One at a time in St'át'imcets[1]

Lisa Matthewson
University of Massachusetts, Amherst

This paper investigates the syntax and semantics of *pelpála7 / pipála7* in St'át'imcets (Lillooet, Northern Interior Salish). *(Pelpála7* is the Upper St'át'imcets dialect version; *pipála7* is the Lower St'át'imcets version.) The closest English translation of this word is 'one at a time'. I show that *pelpála7 / pipála7* may appear either in predicate position, or DP-internally, in the position normally occupied by strong quantifiers. *Pelpála7 / pipála7* is a distributive element; however, it is not like English *each,* because it does not universally quantify over individuals. Rather, it requires there to be a salient event which consists only of temporally separated subevents whose participants are atomic individuals. It is thus a 'pluractional marker' (Lasersohn 1995); unlike familiar pluractional markers, however, it has a DP-internal use. I conclude the paper with discussion of the consequences of this word for the analysis of English and for linguistic theory more generally.

1 Introduction

In this paper I investigate the syntax and semantics of the distributive element *pelpála7 / pipála7* in St'át'imcets (Lillooet, Northern Interior Salish). Examples are given in (1).[2]

(1a) **pelpála7** i xétsem-a cát-an'-as s-Laura
DISTRIB DET.PL box-DET lift-TR-3ERG NOM-Laura
'Laura lifted the boxes distributively.' (Upper St'át'imcets dialect)

(b) **pipála7** i xétsem-a cát-an'-as s-Laura
DISTRIB DET.PL box-DET lift-TR-3ERG NOM-Laura
'Laura lifted the boxes distributively.' (Lower St'át'imcets dialect)

The only previous discussion of *pelpála7 / pipála7* is by van Eijk (1983, 1987, 1997), who seems to have recorded only the Lower St'át'imcets version. van Eijk translates *pipála7* as '(to do something) one at a time', and this is indeed the closest English equivalent. The goals of this paper are threefold: first, to present some previously unnoticed syntactic configurations in which *pelpála7 / pipála7* may appear; second, to provide a precise analysis of its semantic contribution; and third, to comment on the consequences for linguistic theory of this interesting word.

In section 2 I present the initial data, and then demonstrate that *pelpála7 / pipála7* (henceforth referred to just as *pelpála7)* is not the same as English *each.* Unlike *each, pelpála7* does not universally quantify over individuals. In section 3 I present my analysis of *pelpála7,* according to which the sentences in (1) are true if and only if there is an event which is the sum of liftings of a single box by Laura. I show that this enables us to predict when the presence of some non-distributive liftings will cause speakers to reject the sentences in (1).

In section 4, I investigate more detailed properties of *pelpála7,* and show that the subevents (e.g.,

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[2] Data are written in the practical orthography of the language; see van Eijk and Williams (1981).

the individual box-liftings) must be temporally separated from each other. In section 5, I point out that *pelpála7* is a temporal pluractional marker (Lasersohn 1995, and references therein). However, unlike familiar pluractional markers, which operate on VP-denotations, many speakers allow *pelpála7* to appear inside DP, in the position occupied by ordinary quantifiers over individuals such as 'all', 'many'. Therefore, *pelpála7* is a cross-categorial pluractional marker. As such, it provides indirect cross-linguistic support for claims that in English adjective/adverb pairs *(individual(ly), occasional(ly), sporadic(ally)),* the 'adjective' versions really involve quantifiers (Stump 1981, Larson 1999, Zimmermann 2000).

In this paper I will be using an event semantics, for concreteness that of Kratzer (1994, in prep.). In this framework, VPs are of type <e,<s,t>>; they take first an individual argument (of type e), and then an event (of type s), to yield a truth value. A simple example is given in (2).

(2a) [[*Mary lifted the table*]] = λe [lift (the.table) (e) & agent (Mary) (e)]
After existential closure: ∃e [lift (the.table) (e) & agent (Mary) (e)]

(b) Paraphrase: The sentence *Mary lifted the table* is true if and only if there was an event of lifting the table, and Mary was the agent of that event.

Readers may notice word order variations in example sentences; these do not affect the semantics and may therefore be ignored. Dialectal variation in lexical items may also be ignored.

