A fieldworker’s guide to the semantics of noun phrases

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April 28, 2012
Goals of the talk

• Outline tools for a fieldworker investigating the semantics of noun phrases.

• Illustrate these tools with respect to two case studies:
  
  Case study 1: Definiteness
  Case study 2: Quantifiers
Languages I’ll be using as examples

St’át’imcets

• Also known as Lillooet
• Salish family, Northern Interior branch
• British Columbia, Canada
• Highly endangered

Gitksan

• Tsimshianic family
• British Columbia, Canada
• Highly endangered
• Under-researched

Secondarily:
• Pirahã
Why do fieldwork on semantics?
It’s urgent and important

• As we know, any linguist who works on an endangered language, or an under-described language, needs to document that language as fully as possible.

• Whether our goals are formal, functional, descriptive, typological, or some combination of these ... the first step is always a correct understanding of the facts.

• Meaning is not surface-visible. We can’t directly record meaning; we need to work with clues to extract it.

• Semantics is often the most ignored part of documentation.
Issues in the semantics of noun phrases

- Definiteness
- Specificity
- Plurality
- Distributivity
- Count vs. mass
- Quantification
- Scope
- Polarity
- Evidentiality
- ...

Which methodologies should we use?
Anything and everything that works

• A range of methodologies should be used:
  
i. examination of textual materials
  ii. elicitation of targeted but spontaneous structures
  iii. direct elicitation, including gathering of speaker judgments

• I will give specific illustrations of each of these during the case studies.
Case study 1: Definiteness
Why should we care?

- If my language doesn’t even have determiners, should I bother thinking about definiteness?
- Yes!

It’s theoretically interesting:
  i. Do all languages possess ways to distinguish definite from indefinite?
  ii. If languages don’t encode definiteness on determiners, do they do it anywhere else? What are the possibilities?
  iii. Are there phonologically null determiners? What is their semantics?

It’s descriptively important:
  i. Languages without determiners can still vary in what their noun phrases mean (Gillon 2010).
  ii. It could be that some determiner-less noun phrases can be interpreted as definite, and others cannot (even within the same language).

False information is easy to come by: ... →
What WALS says about definiteness in North and South America

• The World Atlas of Linguistic Structures, chapter 37 ‘Definiteness’:
  
  http://wals.info/feature/37A?tg_format=map&v1=c00d&v2=c99f&v3=cd00&v4=dfff&v5=cccc

• WALS claims Squamish Salish has a definite word distinct from a demonstrative; this is false (Matthewson 1998, Gillon 2006).

• WALS claims Gitksan has a definite affix distinct from a demonstrative; this is false.

• How can we make WALS more accurate when it comes to semantics? By doing accurate description of semantic phenomena (and emailing the WALS authors and alerting them to the work).
A working definition of definiteness

• Start with a working definition so we know what to look for, and how to test it.

• A definite noun phrase is one which is felicitous only in familiar, unique discourse contexts.

• A definite is felicitous if the speaker and the hearer both know before the utterance that there is a unique referent corresponding to the noun phrase.

• This working definition makes predictions which we can test.
Using texts to examine definiteness

• Texts are useful for testing definiteness: we can compare the first reference to an individual with later references to it.

• If a noun phrase can have exactly the same form when its referent is first mentioned, and in a subsequent sentence referring to the same individual, we have a clue that that form can be interpreted as both definite and indefinite.

• (That doesn’t mean we need to assume ambiguity between definite and indefinite interpretations, but that’s a matter of analysis; see Matthewson 1999 for discussion.)
St’át’imcets textual evidence for (a lack of) a definiteness distinction

(1) Wá7=lhkan ts7a sqwégwel’en-tsin t.=s=a xíl-em i=n=kúkw7=a
  IMPF=1SG.SUBJ DEM tell-DIR-2SG.OBJ DET=NOM=EXIS do-MID DET.PL=1SG.POSS-grandm.=EXIS
múta7 ni=n-grandfather=ha lh=as máyt=wit i=sts’wán=a
and DET=1SG.POSS-grandf.=EXIS COMP=3CONJ make=3PL DET.PL=wind-dried.salmon=EXIS
‘I’m going to tell you a story about what my grandmother and my grandfather did when
they made wind-dried salmon.’

