

# The absence of inverse scope in Tlingít\*

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**Abstract:** This paper shows that the quantifier *ldakát/lakát* ‘all, every’ in Tlingít exhibits variable binding ability and interacts with numeral DPs and negation; however, the data show that while *ldakát* phrases allow surface scope, they lack inverse scope. *Ldakát* phrases also display distributivity effects, which are absent in ordinary plural DPs. The findings suggest that *ldakát* phrases are quantificational. I show that syntactically *ldakát* combines with a DP, and discuss the semantics and implications of *ldakát* being a head taking the DP as complement and being a modifier of the DP.

**Keywords:** quantifier, surface scope, inverse scope, negation, distributivity, entailments

## 1 Introduction

Tlingít (ISO 639-3 ‘tli’) is an endangered Na-Dene language related to Eyak and the Athabaskan languages spoken in Alaska, Northern British Columbia and the Yukon. This paper investigates the free morpheme quantifier *ldakát/lakát* ‘all, every’ in Tlingít by focusing on scope interactions of *l(d)akát* and scope-bearing elements. *L(d)akát* has been identified and translated as equivalent to English *every* or *all* in Tlingít dictionaries and texts, but there is no detailed justification of this equivalence. I offer a set of empirical findings about what scope interpretations *l(d)akát* allows, which differ from English. English is considered to have ambiguous quantifier scope. For example, *A doctor will examine every new patient* (Reinhart 1997: 336) either means that there is only a single doctor, or that the choice of doctor can vary with the choice of a patient. I show that unlike English, *l(d)akát* lacks the second reading, namely, the inverse-scope reading; the rigid scope is also observed in negation, pointing to a more general property of quantification in Tlingít. I also discuss the structure of *l(d)akát* phrases, which invites application of a quantifier analysis (Matthewson 2001) and a modifier analysis (Brisson 1998, 2003) to *l(d)akát*.

The paper is organized as follows. Section 2 introduces the nominal system of Tlingít. Section 3 gives basic facts about the syntactic composition of *l(d)akát* phrases and brings up the research question. Section 4 and 5 discuss scope interactions of *l(d)akát* phrases with numeral phrases and negation. Section 6 contrasts distributivity of plural DPs with and without *l(d)akát*. Section 7 discusses the application of two existing analyses to *l(d)akát*, and Section 8 concludes.

## 2 Background of the Tlingít nominal system

Tlingít has a set of demonstratives encoding deictic information: *yá* ‘this (right here) (proximal)’, *hé* ‘this/that (over here) (mesioproximal)’, *wé* ‘that (mesiodistal)’, and *yú* ‘that (far away) (distal)’.

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I assume that, following Crippen (in prep.), these are determiners and head a DP.<sup>1</sup> The determiners, however, do not encode definiteness (Brown 2014), unlike what is usually assumed for English *the*. Nouns can appear bare in argument positions and allow definite or indefinite interpretations (Crippen 2009). Also, bare nouns are generally unspecified/neutral for number.<sup>2</sup> The plurality of a noun is sometimes indicated by a plural verb root, and in particular, human/animate plural nouns (as arguments) are indicated by the 3<sup>rd</sup> person plural proclitic *has* on the verb, as given in the contrast in (1). As for numerals, they generally precede the head noun, and the presence/absence of the affix *-náx* distinguishes human vs. non-human nouns, as shown in (2).<sup>3</sup>

- (1) a. *yayat't-i wasóos chookwán has=axá.*  
 long-PSS<sup>4</sup> cow grass 3PL.HUM=s/he.is.eating  
 'The long cows are eating grass.'
- b. *yayat't-i wasóos chookwán axá.*  
 long-PSS cow grass s/he.is.eating  
 'The long cow is eating grass.'
- (2) a. *daax'oon x'úx' ká ka<sub>x</sub>wjeexít.*  
 four book HSFC I.wrote  
 'I wrote on four books.'
- b. *daax'ooni-náx káa has=shal<sub>x</sub>'oot'*  
 four-HUM man 3PL.HUM=IMPFV.s/he.rod.fish  
 'Four of the men were spin-casting.'

### 3 The syntactic status of *l(d)akát*

Crippen (in prep.) suggests that *l(d)akát* is the sister of a entire DP as *l(d)akát* can occur to the left of a *bare noun*, *demonstrative/determiner*, or (*possessive*) *pronoun*. I illustrate these possibilities in (3) in the mentioned order. The contrast in (4) demonstrates that *l(d)akát* cannot follow the modified DP.

- (3) a. [*ldakát káa*] *has=shal<sub>x</sub>óot'*.  
 all man 3PL.HUM=IMPFV.s/he.rod.fish  
 'Every man is fishing (with a fishing rod).'

<sup>1</sup> We may alternatively assume that demonstratives are modifiers in Spec, DP (Campbell 1996; Giusti 1997). In either approach, *l(d)akát* cannot occupy D since it always precedes a demonstrative.