2 Data, and a first try

2.1 *Pelpála7*

Pelpála7 and its Lower St'át'imcets version, *pipála7,* are formed from the word for 'one', *pála7,* by reduplication. The words appear in various affixed forms according to whether the relevant individuals are people, animals, round objects, etc. (see also van Eijk 1983, 1997).[3]

Pelpála7 frequently appears in main predicate position, as illustrated in (3).[4]

(3a) **pipála7** t'u7 kw-en tsicw
DISTRIB just DET-1SG.POSS go
'I go once in a while.'
(My going was once in a while.) (van Eijk 1983, 1987)

(b) **pipápla7** lh-7ulhcw-wít-as
DISTRIB HYP-enter-3PL-3CONJ
'They came in one at a time.'
(It was one at a time when they entered.) (van Eijk 1983:74)

However, *pelpála7* may also attach to DP arguments. Examples are given in (4) and (5) of *pelpála7* attaching to subject and object DPs respectively.[5]

(4a) **pelpápla7** i smelhmúlhats-a cat-an'-táli ti tíipvl-a
DISTRIB(HUMAN) DET.PL woman(PL)-DET lift-TR-ERG.EXTR DET table-DET
'The women lifted the table one at a time.'

(b) **pelpápla7** i sk'wemk'úk'wm'it-a zuc-un'-táli ti k'ét'h-a
DISTRIB(HUMAN) DET.PL children-DET move-TR-ERG.EXTR DET rock-DET
'The children moved the rock one at a time.'

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[3] As noted by van Eijk, *pelpála7* may also be transitivized using the causative transitivizer *-s;* I do not discuss this in this paper.

[4] One speaker only allows predicative *pelpála7,* not DP-internal *pelpála7.* See section 5.2 below.

[5] The subject cases in (4) could be analyzed either as containing predicative *pelpála7,* or DP-internal *pelpála7.* The object cases in (5) unambiguously involve DP-internal *pelpála7.*

(c) **pelpápla7** i sk'wemk'úk'wm'it-a tswaw's-en-táli ti k'ét'h-a
DISTRIB(HUMAN) DET.PL children-DET weigh-TR-ERG.EXTR DET rock-DET
'The children weighed the rock one at a time.'

(5a) ts'eq'-n-ás s-Mary **[pipála7** i sqáwts-a]
mash-TR-3ERG NOM-Mary **[DISTRIB** DET.PL potato-DET]
'Mary mashed the potatoes one at a time.'

(b) cát-an'-as s-Laura **[pipála7** i xétsem-a]
lift-TR-3ERG NOM-Laura **[DISTRIB** DET.PL box-DET]
'Laura lifted the boxes one at a time.'

(c) tswáw's-en-as s-Lisa **[pipál7**-usa7 i áopels-a]
weigh-TR-3ERG NOM-Lisa **[DISTRIB**-round DET.PL apple-DET]
'Lisa weighed the apples one at a time.'

The position occupied by *pelpála7* in (5) is one which can only otherwise be occupied by strong quantifiers (see Demirdache et al. 1994, Matthewson 1998). I will return to this issue in section 5.2.

2.2 A first try: *pelpála7 = each*

Since *pelpála7* appears inside DPs and seems to have a distributive meaning, one obvious hypothesis would be that it is like English *each.* If *pelpála7* were like *each,* the lexical entry I would give it would be as in (6).

(6) $[[\ pelpála7\ ]] = \lambda x\ \lambda R_{<e,st>}\ \lambda e\ [R(x)(e)\ \&\ \forall y\ [\ [y < x\ \&\ atom\ (y)] \rightarrow\ \exists e'\ [e' < e\ \&\ R(y)(e')\ ]]]$

Unlike traditional analyses of *each,* (6) makes reference to event structure. In this I follow Tunstall (1998), who argues that to distinguish *each* from *every,* we need to look at event structures. (6) is essentially the same as Tunstall's (1998) analysis of *each;* the main difference is that Tunstall is working in a slightly different version of event semantics.[6]

Let's look at a sentence containing *pelpála7* and see what the analysis in (6) predicts. The sentence in (7) will receive the meaning in (8a), which is paraphrased in (8b).

(7) **[pelpápla7** i smelhmúlhats-a] cat-an'-táli ti tíipvl-a
[DISTRIB(HUMAN) DET.PL woman(PL)-DET] lift-TR-ERG.EXTR DET table-DET
'The women lifted the table one at a time.'

(8a) $\exists e$ [agent (the.women) (e) & lift (the.table) (e) & $\forall y$ [[y < the.women & atom (y)] $\rightarrow$ $\exists e'$ [e' < e & agent (y) (e') & lift (the.table) (e')]]]

(b) "There is an event e which consists of one or more liftings of the table, and the women are cumulatively the agent of e, and for each atomic individual y who is part of the women, there's a subevent e' of e which is a lifting of the table and whose agent is y."

Paraphrasing even more, sentence (7) requires there to have been an event which consisted of a bunch of table-liftings, each of which was by an individual woman.

2.3 *Pelpála7* is unlike *each*

Let's see why the analysis of *pelpála7* proposed in the previous subsection is incorrect. Consider

[6] (6) is also essentially identical to Kratzer's (in prep.) analysis of adverbial *each / individually.* The only difference is that *pelpála7* is an adnominal element.

the data in (9). In (9a,b) *pelpála7* attaches to object DPs, and (9c) is a subject case.