Kéla7 xzum ti=xétsem’=a wa7 lak l=ku=cá7=a.
first big DET=BOX=EXIS IMPF lie PREP=DET=high=EXIS
‘There was a really big box on the top floor.’

…

Cát-an’-an, n-lhám’-lec t.=s=a lak i=sts’wán=a.
lift.up-DIR-1SG.ERG LOC-put.in-AUT DET=NOM=(IMPF)EXIS lie DET.PL=w-dr.salmon=EXIS
‘I lifted her, she got in where the wind-dried salmon was.’

Kéla7 aylh cin’ (lh=)ka-uts’qa7-s-túm-a lhél=ti=xétsem’=a.
first then long.time (COMPL=)CIRC-go.outside-CAUS-PASS-CIRC from=DET=BOX=EXIS
‘It took a very long time to get her out of the box.’ (Matthewson 2005:278-280)
Gitksan textual evidence for (a lack of) a definiteness distinction

(2) Ki’i=hl sa’ ii saa yee=hl ’wii sim’oogit, saa ’witxw-it goo=hl
one=CN day and away go=CN big chief away come-SX LOC=CN
Ansbayaxw

‘One day a big chief from Ansba’yaxw set out.’

... and he got to another chief’s place, Lax Gwilaams, and was welcomed by the other chief and the people ...

ii-t ts’im guutdiit=hl sim’oogit=hl ‘witxwt gi, goo=hl ’wii wilp
and-3SG.II inside take-3PL.II=CN chief=CN come-3SG.II DIST LOC=CN big house
‘and they took the chief in, the one who arrived, to the big house.’

Barbara Sennott ‘Killer Whale Story’

• In both St’át’imcets and Gitksan, the same marking is used on noun phrases, regardless of whether the referent is non-familiar, or familiar.
Are we done?

_Dimmendaal (2001:69):_

‘The referential meaning of nouns (in terms of definiteness and specificity) is an intricate topic that is extremely hard to investigate on the basis of elicitation. In the end it is texts or connected discourse in general in the language under investigation which provide the most important clues for analysis of these grammatical domains.’
Particular issues with doing *semantics only* via texts

- Meaning is only accessible indirectly, through
  1. translation
  2. the (in)ability of an utterance to appear in certain discourse contexts

*Issues with translations:*

- Texts paired with translations don’t reveal the precise meanings of the utterances or the elements they contain.

- Translation is an imperfect correspondence. Often, there is no way to express exactly the same meaning in different languages.

- What is easily expressible in one language may be expressible only with difficulty in another.
Particular issues with doing *semantics only* via texts

*Issues with occurrence in certain discourse contexts:*

- Texts give a set of utterances which are acceptable in the discourse context set up by the text. This gives us good clues.

- But extracting generalizations about the discourse contexts in which elements can appear *only* through observing naturally occurring speech would require a massively large corpus and a really long time.

- Texts might not show the full range of contexts a form can be used in.

- Texts don’t give us information about what cannot be said.
Challenges with using *only* texts to investigate definiteness

- If a language makes no distinction between familiar and non-familiar referents, this can be shown fairly well by a corpus of texts.

- But if a language does encode distinctions among noun phrases, it is very hard to prove exactly what distinction is being made using only texts.

- Even in a text, we don’t know the full discourse context – what was said before the recorder was turned on? Is the first sentence *really* non-familiar?

- Accommodation: Even if the referent is not familiar, the audience may ‘accommodate’ the referent (act as if it was familiar). (Even in English, you can start a story with ‘the chief’.)

- Only a couple of examples per text. With no way to target specific constructions, we have to wait till they appear, meaning we need huge amounts of data to make generalizations.
Using storyboards to examine definiteness

• A storyboard is a series of pictures designed to elicit free spontaneous speech, but allowing the targeting of specific constructions (Burton and Matthewson 2011, building on much other work).

• Storyboards combine the advantages of texts:
  • fluent, natural speech
  • limited translation interference
  • forms appear in context

with the advantages of elicitation:
  • ability to target specific forms, particularly context-sensitive ones
  • ability to obtain negative data (through follow-up elicitation)
Using storyboards to examine definiteness

- Storyboards are fun for the speakers, and make excellent materials for language learners.