<sup>2</sup> There is a plural marker *-x'* on nouns or nominal modifiers, but its occurrence is specialized, which requires further research.

<sup>3</sup> The distinction, however, is not clear-cut; sometimes, human numerals are used for animals and things, while non-human numerals are used for people.

<sup>4</sup> Abbreviations: ABL = ablative; D = determiner; DIM = diminutive; DIST = distributive; ERG = ergative; IMPFV = imperfective; FOC = focus; HSFC = horizontal surface; INDF = indefinite; IRR = irrealis; MDST = mesiodistal; NEG = negation; PERT = pertinent; PFV = perfective; PL = plural; PSS = possessive; PNCT = punctual; Q = question marker; STV = stative.

- b. [*ldakát* wé shál ] du aa-yí á-wé.  
 all D.MDST spoon 3S.HUM.PSS INDF-PSS FOC-D.MDST  
 ‘All the spoons are his.’
- c. [*ldakát* du yát-x’-i ] déix hít has=aya.óo.  
 all 3S.HUM.PSS child-PL-PSS two house 3PL.HUM=own  
 ‘All of his children own two houses.’
- d. yak’éi-yi ts’ootaat [*ldakát* yiwáan].  
 be.good-PSS morning all 2PL  
 ‘Good morning to all of you.’
- (4) a. [*ldakát* wé keitl-x’-i sáani] wé-x̣ yaa lunagúḵ.  
 all D.MDST dog-PL-PSS DIM D.MDST-PERT along IMPFV.run.PL  
 ‘All the little dogs are running along there.’
- b. \* [wé keitl-x’-i sáani *ldakát*] wé-x̣ yaa lunagúḵ.  
 D.MDST dog-PL-PSS DIM all D.MDST-PERT along IMPFV.run.PL

According to the data presented above, it is evident that *l(d)akát* does not occupy the D position. (3a), in which *l(d)akát* combines with a bare noun, might make this claim look dubious, but considering the consistency of *l(d)akát*’s position, I simply assume there is a null D in (3a).<sup>5</sup> Furthermore, *l(d)akát* and the DP it modifies can be moved around (with possible changes to information structure, see Crippen in prep.), as shown in (5), which indicates that they form a syntactic constituent.<sup>6</sup>

- (5) a. [*ldakát* has ] déix̣ x̣áat has=awdzit’eḵ.  
 all 3PL two fish 3PL.HUM=s/he.hook.fished  
 ‘Everyone caught two fish.’
- b. déix̣ x̣áat has=awdzit’eḵ [*ldakát* has].  
 two fish 3PL.HUM= s/he.hook.fished all 3PL

The syntactic constituent of *l(d)akát* and the DP is interpreted as plural, as indicated by the plural preverb *has*; this can be observed in (3a), (3c), and (5) when the argument DP is human or

<sup>5</sup> Example (3a) was elicited in a context where a group of people was introduced, so the bare noun used here should be interpreted as definite. Since bare nouns in Tlingít can be either definite or indefinite, it would be interesting to pursue the question of whether *l(d)akát* can possibly combine with an indefinite bare noun, and if possible, which interpretation it will yield.

<sup>6</sup> In one instance of the elicited data, *ldakát* appears alone in the preverbal position, as in (i); it’s not clear from the translation if *ldakát* quantifies over the DP (and is stranded by moving the DP to the right periphery) or over the verb.

- (i) *ldakát* x̣waakit’ wé x̣áat yeedát.  
 all I.ate D.MDST fish now  
 ‘I ate the whole fish now (and it’s in my stomach).’ or ‘I completely ate the fish.’

animate.<sup>7</sup> Example (6) provides a contrast showing that a singular verb root, in this case, *áa* ‘s/he is sitting’, cannot agree with a *l(d)akát* phrase.<sup>8</sup>

- (6) a. *ldakát wé kéídladi aas yík-t has=keen*  
 all D.MDST seagull tree inside-PNCT 3PL.HUM=be.seated.PL  
 ‘All the seagulls are sitting on a tree.’
- b. \* *ldakát wé kéídladi aas yík-t áa*  
 all D.MDST seagull tree inside-PNCT s/he.is.siting  
 Intended for ‘Every seagull is sitting on a tree.’

From the discussion above, we can conclude the syntactic structure of *l(d)akát* in (7), where *l(d)akát* takes a DP, forming a syntactic constituent.

- (7) [<sub>?P</sub> *l(d)akát* [<sub>DP</sub> (D) NP]]

There are two candidates for what the syntactic constituent that contains *l(d)akát* is: Is the ?P in (7) a DP or QP?<sup>9</sup> To determine which, I will consider whether or not the ?P is quantificational, and will examine the syntactic status of *l(d)akát* (namely, whether it is a head or a modifier) (see Section 7). Quantificational phrases are known to be able to bind into a variable and exhibit scope interaction with operators. If the ?P is quantificational, we expect it has both properties.