(9a) Context: There are four apples. Lisa weighs three out of the four, one at a time.

ok tswáw's-en-as s-Lisa [pelpál7-usa7 i áopels-a]
weigh-TR-3ERG NOM-Lisa [DISTRIB-round DET.PL apple-DET]
'Lisa weighed the apples one at a time.'

(b) Context: There are ten boxes.

ok ka cát-s-as-a kw-s Mary [pelpála7 i xétsem'-a],
OOC lift-CAUS-3ERG-OOC DET-NOM Mary [DISTRIB DET.PL box-DET]

t'u7 ay t'u7 kw-s ka tsúkw-s-as-a i tákem-a
but NEG just DET-NOM OOC finish-CAUS-3ERG-OOC DET.PL all-DET

tsukw t'u7 i tsúlhak7-a i ka cát-s-as-a
finish just DET.PL seven-DET DET.PL OOC lift-CAUS-3ERG-OOC

'Mary lifted the boxes one at a time, but she didn't finish all of them. She only lifted seven.'

(c) Context: There were four women trying to lift a table. Victoria lifted it by herself, Anne lifted it by herself, and Mary and Elizabeth didn't manage.

ok [pelpála7 i smelhmúlhats-a] cat-an'-táli ta tíipvl-a
[DISTRIB DET.PL woman(PL)-DET] lift-TR-ERG.EXTR DET table-DET
'The women lifted the table one at a time.'

(9a-c) show that *pelpála7* is unlike English *each,* which would give rise to falsity in the contexts given. *Pelpála7* is also unlike the St'át'imcets distributor over individuals, *zí7zeg'*. Unlike (9a), (10) requires that Lisa weighed <u>all</u> of the contextually salient apples:

(10) tswáw's-en-as s-Lisa **[zí7zeg'** i áopels-a]
weigh-TR-3ERG NOM-Lisa **[each** DET.PL apple-DET]
'Lisa weighed each of the apples.'

There are two possible sources for the difference between *pelpála7* and *each.* The first is that *pelpála7* is not a universal quantifier over individuals. It doesn't require that <u>every</u> individual in the denotation of the DP participate in the action.

The second option is that *pelpála7* <u>is</u> a universal distributor like *each,* but the DP it attaches to does not have to pick out the maximal contextually salient group of individuals. For example, in (9a), where Lisa is allowed to weigh three out of four apples, the sentence could be saying that Lisa weighed <u>each</u> of a group of <u>some</u> of the apples (namely three of them).

I will claim that the first option is correct; *pelpála7* does not universally quantify over individuals. However, the second option is very plausible, given other facts about the language. In the next subsection I demonstrate first why the second option is plausible, and then why it is wrong.

2.4 Plausible but wrong: *pelpála7* is like *each,* but the DP is non-maximal

The idea that *pelpála7* is like *each,* but the DP is non-maximal, is plausible because plural DPs in St'át'imcets are independently known <u>not</u> to have to pick out the entire contextually salient group of individuals. This is illustrated in (11), which is a non-contradictory discourse.

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

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

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

The discourse in (11) shows that the DP *i sk'wemk'úk'wm'ita* does not have to pick out the entire group of 14 children. In Matthewson (2000), I explain this by claiming that plural DPs like *i sk'wemk'úk'wm'ita* have the option of being existentially interpreted. The second sentence in (11) therefore means "There is some group of children, such that the children in that group are hungry." This explains why the DP does not have to pick out the maximal group of 14.

Given these facts, a potential analysis of the *pelpála7* sentence in (7) would be that it is true if and only if there is some group of women (a possibly proper subset of the contextually salient women), such that for each of those women, there is a subevent of her lifting the table.

However, this analysis is incorrect. The reason why it is incorrect is that there are ways of forcing the DP to pick out the maximal contextually salient set of individuals. In these cases, *pelpála7* still does not force all the individuals to participate.

The crucial cases involve plural demonstrative DPs. As can be seen in (12), DPs containing plural demonstratives necessarily pick out the maximal contextually salient set of individuals. (The symbol # indicates a grammatical sentence which is infelicitous in the discourse context described.)

(12) Context: There are four children sitting on the sofa.

wa7 tayt **[iz'** i sk'wemk'úk'm'it-a]
PROG hungry **[these** DET.PL children-DET]
'These children are hungry.'

(Addressee goes to get food.)

\# cw7it-7úl! cw7ay t'u7 kw-s tákem i sk'wemk'úk'wm'it-a wa7 tayt
many-too NEG just DET-NOM all DET.PL children-DET PROG hungry
'That's too much! Not all the children are hungry.'

Consultant's response: "You said all of them! Did you lie?"

