Number marking in St'át'imcets and Upriver Halkomelem*

		Singular count	Plural count	Mass
N	St'át'imcets	SG	SG/PL	SG
	Upriver Halkomelem	SG	SG/PL	SG/PL
D	St'át'imcets	SG	PL	SG/PL
	Upriver Halkomelem	SG	SG/PL	SG/PL(?)

The two systems are very similar: in fact, there are just two differences. First, plural determiners are obligatory on plural count nouns in St'át'imcets – number is fully ‘grammaticalized’ in the D-system – but only optional in UH, where number is ‘non-inflectional’ (Wiltschko 2008). Second, mass nouns do not undergo stem-level pluralization in St'át'imcets, whereas they do in UH. Both of these characteristics are diagnostic for the count-mass distinction in St'át'imcets, and correspondingly, this means that the distinction is obscured by the number-marking system of UH. The larger question, of course, is whether the differences are superficial morphosyntactic ones, or relate to more fundamental properties of the two systems.

Turning to the (non-)selectivity of quantificational elements, we have already seen for St'át'imcets that this property is parasitic on the determiner system: quantifiers are selective for the count-mass distinction in exactly the places where their co-occurring determiners are selective. It is unsurprising, then, that Halkomelem shows no selectivity in its quantificational system, since as we have seen, its determiners neutralize the count-mass distinction.

Wiltschko's third argument is based on the ability of degree adjectives (more specifically, ‘small’) to directly modify mass nouns. (As we saw in Section 4.1, St'át'imcets doesn't allow this.) According to Wiltschko, this follows from the fact that UH lacks a ‘reclassifying strategy’ for converting mass nouns into count nouns – naturally enough, if there are no mass nouns. However, recall that the interpretation of ‘small’ in UH is different for count and mass nouns: with count nouns, the adjective refers to the size of the individuals in the noun denotation, while with mass nouns, it may refer either to the size of contextually defined portions, or to the total amount of substance in the noun denotation. If anything,

this appears to support the existence of a count-mass distinction, rather than providing evidence against it. If there were no distinction, we'd either expect 'small' to refer to the number of individuals in the count noun denotation rather than their size, or alternatively, only to the size of the portions in the mass noun denotation, rather than to their total mass. As for why UH allows 'small' to refer to amounts, while St'át'imcets does not, I suspect this is a matter of differing lexical entries for degree adjectives: in UH, *i'axwil* comes with an optional measure function for amounts, while in St'át'imcets, *kwikws* does not.

Finally, consider again the question of countability, and in particular Wiltchko's proposal that it reflects 'ontological' (conceptual) rather than grammatical properties of the nominal system. While this can account for the UH facts, it runs into problems when confronted with languages such as Nez Perce and Yudja, which freely allow mass nouns to be apportioned into countable units, irrespective of pragmatic and lexical factors. Given that UH, St'át'imcets, and English do *not* allow free apportionment, countability (cast in terms of the availability of apportionment functions) must therefore be parameterized. But if so, it cannot be located outside the grammar altogether, as Wiltchko proposes: if it were, we would not expect it to differ from language to language. In fact, the only way Wiltchko's view could be accommodated to the observed cross-linguistic variation would be to claim that Nez Perce and Yudja speakers have different *conceptual* systems than those of Salish and English speakers. However, this runs into trouble with Nez Perce, which makes a conventional mass-count distinction in the quantificational part of its grammar, as Deal (2013) takes pains to point out. If apportionment were part of the conceptual system, this would entail that Nez Perce encoded the count-mass distinction grammatically, but not conceptually. Since this consequence is untenable, I conclude that countability must indeed constitute a grammatical diagnostic for the count-mass distinction, albeit one subject to a separate 'apportionment parameter'. More specifically, the 'restricted apportionment' value of the parameter provides positive evidence for the distinction; since UH has restricted apportionment, it follows that it grammatically encodes the count-mass distinction.

4.4 Understanding the differences

We have now pinpointed the source of the differences between St'át'imcets and UH: in the former, number marking is an obligatory component of the inflectional system, whereas in the latter it is 'non-inflectional', to use Wiltchko's (2008) term. This difference itself plays out in different ways on nouns and determiners. On nouns, plural marking is optional for plural count nouns in both languages and for mass nouns in UH, but impossible for mass nouns in St'át'imcets. On determiners, plural marking is optional for mass nouns in both languages and for count nouns in UH, but obligatory for count nouns in St'át'imcets.

Let me sketch out an account of how these differences might be analyzed. I will start out with the assumption that count and mass nouns differ fundamentally in their denotations – in particular, that whereas count nouns have non-arbitrary atomic subparts, mass nouns only have arbitrary 'material parts' (the term is from

Link 1983). In that case, it is relatively easy to define an operation of pluralization which refers specifically to atoms:

- (48) For any $A \subseteq U$, $PL A = *A - A$
 (where A is a set of atoms: cf. Chierchia 1998:60)

This says that the operation of pluralization PL yields the closure under sum formation ($*$) of the set of atoms A constituting the noun's denotation, minus the set of atoms itself. Since by hypothesis mass nouns are non-atomic, the operation PL will simply not apply to them, deriving the failure of mass nouns in $St'at'imcets$ to undergo stem-level plural formation.