Firstly, the variable-binding ability is observed with *l(d)akát* phrases, as illustrated by the third person possessive pronoun *du* in (8). Example (8) shows that when the variable *du* co-occurs with and follows a *l(d)akát* phrase, it has two readings, a referential and a bound reading. *Du* can be co-referential with what the *l(d)akát* phrase refers to, the boys as a group in this case, and thus the possessive phrase means ‘the mother of the boys’; this is the referential reading of *du*.<sup>10</sup> Yet, the possessive phrase can refer to a different boy’s mother, giving a bound-variable reading. Since bound-variable readings are only possible when a pronoun is bound by a quantifier, this provides

<sup>7</sup> The noun in the *l(d)akát* phrase doesn’t always take the plural marker *-x*’ (cf. fn. 3). This property is not directly related to availability of pluralisation of nouns themselves; for instance, both *káa* ‘man’ and *adát* ‘child’ may take the plural marker, but *káa* ‘man’ in the *l(d)akát* phrase cannot be pluralized:

- (ii) *ldakát káa(\*-x’w) has=shalx’oot’*.  
 all man-PL 3PL.HUM=IMPFV.s/he.rod.fish  
 ‘All the men are spin-casting.’

- (iii) *ldakát adát-x’-i x’áax’ has=aawaḡáa*.  
 all child-PL-PSS apple 3PL.HUM=PFV.s/he.ate  
 ‘All the children ate apples.’

<sup>8</sup> The example in fn. 6 actually provides a potential counter-example for *ldakát* phrases being obligatorily plural, if *ldakát* in the sentence is proved to quantify over the DP.

<sup>9</sup> There are actually more possibilities; for instance, ?P could be an extended nominal projection above DP. Given the common translation of *l(d)akát* phrases as akin to English *all* and *every*, I focus on the distinction between a QP and a non-QP.

<sup>10</sup> The reference of *du* might not necessarily be provided by the *lakát* phrase but by an object present in the context, namely, ‘All the boys kissed another group (assumed in the context)’s mother’; I did not conduct a test for this possibility.

support for the quantificational nature of *l(d)akát*. Note that since *l(d)akát* phrases are plural, they require a plural agreement on the pronoun as a requisite for testing variable-binding ability. If the object in (8) were *du tláa* ‘his/her mother’ rather than *has du tláa* ‘their mother’, the only interpretation would be that there is one specific mother and all of the boys kiss her.

- (8) [*lakát wé káa yat-x’í*] [*has du tláa*] *x’éit yawdzi.áa.*  
 all D.MDST man child-PL-PSS 3PL 3H.PSS mother to.mouth kissed  
 a. ‘All the boys kissed their (the same) mother.’  
 b. ‘Every boy kissed his (own) mother.’ or ‘All the boys kissed their (different) mother.’

In the following sections, I will show that the scope property of *l(d)akát* phrases also holds, but in a more restricted manner than the English quantifiers. The data for scope interactions was collected via controlled elicitation following Matthewson (2004). Storyboards and pictures with captions, constructed to illustrate an unambiguous scope reading, were presented to speakers aged over 60. I use the initials of speakers to indicate who among the three speakers was consulted for a particular data point.<sup>11</sup> The speakers were asked to judge if the target sentence was true and/or felicitous in the designed context, and to provide corrections if the target sentence was not true/felicitous in that context.

## 4 Rigid scope

This section discusses scope interactions of a *l(d)akát* phrase and a DP that contains a numeral. There are two patterns that emerge as a result of word ordering: When the *l(d)akát* phrase precedes the numeral DP, either a collective reading or a distributive reading is acceptable, whereas the reverse order only receives a collective reading. The two patterns are demonstrated in Section 4.1 and 4.2 respectively.

### 4.1 *L(d)akát* precedes numeral

In (9), the *ldakát* phrase precedes the numeral phrase, and the sentence is judged to be compatible with either a distributive reading or a collective reading.

- (9) *ldakát has {tléix’/tléi-náx} xáat has=awdzit’éix.*  
 all 3PL one/one-HUM fish 3PL.HUM=s/he.hook.fished  
 a. ‘Each of them caught one fish.’ (w/ *tléix*)  
 b. ‘All of them caught one (the same) fish.’ (w/ *tléináx*) (K. B. C.)

One more example is given in (10), which is judged by different speakers to be felicitous in both contexts of (11). The consistent judgements confirm the ambiguous reading in this order.

- (10) *lakát wé káa {tléix’/tléi-náx} ín x’eesháa has=alshát.*  
 all D.MDST man one/one-HUM bottle 3PL.HUM=IMPFV.s/he.hold  
 a. ‘All of the men are holding a bottle (each).’  
 b. ‘All of the men are holding one (the same) bottle.’ (K. J. M. and K. C. M.)