Now consider the minimal triplets in (13) and (14). The (a) sentences show once again that a plain demonstrative cannot be used in a context where not all the contextually salient individuals take part. The (b) sentences show that *tákem iz'* 'all these' is similarly bad. The (c) sentences show that *pelpála7 iz'* is acceptable in these contexts.

(13) Context: There are four women in the room. Three of them lifted the table, one by one.

(a) \# cat-an'-ítas **[iz'** i syeqyáqts7-a] ti tíipvl-a
lift-TR-3PL.ERG **[these** DET.PL woman(PL)-DET] DET table-DET
'These women lifted the table.'

(b) # [**tákem** **iz'** i syeqyáqts7-a] cat-an'-táli ti tíipvl-a
[**all** **these** DET.PL woman(PL)-DET] lift-TR-ERG.EXTR DET table-DET
'All of these women lifted the table.'

(c) ok [**pipála7** **iz'** i syeqyáqts7-a] cat-an'-táli ti tíipvl-a
[**DISTRIB** **these** DET.PL woman(PL)-DET] lift-TR-ERG.EXTR DET table-DET
'These women lifted the table one at a time.'

(14) Context: There are four boxes in the room. Rose lifts three of them, one at a time.

(a) # cát-an'-as s-Rose [**iz'** i xétsem-a]
lift-TR-3ERG NOM- Rose [**these** DET.PL box-DET]
'Rose lifted these boxes.'

(b) # cát-an'-as s-Rose [**tákem** **iz'** i xétsem-a]
lift-TR-3ERG NOM- Rose [**all** **these** DET.PL box-DET]
'Rose lifted all of these boxes.'

(c) ok cát-an'-as s-Rose [**pipála7** **iz'** i xétsem-a]
lift-TR-3ERG NOM- Rose [**DISTRIB** **these** DET.PL box-DET]
'Rose lifted these boxes one at a time.'

In summary, we have seen that a demonstrative DP has to pick out all the contextually salient individuals, but when *pelpála7* is added to a demonstrative DP, not all of the contextually salient individuals have to participate in the action. This is evidence that *pelpála7* does not universally quantify over individuals. It does not mean "for each atomic x, there's a subevent e ...".

3 Analysis

Our familiar sentence is repeated once more in (15).

(15) [**pelpápla7** i smelhmúlhats-a] cat-an'-táli ti tíipvl-a
[**DISTRIB**(HUMAN) DET.PL woman(PL)-DET] lift-TR-ERG.EXTR DET table-DET
'The women lifted the table one at a time.'

The idea of the analysis is that (15) requires there to be an event which consists only of liftings of the table by atomic parts of the group of women picked out by the DP. The lexical entry which achieves this is given in (16), and the meaning for the whole sentence in given in (17).

(16) [[*pelpála7*]] = $\lambda x\, \lambda R_{<e,st>}\, \lambda e'$ [$\exists e_1 \ldots \exists e_n$ [e' = $e_1 + \ldots + e_n$ & $\forall e_n \exists y$ [y < x & atom (y) & R (y) (e_n)]]]

(17a) $\exists e' \exists e_1 \ldots \exists e_n$ [e' = $e_1 + \ldots + e_n$ & $\forall e_n \exists y$ [y < the.women & atom (y) & agent (y) (e_n) & lift (the.table) (e_n)]]

(b) "There is an event e' which is the sum of subevents $e_1 \ldots e_n$, and for all e_n, e_n is a lifting of the table and there is an atomic part of the women who is the agent of e_n."

3.1 Dealing with non-distributive liftings

The analysis just given says that sentence (15) will be true if and only if there is an event e' which is the sum of liftings by individual women. The event e' cannot contain any collective liftings. However, the analysis doesn't rule out non-distributive liftings having taken place outside e'. Therefore, one can legitimately ask what kinds of scenarios the analysis rules out. In this subsection I will first outline the facts

about non-distributive liftings, and then indicate how the analysis correctly derives these facts.

When the context given to the consultants contains both distributive and non-distributive liftings, *pelpála7* is rejected. This is shown in (18) for both subject and object-attached *pelpála7*.

(18a) Context: There were four women. Victoria lifted the table by herself, Anne lifted it by herself, and Mary and Elizabeth lifted it together.

\# [pelpála7 i smelhmúlhats-a] cat-an'-táli ta tíipvl-a
[DISTRIB DET.PL woman(PL)-DET] lift-TR-ERG.EXTR DET table-DET
'The women lifted the table one at a time.'

(b) ka cát-s-as-a kw-s Vicky [pelpála7 i xétsem'-a] ...
OOC lift-CAUS-3ERG-OOC DET-NOM Vicky [DISTRIB DET.PL box-DET]
'Vicky lifted the boxes one at a time ...'