What about UH ? The obvious option to allow mass nouns to undergo plural formation is simply to extend (48) to material parts, as in (49):

- (49) For any $A, M \subseteq U$, $PL A, M = *A, *M - A, M$
 (where A is a set of atoms and M is a set of material parts)

This says minimally that there must be more than one material part in the denotation of a pluralized mass noun, a condition which is trivial to satisfy, since material parts are of arbitrary size (at least, down to the granular level). This predicts that pluralization will have less effect on mass nouns than on count nouns – which appears to be correct, as far as I can tell from the UH data.

Turning to determiners, and beginning once again with $St'at'imcets$, this time we have to exclude plural marking on determiners with singular count nouns, and exclude singular marking on determiners with plural count nouns, while permitting mass nouns to freely take either singular or plural determiners. In the spirit of Sauerland (2003), who suggests that determiners encode presuppositions on the domain of noun denotations, we can model these restrictions as (negative) presuppositions, which prevent singular determiners from composing with plural count nouns (50a) and plural determiners from composing with singular count nouns (50b). Since these restrictions make no mention of material parts, either determiner is free to combine with mass nouns.

(50) *Denotations of $St'at'imcets$ singular and plural determiners*

- a. $[[ta = \dots = a]]^{g,c} =$
 $\lambda f_{\langle e, t \rangle} : \neg \exists x \exists y [(f(x) = 1) \wedge [y < x \wedge \text{atom}(y)]] . \text{MAX } \{z : f(z) = 1\}$
 b. $[[i = \dots = a]]^{g,c} =$
 $\lambda f_{\langle e, t \rangle} : \neg \exists x [(f(x) = 1) \wedge \text{atom}(x)] . \text{MAX } \{z : f(z) = 1\}$

Turning now to UH , the story is straightforward: the non-plural determiner te is unrestricted, and thus has the simple entry in (51a), while the plural determiner ye has the same lexical entry as $i = \dots = a$ in $St'at'imcets$ – that is, it precludes composition with nouns whose denotation consists of sets of atoms (51b). As in $St'at'imcets$, mass nouns are free to combine with either determiner.

(51) *Denotations of Upriver Halkomelem unmarked and plural determiners*

- a. $[[te=]]^{g,c} = \lambda f_{\langle e,t \rangle} \text{MAX} \{z: f(z)=1\}$
- b. $[[ye=]]^{g,c} = \lambda f_{\langle e,t \rangle} : \neg \exists x[(f(x)=1) \wedge \text{atom}(x)].\text{MAX} \{z: f(z)=1\}$

Note that the difference between the two determiner systems boils down simply to an extra presupposition on the lexical entry for the St'át'imcets singular determiners: there is no need for any kind of radical parametric restructuring of the system, let alone for a macroparametric division between languages with a count-mass distinction and those without. Given that St'át'imcets and UH are neighbours and relatives, I find this reassuring, if unsurprising.

5 Salish and Beyond

I take it that the discussion above has established the existence of a count-mass distinction in the grammars of both St'át'imcets and Upriver Halkomelem. Given that these are the only two Salish languages where the issue has been discussed in any detail, I therefore make the following claim:

(52) *All Salish languages grammatically encode the count-mass distinction*

Of course, this claim also constitutes a challenge to other Salishanists to extend the investigation beyond the two languages discussed here: it is important that the issue is explored in detail in as many Salish languages as is still possible, while there is still time.

It is also worth considering how Salish languages fit into wider patterns of cross-linguistic variation in the behaviour of count and mass nouns. We have seen that Nez Perce (which forms part of the plateau subdivision of the northwest *Sprachbund*) differs from St'át'imcets and UH in its ability to freely invoke apportionment functions. In this, it resembles Yudja, a Tupian language spoken in Brazil (Lima 2014). Unlike Nez Perce, however, Yudja lacks both grammatical number and selective quantifiers; it therefore yields no positive evidence for the count-mass distinction at all, and Lima argues on both linguistic and psycholinguistic grounds that it lacks the distinction altogether.

The picture is summarized in the following table, where the shaded cells contain languages which test positively for the mass-count distinction; the unshaded cell contains languages where no positive evidence is forthcoming, and therefore might lack the distinction altogether.

(53) *Parameters of variation in the expression of the count-mass distinction*

	Restricted apportionment	General apportionment
+ Grammatical #	English, St'át'imcets, ...	Nez Perce, ...
- Grammatical #	Dëne Suline, Upriver Halkomelem,...	Yudja, ...

Of course, (53) is greatly over-simplified, and – quite aside from micro-parametric variation in the expression of number marking, which is known to differ widely across languages – there are almost certainly other dimensions of variation which I have not touched on here. A full investigation is well beyond the scope of this paper, so I will not attempt to elaborate further. Nevertheless, and rudimentary though it is, (53) at least indicates where we must look if we are to find genuine cases of languages without a count-mass distinction.

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