<sup>11</sup> For instance, one initial means that I only elicited the example from one speaker, and two initials mean that I elicited the example from two speakers.

(11) a. Context A



b. Context B



(Pictures from Bruening 2008)

Notice that in (9), the speaker uses a different numeral for each reading, the non-human numeral for the distributive reading and human numeral for the collective reading. This distinction, however, is not consistently observed for the same speaker; (12) is an example in which she uses the non-human numeral for the collective reading.

(12) Context: *The friends gathered their money and bought one house.*

ldakát woosh xoon-i tléix' hít has=aawa.oo.  
 all together friend-PSS one house 3PL.HUM=s/he.bought  
 'All the friends bought one house.'

Comment: "tléinax hít is not good here" (K. B. C.)

The other speakers who provided (10) and judged it against (11a–b) disagreed on which numeral would be used for which reading/context. The inconsistency in a single speaker and across speakers suggests that numeral type does not encode distributivity and the sentences are ambiguous. The speakers might have been aware of the ambiguity and tried to disambiguate the two readings using the two numerals (human vs. non-human).

When they are not provided with the contrastive context, the speakers often use a bare noun for the distributive reading, and judge the counterpart sentence with a numeral to represent the collective reading, as shown in (13–14). Since numeral DPs are demonstrated above (and also found in storyboards) to be compatible with either reading, a contrast like in (13–14) should be regarded as a tendency only, probably due to interference from bare nouns, which have neutral number and might obligatorily receive a narrow scope interpretation (see Section 4.2).

(13) Context: *Speakers were asked to describe a picture in which each of the three trees has a seagull.*

lakát wé kéidladi aas yík-t has=keen.  
 all D.MDST seagull tree inside-PNCT 3PL.HUM=be.seated.PL  
 'All the seagulls are sitting on a tree.' (K. J. M.)

(14) Context: *same as (13)*

lakát wé kéidladi tléix' aas yík-t has=keen.  
 all D.MDST seagull one tree inside-PNCT 3PL.HUM=be.seated.PL  
 'All the seagulls are sitting on one tree.'

Comment: (Laughing) "It says they are sitting on one tree together." (K. J. M.)

The discussion so far shows that when *l(d)akát* precedes a numeral it is compatible with distributive or collective readings.<sup>12</sup> Yet, the felicity of the collective readings cannot prove that

<sup>12</sup> The possibility of the two interpretations was also reported in Cable (2008). Cable considers the collective interpretation as one piece of evidence for the claim that subjects can be c-commanded by objects in the

the order “*l(d)akát* ... numeral” allows inverse scope (i.e., *l(d)akát* receives narrow scope under the numeral) because the inverse-scope interpretation entails the surface-scope reading (Reinhart 1997; Cooper 1979; Ruys 1992).<sup>13</sup> Example (15) illustrates this with an English example. If a context is such that the sentence ‘Everyone caught a fish’ in (15) is true with a single fish that everyone caught (i.e., inverse-scope reading), then it is necessarily true that for everyone there is a fish he caught (i.e., surface-scope reading). Therefore, to show (15) can have an inverse scope reading, it is necessary to demonstrate a context in which the inverse scope reading is true but the surface scope reading is false; otherwise, the supposedly inverse-scope reading could be just a specific instance of the surface-scope reading. Since the truth of (15b) entails the truth of (15a), it is impossible to prove the inverse-scope construal for (15).

- (15) Everyone caught a fish.  
 a. Surface-scope reading: true  
 b. Inverse-scope reading: true

On the other hand, the entailment does not obtain in the reverse pattern. For example, in a context such that multiple fish were caught, (16) is judged to be true in its inverse-scope reading but false in its surface-scope reading. Therefore, the order that can be used to demonstrate genuine inverse scope is that in which a numeral precedes *l(d)akát*, in which case inverse scope does not entail surface scope.

- (16) A man caught every fish.  
 a. **Surface-scope reading: false**  
 b. Inverse-scope reading: true

If there is inverse scope, we expect that Tlingít sentences using the word order of (16) are accepted in a distributive context. Section 4.2 shows that this does not hold.

#### 4.2 Numeral precedes *l(d)akát*

Example (17) was elicited by presenting the context (18a), confirming the surface scope of the target order. Then the context was changed to (18b), for which the speaker was asked to judge if (17) was still true, and the result was negative. To prevent felicity judgements being carried over from a previous context, distributive contexts were also presented to the speaker first for the target order. (19) is an example from the same speaker, who rejected (17) in (18b), which is judged to be infelicitous, as indicated by the speaker’s comment. Since the surface-scope reading in (19) is pragmatically odd, if there were inverse scope, (19) should be felicitous. (20) gives another example from a different speaker, which reports the same judgement.

- (17) *tléi-náχ káa ldakát xáat aawasháat.*  
 one-HUM man all fish s/he.rod.fished  
 ‘One man caught every fish.’ (K. B. C.)