\# texw t'u7 ti7 gélgel, nilh t'u7 s-ka cát-s-as-a
very just DEMON strong FOC just NOM-OOC lift-CAUS-3ERG-OOC
i áw't-a án'was xétsem' t'qwaw's
DET.PL last-DET two box together
'She's very strong, so she lifted the last two together.'

Speakers often correct such cases by adding an overt description of the non-distributive actions, as shown in (19) and (20).

(19) Context: There are four women participating in a table-lifting competition. The competition consists of the following liftings: Mary, Gertie, Laura, Darla, and Laura and Darla together.

\# cat-an'-ítas ti tíipvl-a [pelpála7 i smelhmúlhats-a]
lift-TR-3PL.ERG DET table-DET [DISTRIB DET.PL woman(PL)-DET]
'The women lifted the table one at a time.'

Corrected by adding:

nilh-s cat-an'-ítas t'qw'aw's s-Laura wi s-Darla
FOC-NOM lift-TR-3PL.ERG together NOM-Laura 3PL NOM-Darla
'And then Laura and Darla lifted it together.'

(20) Context: Laura is in a box-lifting competition. In the competition, she lifts box 1, then box 2, box 3, box 4, then 3 and 4 together.

[pelpála7 i xétsem-a] cát-an'-as s-Laura
[DISTRIB DET.PL box-DET] lift-TR-3ERG NOM- Laura
'Laura lifted the boxes one at a time.'

Consultant prefers to add:

nilh aylh s-7án'was-ts xétsem i cat-an'-ás-a
FOC then NOM-two-3SG.POSS box DET.PL lift-TR-3ERG-DET
'And then she lifted two boxes.'

Interestingly, *pelpála7* sentences become fine if it is made explicit that the non-distributive liftings are not part of the same event as the distributive liftings. This is illustrated in (21) and (22).

(21) Context: There are four women participating in a table-lifting competition. The competition consists of the following liftings: Mary, Rose, Laura. Then after the table-lifting competition has finished, Laura and Darla lift it together for fun.

ok cat-an'-ítas [pipála7 i syeqyáqts7-a] ti tíipvl-a
lift-TR-3PL.ERG [DISTRIB DET.PL woman(PL)-DET] DET table-DET
'The women lifted the table one at a time.'

Consultant's comment: "If they didn't join the contest, then it would be okay, but if they did then it wouldn't be okay."

(22) Laura is in a box-lifting competition. In the competition, she lifts box 1, then box 2, then box 3. Then after the box-lifting competition has finished, she lifts 3 and 4 together for fun.

ok cát-an'-as s-Laura [pipála7 i xétsem-a]
lift-TR-3ERG NOM- Laura [DISTRIB DET.PL box-DET]
'Laura lifted the boxes one at a time.'

Consultant's comment: "Yeah, because I did it consecutive and then it was the end of the contest before I lifted the others."

The generalizations about non-distributive liftings are summarized in (23).

(23i) Unstructured context which combines distributive and non-distributive actions → rejection.

(ii) Structured context which separates distributive from non-distributive actions → acceptance.

(iii) Unstructured context which combines distributive and non-distributive actions → acceptance of 'p and then q'. (i.e.: speakers impose structure.)

What seems to be going on is as follows. For a *pelpála7* sentence to be accepted, there has to be a salient event which has the required property of total distributivity. The unstructured contexts fail to meet this requirement. I can see two different reasons why this might be the case.

The first reason could be that principles for the individuation of events force speakers to consider the maximal salient event. If this event contains non-distributive liftings, then there is no salient event in the context which satisfies the distributivity requirement. Therefore, the sentence is false. Once we explicitly separate the non-distributive liftings into a separate event (e.g. by the end of the table-lifting competition), the sentence becomes true.

Alternatively, maybe the rejected sentences are not false, they are simply a very poor way to describe what happened. They give an arbitrarily selective description of a complicated scenario. In (21) and (22), there is a reason to find the purely distributive part more relevant or interesting than the non-distributive liftings, so the sentence becomes good.

This second solution is supported by the data in (19-20). If 'p and then q' is true, that entails that 'p' (the original *pelpála7* sentence) was true. It was just a very strange way to describe a context which combines both distributive and non-distributive liftings.

Summarizing this subsection, we predict that *pelpála7* sentences will be accepted only if there is a salient event consisting only of distributive actions, which is (a) separated from any non-distributive actions by a clear event boundary, and/or (b) perceptually prominent (interesting, relevant).

4 The subevents must be temporally separated

So far we have seen that a *pelpála7* sentence requires that there be a group of subevents (e.g. of table-liftings by individual women). In this subsection I address the question of what type of separation of the subevents *pelpála7* requires. Based on data collection so far, it appears that temporal separation is the

strongly preferred option.

All the cases looked at above involve temporally separated subevents. In (24), the subevents occur at the same time, but are spatially separated. All speakers asked have rejected the *pelpála7* sentence in this context.

(24) Context: Some potatoes are lined up on the counter, with space in between them, and a board is pressed on top of them, mashing them all at the same time.

\# [pelpál7-usa7 i petáok-a] ts'eq'-en-ás s-Lisa
[DISTRIB-round DET.PL potato-DET] mash-TR-3ERG NOM-Lisa
'Lisa mashed the potatoes one at a time.'

Pelpála7 contrasts in this respect with English *each,* as noted by Tunstall (1998) (who invented the context in (24)). Tunstall observes that English *each* does allow spatial separation of the subevents:

(25) Context: Some potatoes are lined up on the counter, with space in between them, and a board is pressed on top of them, mashing them all at the same time.

ok Carol mashed each potato. (Tunstall 1998:105)

(26) is another example which shows that simultaneous subevents cause *pelpála7* to be rejected.

(26) Context: Mary arrives through your front door at the same time as Rose, coming from a completely different place, for a different reason, separately, comes in your back door.

\# [pipápla7 i syeqyáqts7-a] t'iq
[DISTRIB(HUMAN) DET.PL woman(PL)-DET] arrive
'The women arrived one at a time.'

In (27), spatial individuation was marginally sufficient. Note that the spatial separation must be overtly mentioned for the sentence to be acceptable.

(27) [pipála7 i syeqyáqts7-a] wa7 kúkwpi7 # (lkw7u tmícw-i-ha)
[DISTRIB DET.PL woman(PL)-DET] PROG chief (DEIC land-3PL.POSS-DET)
'Each of the women is a chief (in her own area).'

Further evidence that *pelpála7* is strongly temporal is provided by returning yet again to a comparison with English *each.* Tunstall (1998) argues that for *each,* the individuation of the subevents can be temporal or spatial, but there must also be sufficient interest in the differentiation. In fact, the subevents don't have to be separate in either time OR space, as long as there is sufficient interest in the individual objects. Some examples are given in (28-29).

(28a) Ricky weighed each apple.
(b) ?# Ricky took each apple. (Tunstall 1998:106)

(29a) The cruel girl wounded each cat, but not separately. (Tunstall 1998:108)
(b) ?# The waitress brought out each drink, but not separately.

In (28a), it is interesting and relevant that the apples were weighed distributively, rather than together. This contrasts with (28b), where it is probably not very important how Ricky took the apples; what matters is simply the end result that he had all of them. Similarly in (29), we can use *each cat* even if the woundings happened as the result of a single event, but we are very unlikely to say (29b), since the individual drinks are not inherently interesting.

In contrast to *each, pelpála7* does not require any special 'interest' in the differentiation of the

subevents. It simply requires temporal individuation. This is illustrated in (30) and (31), where in each case the felicitous *pelpála7* sentence is compared with a marginal English counterpart using *each.*

(30a) Context: You invited a bunch of people to a party. You want to explain what happened.

[pelpápla7	i	ucwalmícw-a]	t'iq
[DISTRIB(HUMAN)	DET.PL	person-DET]	arrive

'The people arrived one at a time.'

?# 'Each person arrived.'

(b)

[pelpál7-usa7	i	áopels-a]	kwis	lhél-ta	tíipvl-a
[DISTRIB- round	DET.PL	apple-DET]	fall	from-DET	table-DET

'The apples fell off the table one at a time.'

?# 'Each apple fell off the table.'

In summary, we have seen that *pelpála7* is strongly temporal in its requirements. The revised lexical entry required for *pelpála7* is given in (31); a clause has been added which stipulates that the running time of the subevents must not overlap (cf. Lasersohn 1995).

(31) [[*pelpála7*]] = $\lambda x\ \lambda R\langle e,st\rangle\ \lambda e'$ [$\exists e_1 \ldots \exists e_n$ [e' = $e_1 + \ldots + e_n$ & $\forall e_n \exists y$ [y < x & atom (y) & R (y) (e_n)] & $\forall e_n, e_m$ [¬ τ (e_n) o τ (e_m)]]]

The meaning of our familiar sentence under the revised analysis is as paraphrased in (32).

(32) [[*pelpála7 det women lifted the table*]] =

"There is an event e' which is the sum of subevents $e_1 \ldots e_n$, and for all e_n, e_n is a lifting of the table and there is an atomic part of the women who is the agent of e_n, and for all e_n, e_m, the running times of e_n and e_m do not overlap."

5 Pluractional markers

In this section I will compare *pelpála7* to pluractional markers as discussed by Lasersohn (1995), among others. We will see that *pelpála7* is a temporal pluractional marker. However, unlike familiar pluractional markers, *pelpála7* can be DP-internal as well as operating on a VP. In later subsections I will discuss the consequences of this fact for learnability and for similar constructions in English. (Readers are referred to Bar-el 1998 for another discussion of pluractionality in Salish.)