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canonical SOV order, leading to his proposal of covert A-scrambling. As discussed in this and next section, this reading does not necessarily indicate inverse scope, and inverse scope is absent in Tlingít.

<sup>13</sup> I thank Lisa Matthewson for reminding me of this issue.

(18) a. Context A: accepted



b. Context B: **rejected**



(Pictures from Bruening 2008)

(19) Context: *You saw four seagulls flying to sit in each of your four trees.*

# *tléix'* kéídladi ldakát aas yík-t áa.<sup>14</sup>  
 one seagull all tree inside-PNCT it.is.sitting

Intended for 'A seagull is sitting in every tree.' (K. B. C.)

Comment: "Same as you can't be every place at once; you can say it but it makes no sense."

(20) Context: *You have three cats. You place each one into a box.*

# *tléi-náx* (yatee) wé dóosh lakát wé kóok yík-t  
 one-HUM it.STV.IMPFV.be D.MDST cat all D.MDST box inside-PNCT  
 yéi yatee.

thus it.STV.IMPFV.be

Intended for 'A cat is inside every box.' (K. J. M.)

To recapitulate, (17) only receives the surface-scope reading, and (19) and (20) are infelicitous. We therefore conclude that the inverse-scope reading is absent in Tlingít. Table 1 summarizes the scope readings for the two word orders.

**Table 1:** Scope readings of *l(d)akát* and numeral

	<i>L(d)akát</i> precedes numeral	Numeral precedes <i>l(d)akát</i>
Surface scope	✓	✓
Inverse scope	N/A	✗

To receive a wide scope reading, *l(d)akát* must take *surface* wide scope. This can be achieved by overt movement of the *l(d)akát* phrase. As shown in (21), the *l(d)akát* phrase originates in the prepositional phrase *ldakát wé aas yíkt* 'inside all the trees' and raises to a position preceding the bare noun *kéídladi* 'seagull'.<sup>15</sup>

(21) [*ldakát wé aas*]<sub>i</sub> kéídladi a [<sub>pp</sub> *t<sub>i</sub> yík-t* ] áa.  
 all D.MDST tree seagull inside-PNCT it.is.sitting  
 'Every tree has a seagull sitting in/on it.' (K. B. C.)

<sup>14</sup> Note that the sentence is ungrammatical with a plural verb 'sit':

(iv) \* *tléix'* kéídladi ldakát aas yík-t *keen*  
 one seagull all tree inside-PNCT be.seated.PL

<sup>15</sup> Thanks to James Crippen for pointing out this structure to me.



Another strategy that the consultants often use is to paraphrase the target verb so that *l(d)akát* can maintain wide scope in surface order; compare (22a) below to (20) above. Sometimes, the consultants simply paraphrase the whole sentence to achieve “distributivity”, as given in (22b).

(22) Context: *the same as (20)*

a. [*lakát wé kóok*] [*tléi-náx* yatee wé dóosh] jee-yís.  
 all D.MDST box one-HUM it.STV.IMPFV.be D.MDST cat possession-for  
 ‘All the boxes have a cat.’ (Lit. ‘Every box is for a cat.’) (K. J. M.)

b. *nás’k* yatee wé dóosh *ka nás’k* yatee wé  
 three it.STV.IMPFV.be D.MDST cat and three it.STV.IMPFV.be D.MDST  
*kóok wé dóosh* jee-yís.  
 box D.MDST cat possession-for  
 ‘There are three cats and there are three boxes for the cats.’ (K. J. M.)

One pattern I have not yet elicited is when a bare noun precedes a *l(d)akát* phrase. Since bare nouns in Tlingít are number neutral, and lack scalar implicature, they are expected to always receive narrow scope (i.e., they are scope-less) (Bittner 1994; van Geenhoven 1998; Chierchia 1998; Rullmann and You 2006; among others) even when they precede the *l(d)akát* phrase.

## 5 *L(d)akát* and negation

This section shows that scope interactions of *l(d)akát* and negation constitute support for the absence of inverse scope. I also compare ordering of *l(d)akát* phrases and indefinites with respect to negation.

Tlingít allows rather free word orders, in which SOV is one of the most common orders. When a *l(d)akát* phrase appears in the subject position, it must linearly precede the negation *tléil*, while the reverse order is ungrammatical, as shown by the contrast in (23–24). For a *l(d)akát* phrase to remain in the subject position and within the scope of negation, a focus marker must appear to mark the *l(d)akát* phrase, as shown in (25), whose structure is significantly different from a normal declarative sentence like (23).<sup>16</sup> What is highlighted here is that (23) only allows a wide-scope reading of *l(d)akát*; that is,  $\forall \neg$  ‘all not’ (equivalent to  $\neg \exists$  ‘no one’), but not  $\neg \forall$  ‘not all’. In other words, the negation cannot take wide scope over the *l(d)akát* phrase when it follows the *l(d)akát* phrase. This is reminiscent of the absence of inverse scope demonstrated in Section 4.

(23) [*ldakát wé yatx’í*] *tléil kóox* has=uwaxáa.  
 all D.MDST children NEG rice 3PL.HUM=PFV.s/he.ate  
 ‘No children ate rice.’ (Lit. ‘All the children didn’t eat rice.’)  
 \*‘Some children ate rice, and some didn’t.’ (K. B. C.)

(24) \**tléil* [*ldakát lingít*] *tléikw* has du tuwáa ushgú.  
 NEG all people berry 3PL 3H.PSS mind.face.at it.IRR.STV.IMPFV.enjoy  
 Intended for ‘Not everyone wants berries.’ or ‘No one wants berries.’ (K. B. C.)

<sup>16</sup> Whether the *l(d)akát* phrase in (25) forms a constituent with negation or the negation takes scope over the whole focused sentence needs to be explored. Importantly, (25) can’t be considered as the reverse counterpart of (23).

- (25) *tléil* *ldakát* *káa* *áwé* *tóoch*'*anéit* has=*alshát*.  
 NEG all man FOC bottle 3PL.HUM=s/he.is.holding  
 'Not all men are holding a bottle.' (Some men are and some are not.)  
 \*'No one is holding a bottle.' (K. B. C.)

I now turn to cases where *l(d)akát* phrases are in an object position. Interestingly, as shown in (26–27), the object that contains *l(d)akát* must follow, rather than precede, negation, forming the reverse pattern of *l(d)akát* phrases as subjects. While (26) is ungrammatical, (27) is grammatical and crucially, only interpreted as  $\neg \forall$  'not all' (equivalent to  $\exists \neg$  'some not') but not  $\forall \neg$  'all not', which is the surface-scope reading. Once again, the inverse scope is proved to not exist. The missing inverse-scope reading ( $\forall \neg$ ) can be obtained via semantic equivalence to a bare noun in the scope of negation ( $\neg \exists$ ), as given in (28a); note that like object *l(d)akát* phrases, bare nouns cannot precede negation, as shown by (28b).

- (26) \*[*lakát wé* *tléikw*] *tléil* *awuxáa*.  
 all D.MDST berry NEG it.IRR.PFV.s/he.eat  
 Intended for 'He didn't eat any berries.' (K. J. M.)
- (27) *tléil* [*lakát wé* *tléikw*] *awuxáa*.  
 NEG all D.MDST berry it.IRR.PFV.s/he.eat  
 'He didn't eat all the berries.' (i.e., There are some berries left.)  
 \*'He ate none of the berries.' (K. J. M.)
- (28) a. *tléil* [*tléikw*] *awuxáa*.  
 NEG berry it.IRR.PFV.s/he.eat  
 'He didn't eat any berries.' or 'He ate none of the berries.' (K. J. M.)
- b. \*[*tléikw*] *tléil* *awuxáa*.  
 berry NEG it.IRR.PFV.s/he.eat  
 Intended for 'He didn't eat any berries.' (K. J. M.)

The two patterns of *l(d)akát* and negation in terms of word order and subject-object asymmetry are summarized in Table 2. *L(d)akát* phrases as subjects must precede and take wide scope over negation, whereas *l(d)akát* phrases as objects must follow and take narrow scope under negation. In either case, no inverse scope arises.

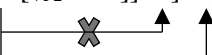
**Table 2:** Scope readings of *l(d)akát* and negation

	<i>L(d)akát</i> (SUBJ) precedes negation	Negation precedes <i>l(d)akát</i> (OBJ)
Surface scope	✓ ( $\forall > \neg$ )	✓ ( $\neg > \forall$ )
Inverse scope	✗ ( $*\neg > \forall$ )	✗ ( $*\forall > \neg$ )

It is noteworthy that the subject-object asymmetry in Tlingít has been argued in Cable (2008) based on several different facts, one of which also involves negation. Cable found that *wh*-words receive an NPI reading in the scope of negation (Cable 2006), but while objects in pre-verbal and post-verbal positions can fall inside the scope of negation, as in (29), only pre-verbal subjects can be properly licensed, as in (30).

- (29) a. *tlél daa sá xwatéen.*  
 NEG what Q I.saw<sup>[SEP]</sup>  
 ‘I didn’t see anything.’
- b. *tlél xwatéen daa sá.*  
 NEG I.saw what Q  
 ‘I didn’t see anything.’ (Cable 2008: 30)
- (30) a. *tlél aadóoch sá awuxá.*  
 not who.ERG Q ate  
 ‘Nobody ate it.’
- b. \**tlél awuxá aadóoch sá.*  
 not ate who.ERG Q (Cable 2008: 30)

Cable argues that assuming the underlying structure in (31), where negation heads a projection above VP and subjects are base-generated at a position that asymmetrically c-commands objects, post-verbal subjects are blocked by locality from moving to a higher specifier within the same VP (but they are free to move into a projection above VP), as demonstrated by (32). See Cable (2008) for details.