5.1 *Pelpála7* as a pluractional marker

Pluractional markers are normally affixes on verbs; they often involve reduplication. They indicate a broad range of "distributive" notions. The most important types are 'action by more than one individual, temporally iterated action, and spatially scattered action' (Lasersohn 1995:238). Lasersohn's first try at the analysis of pluractional markers is given in (33) (X ranges over sets of events).

(33) V-PA(X) $\Leftrightarrow \forall e \in X$ [V(e)] & **card**(X) $\geq n$

(33) says that a pluractional verb holds true of a group of events if and only if 'its corresponding "singular" verb holds true of each individual event in the group' (Lasersohn 1995:241).

Lasersohn then refines his analysis to account for the three main types of pluractional marker. The subevents must have separate running times (34a), running spaces (34b), or participants (34c). Which is chosen depends on the lexical characteristics of the particular pluractional morpheme.

(34a) temporal pluractionality:

$$\text{V-PA(X)} \Leftrightarrow \forall e,e' \in X\,[V(e) \,\&\, \neg\, \tau(e) \circ \tau(e')] \,\&\, \textbf{card}(X) \geq n$$

(b) spatial pluractionality:

$$\text{V-PA(X)} \Leftrightarrow \forall e,e' \in X\,[V(e) \,\&\, \neg\, K(e) \circ K(e')] \,\&\, \textbf{card}(X) \geq n$$

(c) participant pluractionality:

$$\text{V-PA(X)} \Leftrightarrow \forall e,e' \in X\,[V(e) \,\&\, \neg\, \theta(e) \circ \theta(e')] \,\&\, \textbf{card}(X) \geq n$$

The similarity with *pelpála7*is easy to spot. *Pelpála7* also requires there to be a set of subevents, each of which satisfies the singular predicate. As argued in section 4, *pelpála7* requires the subevents to be temporally separated. Therefore, *pelpála7* is a temporal pluractional marker.

5.2 *Pelpála7* is a cross-categorial pluractional marker

We have seen many examples so far where *pelpála7* appears attached to DP argument. In (35), for example, *pelpála7* appears in a position which predicative or adverbial elements may not normally occupy. As argued by Demirdache et al. (1994) (see also Matthewson 1998), this position is one which may normally only be occupied by strong quantifiers such as *tákem* 'all'.

(35) ts'eq'-n-ás s-Mary [**pipála7** i sqáwts-a]
mash-TR-3ERG NOM-Mary [**DISTRIB** DET.PL potato-DET]
'Mary mashed the potatoes one at a time.'

However, we have also already seen that *pelpála7* is not restricted to appearing attached to a DP; it may also appear in predicate position. Examples were given in (3) above, and further illustrations are given in (36). (As noted in footnote 4, one speaker only allows predicative *pelpála7,* not DP-internal *pelpála7.)*

(36a) **pelpála7**-wit i smelhmúlhats-a **lh**-cat-an'-ítas ta tíipvl-a
DISTRIB-3PL DET.PL woman(PL)-DET **when**-lift-TR-3PL.ERG DET table-DET
'The women lifted up the table one at a time.'
(The women were separate when they lifted up the table.)

(b) **pipál7**-usa7 i áopels-a **lh**-tswáw's-an'-as s-Rick
DISTRIB-round DET.PL apple- DET **when**-weigh-TR-3ERG NOM-Rick
'Rick weighed the apples one at a time.'
(The apples were separate when Rick weighed them.)

Investigation of the predicative construction in (36) is only preliminary at this stage; it appears, however, that the semantics is similar or identical to that of the DP-internal construction.

There are two interesting consequences of the observation that *pelpála7* is a cross-categorial pluractional marker. The first is that pluractional markers are not always VP-operators. The second has to do with learnability, and is addressed in the next subsection.

5.3 Consequences for learnability

In previous sections we have seen that *pelpála7* is a distributive element, which differs from English *each.* Although *pelpála7* is DP-internal, it makes a universal statement about its subevents $e_1 + \ldots + e_n$, rather than about atomic individuals. The question arises of how children are able to learn the subtle differences between the various distributive elements.

The potential for a learnability problem arises because there is no simple mapping between the

syntax and the semantics. A simple, and easily learnable, situation would be if DP-internal distributors quantified over individuals, while adverbial distributors quantified over events. However, the *pelpála7* data clearly show that this is not the case.

I would like to speculate that all that learners of St'át'imcets need to do is to recognize that *pelpála7* is a pluractional marker. And I further speculate that this task is relatively easy, because *pelpála7* shares a common characteristic with other pluractional elements in the language, namely reduplication.

The data in (37), which are taken from van Eijk (1997:61-65), show that CVC-reduplication is commonly used for pluractional purposes.

(37)	a.	metscál	'to write'	metsmetscál	'to write a lot'
	b.	tsí7ig'w	'to bleed'	tsí7ts7ig'w	'to bleed all over'
	c.	tsíqeq	'to get stabbed'	tseqtsíqeq	'to get stabbed all over'
	d.	túpun'	'to punch someone'	teptúpun'	'to beat someone up'
	e.	pegwtsám'	'to knock'	pegwpegwtsám'	'to knock repeatedly'
	f.	seqcál	'to split wood'	seqseqcál	'to keep on splitting wood'

I therefore propose that in spite of *pelpála7*'s unusual ability to appear inside DPs as well as predicatively, it will be recognizable to a child learner as a pluractional marker due to its reduplication. Its precise properties (i.e., the fact that it is a temporal pluractional marker) will then be learnt however the precise properties of ordinary pluractional markers are learnt.

Readers may have noticed that the Lower St'át'imcets version, *pipála7,* does not involve CVC reduplication. There are a couple of cases where a schwa + resonant sequence in the Upper dialect corresponds to an /iy/ sequence in the Lower dialect. Compare the *pelpála7 / pipála7* distinction with the data in (38) (see also van Eijk 1997:58).

(38)	p'an't	'to return'	
	p'en'ap'án'ta	'to go back and forth'	(Upper St'át'imcets)
	p'iyap'án'ta	'to go back and forth'	(Lower St'át'imcets)

5.4 Consequences for English adjective / adverb pairs

In this final subsection I would like to suggest that *pelpála7* can teach us something about English adjective / adverb pairs such as those in (39).

(39a) An occasional sailor strolled by.
= Occasionally, a sailor strolled by.

(b) A periodic investigation would turn up a few new leads.
= Periodically, an investigation would turn up a few new leads.

(c) The storm was punctuated by a sporadic crash of thunder.
= Sporadically, the storm was punctuated by a crash of thunder.

The adjective versions of each of these pairs raise problems for compositionality, since it is not clear how an element in adjective position can have semantic scope over the whole sentence. Some authors have argued that the supposed 'adjective' is really a quantifier, or combines with the article to create a complex quantifier (Stump 1981, Larson 1999, Zimmermann 2000).

The analysis of *pelpála7* presented in this paper provides indirect cross-linguistic support for these claims about English. Recall that *pelpála7* can appear either as a predicate or DP-internally. The predicative use of *pelpála7* may in fact be regarded as parallel to an English adverbial usage. In St'át'imcets, adverbials typically appear as main predicates which take subordinate clauses. This is illustrated in (40).

(40a)	**xwem**	t'u7	**kw-en-s**	úxwal'
	fast	just	**DET.1SG.POSS-NOM**	go.home
	'I went home quickly.'			
	(My going home was fast.)			

(b) **xwem**-ílc-kan **i** úxwal'-an
fast-body-1SG.SUBJ **when.past** go.home-1SG.CONJ
'I went home quickly.'
(I was fast when I went home.)

Therefore, we can say that *pelpála7* appears either as an adverb or DP-internally, and when it appears DP-internally, it behaves like a quantifier. Therefore, it is an overt manifestation of the analysis proposed abstractly for English.

6 Conclusions

In this paper, I have shown that *pelpála7*is a distributor which differs from English *each* in that it does not require every individual in the denotation of its nominal to participate in the action. I have proposed that *pelpála7* requires that there be a salient event which consists only of temporally separated subevents whose participants are atomic individuals.

I have demonstrated how this analysis enables us to predict the circumstances under which speakers will reject *pelpála7* sentences in scenarios which contain both distributive and non-distributive actions.

I have further argued that *pelpála7* is a cross-categorial pluractional marker. It may appear in predicate / adverbial position, or in strong quantifier position. This shows that there is no necessary correlation between syntactic position and type of distributor. I have claimed that the properties of *pelpála7* are learnable by virtue of it involving reduplication, a common way to indicate pluractionality in St'át'imcets. Finally, I have argued that *pelpála7* provides indirect support for cross-categorial analyses of English adjective / adverb alternations according to which the 'adjective' version is really a quantifier.

On a more general level, the pattern described here is of interest for the syntax / semantics interface with respect to quantificational structures, particularly in the context of the impact of Salish on the theory of universal grammar. Partee (1995), building on the work of Jelinek (1995), conjectured that all quantification in Salish is A-type quantification (that is, it has the syntax of adverbial structures and the semantics of unselective quantification). Work by Demirdache et al. (1994) then established the existence in Salish of DP-internal quantifiers which quantify over individuals. The evidence presented here indicates that a syntactic configuration canonically associated with D-type quantification (i.e., a DP-internal quantifier) is associated semantically with quantification over events, and only indirectly over individuals. This indicates that there is no straightforward mapping between the syntactic configuration of a quantifier and its semantic function in Salish.

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