- (31) [<sub>NegP</sub> NEG [<sub>VP1</sub> S [<sub>VP2</sub> O V]]]
- (32) [<sub>NegP</sub> NEG [<sub>VP1</sub> [<sub>VP1</sub> S [<sub>VP2</sub> O V]] S] S]
- 

However, it should be pointed out that the position of subjects relative to negation proposed by Cable is different from what has been discussed in this section. Compare (30a) and (23–24) above: Subject *wh*-indefinites must follow negation, whereas subject *l(d)akát* phrases must precede negation. It is evident that the semantics of subjects plays a role in the interaction with negation, an effect which is, however, absent for objects. We may postulate that there are two possible positions for subject, as schematized in (33a). The two positions allow the subject to be interpreted at a specific position in terms of semantics—inside the VP when it is indefinite and outside the VP when it is universally quantified. Alternatively, we can hypothesize two positions for negation, as schematized in (33b). Further evidence would be required to make a decision as to which position is correct.

- (33) a. [<sub>S</sub> [<sub>NEG</sub> [<sub>VP</sub> S [ O V]]]]  
 b. [<sub>NEG</sub> [<sub>VP</sub> S [<sub>NEG</sub> [ O V]]]]

I leave the position of negation and subject for future research but end this section by noting one more ordering fact conditioned by the semantics of noun phrases; unlike indefinite objects (cf. (28b) above), definite objects can precede negation:

- (34) [*wé shaawát*] *tlél dáx xwasakú.*  
 D.MDST woman NEG DIST IRR.I.know  
 ‘I don’t know those women.’ (K. B. C.)

## 6 Evidence from distributivity

The distributive interpretation found with “*l(d)akát* ... numeral” sequences is not found with other (non-Q) DPs. Ordinary plural DPs significantly differ from *l(d)akát* phrases in disallowing/dispreferring distributive readings. As shown in (35–37), coordinated DPs, plural DPs, and numeral DPs, when present with a numeral phrase in sentences, only have a cumulative reading.

- (35) *Joe ka Colin tléidooshú x'úx' has=aawatíw.*  
 Joe and Colin six book 3PL.HUM=s/he.read  
 ‘Joe and Colin read 6 books in total.’  
 Comment: “Not each! If you want to say ‘doing things together’ you have to say *woosh een* ‘together (reciprocal)’. This just says there are 6 books there and two people read them; one maybe two and one maybe four.” (K. B. C.)

- (36) *aḵ káa yát-x'-í nás'k xáat has=aawasháat.*  
 1SG.PSS man child-PL-PSS three fish 3PL.HUM=s/he.rod.fish  
 ‘My male children caught three fish.’  
 Comment: “It only says they caught three fish.” (K. B. C.)

- (37) *nás'k yatee wé dóosh tléix' kóok yík-t*  
 three it.STV.IMPFV.be D.MDST cat one box inside-PNCT  
 has=yawdiháa.  
 3PL.HUM=crowd.PL  
 ‘Three cats are crowded in one box.’ (K. J. M.)

Distributive readings are guaranteed/preferred when the numeral distributive affix *-gaa* (or the distributive preverb *dax-* and *daga-*) is present (see Cable 2014):<sup>17</sup>

- (38) *Joe ka Collin tlek'-gaa-náḵ tléidooshú x'úx' has=aawatíw.*  
 Joe and Collin one-DIST-HUM six book 3PL.HUM=s/he.read  
 ‘Joe and Collin, one by one, read six books.’ (K. B. C.)
- (39) *aḵ kaa yát-x'-i nás'gi-gaa xáat has=aawasháat.*  
 1SG.PSS man chil-PL-PSS 3-DIST fish 3PL.HUM=s/he.rod.fished  
 ‘My male children caught 3 fish each.’ (K. B. C.)
- (40) *aḵ séek' hás tleidooshú x'úx' dax=has=aawatíw*  
 1SG.PSS daughter 3PL six book DIST=3PL.HUM=s/he.read  
 ‘My daughters read 6 books each.’ (K. B. C.)

The contrast between uses of *l(d)akát* and ordinary plural DPs is expected if *l(d)akát* induces the distributivity typical of quantifiers, and DPs that contain *l(d)akát* are quantificational. The contrast is unexplainable under the view that *l(d)akát* does not create quantifiers and the rigid scope simply follows from word order or a general property derived from word order.

<sup>17</sup> Note that the distributive affix *-gaa* was not volunteered by the speakers but accepted in follow-up elicitation. One of the speakers tends to use human numerals for distributive readings.

## 7 Towards an analysis

I have shown that a phrase that contains *l(d)akát* exhibits only surface scope with respect to a numeral DP and negation. I have further shown that the observed distributivity associated with *l(d)akát* is absent in cases of ordinary plural DPs, which indicates that the rigid scope is a genuine property of *l(d)akát*. We can now complete the picture as in (41) by confirming *l(d)akát* phrases are quantificational (see the discussion in Section 3):

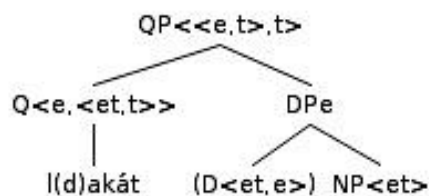
(41) [<sub>QP</sub> *l(d)akát* [<sub>DP</sub> (D) NP]]

In terms of semantic composition, *l(d)akát* behaves more like English *all* rather than English *every* in that it is not a determiner quantifier (Partee 1995), and does not combine with a property-denoting NP directly. The behaviour of *l(d)akát* with respect to number agreement (i.e., verbal agreement and pronominal binding) also parallels English *all* in acting like a plural. In what follows, I extend two analyses that apply to English *all* in the literature to *l(d)akát*, a head quantifier analysis (Matthewson 2001) vs. a non-quantifier modifier analysis (Brisson 1998, 2003), and outline the predictions each analysis makes.

Following Matthewson’s (2001) analysis of St’át’imcets *tákem* ‘all’, *cw7it* ‘many’ and *zi7zeg* ‘each’ as well as the extension to English *all*, *both*, *half*, and *every*, *l(d)akát* would instantiate a non-D quantifier of type  $\langle e, \langle et, t \rangle \rangle$ , with the denotation in (42), and the composition of *l(d)akát* phrases will proceed as in (43). Assuming plural nouns denote plural individuals formed by a join semi-lattice (Link 1983), *l(d)akát* takes a plural individual and a predicate, and defines that every atom of that individual is true of the property denoted by the predicate. This analysis captures the distributive effect of *l(d)akát* phrases, and can be possibly applied beyond plurals to mass nouns, and singular individuals (see fn. 6). The proposal that *l(d)akát* is a quantifier with rigid scope predicts it to exhibit the same scopal effect with another quantified phrase (see Davis 2010, 2013 for this test in St’át’imcets).

(42)  $[[l(d)akát]] = \lambda x \in \cdot D_e . \lambda P \in \cdot D_{\langle e, t \rangle} . \forall y \leq x [\text{atom}(y) \rightarrow P(y) = 1]$

(43)



An alternative analysis is Brisson’s (1998, 2003) non-quantifier modifier proposal for English *all* and *both*, which suggests these are not true quantifiers, but rather modifiers that adjust the meaning of a definite DP. As exemplified in (44), an implicit distributive operator is assumed to be on the (distributive) predicates, whose restriction contains a contextually specified set consisting of the domain of discourse, termed the *cover* (Schwarzchild 1996). The function of *all* is to ensure that the subsets of a cover are “good-fitting”, in that they only contain individuals in the restriction of the NP, as given in (45).

- (44) a. The boys laughed = [[  $D^{Cov}$  ]] (laughed)(the boys)  
 b.  $\lambda P \in D_{\langle e, \langle t, t \rangle \rangle} . \lambda x \in D_e . \forall y [y \leq x \ \& \ y \in Cov \rightarrow P(x)]$

(45) *All-VP Rule* (Brisson 2003: 142)

*All* has no ordinary translation, and a domain-adjusting meaning of  $[\lambda x. \text{good-fit}(Cov)(x)]$

One disadvantage of this analysis is that the presence of *all* entails the presence of a distributive operator, but in Tlingít, it appears that without *l(d)akát*, distributive readings are hardly present. Yet, more evidence is needed to support one analysis over another. We also need syntactic evidence; for example, if *l(d)akát* is a modifier but not a head, we may expect it can float. I leave the two options open for future exploration.

## 8 Conclusion

This paper discusses empirical facts about scope interpretations of the quantifier *ldakát* in Tlingít. I showed that *ldakát* phrases can bind a pronominal variable, and take scope over a numeral DP in the surface order but do not allow inverse scope. The rigid scope was also consistently observed with negation. The findings suggest that the scope interpretations that quantifiers can have can vary across languages, and also raises questions about whether such differences can be linked to any other independent differences between the languages. Inverse scope is shown to be dispreferred due to a processing cost of the complex syntactic representation of inverse scope (Anderson 2004), but this still does not explain the language differences. Can we resort to absence/ presence of covert quantifier raising after all? I also presented the basic syntax of *ldakát* phrases and discussed the semantics of *ldakát* being a head and a modifier following the analysis of Matthewson (2001) and Brisson (1998, 2003). There remain core questions about facts on Tlingít's nominal semantics that need to be answered in order to decide on an appropriate analysis and to determine whether the varied facets of quantifiers across languages can be explained by a single uniform analysis.

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