- Storyboards enable the same story to be collected in different languages. This gives consistent contexts across elicitations by different researchers.

Disadvantage of storyboards:

- Time investment to draw the pictures.

- [www.totemfieldstoryboards.org](http://www.totemfieldstoryboards.org)

- ‘On the Lam’: a storyboard designed to elicit modality, but it can also be used for definiteness. ... →
On the Lam

This is John and this is Sue.

One day, they are catching fish together.

A boat comes by.

A policeman and a policewoman are in the boat.
On the Lam

"We must be in trouble! Let's run away!" So they run into a house nearby.

The house is old and empty.

...
On the Lam results for St’át’imcets

(3) \( q’ílhil = \text{wit}\) \( nilh\) \( s = tsícw = \text{wit}\) \( ta = tsitcw = \text{a}\)
\( \text{run} = \text{3PL}\) \( \text{FOC}\) \( \text{NOM-arrive} = \text{3PL}\) \( \text{DET} = \text{house} = \text{EXIS}\)

‘They ran and they came to a house.’

\(cw7aoz\) \(låti7\) \(ku = wa7\) \(wá7\) \(l = ta = tsítcw = \text{a}\)
\( \text{NEG}\) \(\text{DEIC}\) \(\text{DET} = \text{IMPF}\) \(\text{be}\) \(\text{in} = \text{DET} = \text{house} = \text{EXIS}\)

‘Noone was in the house.’

- Storyboard results support the generalization that noun phrases containing the determiner \(ta...a\) can be used in familiar or non-familiar contexts.
On the Lam results for St’át’imcets

(3) \( q'{ílhil} = \text{wit} \quad \text{nìlh} \quad s = \text{tsícw} = \text{wit} \quad \text{ta} = \text{tsitcw} = \text{a} \)

run=3PL FOC NOM-arrive=3PL DET=house=EXIS

‘They ran and they came to a house.’

\( \text{cw7aoz} \quad \text{láti7} \quad \text{ku} = \text{wa7} \quad \text{wá7} \quad l = \text{ta} = \text{tsítcw} = \text{a} \)

NEG DEIC DET=IMPF be in=DET=house=EXIS

‘Noone was in the house.’

• Storyboard results support the generalization that noun phrases containing the determiner \( ta...a \) can be used in familiar or novel contexts.

• Further question: what about the determiner \( ku \)?

• In both original narratives and storyboard elicitations, \( ku \) appears only in indefinite contexts. Follow-up elicitation using the storyboard is needed to confirm whether this is an accident or whether \( ku \) is disallowed in definite contexts.
Using direct elicitation to examine definiteness

*Semantic fieldwork methodology* (simplified; see Matthewson 2004, Krifka 2011):

1. Set up an *explicit discourse context* for the utterance to be tested. (If you are doing follow-up elicitation to a storyboard, this step is taken care of.)

2. Elicit either a *translation* into the object language of a sentence in the discourse context, or a *judgment* about the acceptability of an utterance in the discourse context. (= Felicity Judgment Task)
The Felicity Judgment Task

- The Felicity Judgment Task is similar to the Truth Value Judgment task used in language acquisition research (cf. Crain & Thornton 1998, Crain 2001 and much other work).

- The task asks for a judgment every native speaker is qualified to make: whether an utterance in their language sounds acceptable in a particular discourse context.

- The task does not ask the speaker to perform analysis, and it does not involve translation.

- The speaker’s response gives us clues about when sentences are true (which is a big part of understanding their semantics).

- Assumption (following Grice’s 1975 Maxim of Quality): A speaker will only accept a sentence in a discourse context if the sentence is true in that context.
The Felicity Judgment Task

- **Rejection** of a sentence in a discourse context gives only partial information. The sentence may be false in that context, but it may also be rejected on other grounds (e.g., there may be a presupposition failure, or it may be pragmatically odd for some other reason).

How to do a Felicity Judgment Task

- Present the consultant with the discourse context *before* presenting the object language sentence(s).

- Present the discourse context visually, in the object language, or in another common language. The context is merely background information; its linguistic features are not relevant.

Elicited evidence for (the lack of a) definiteness distinction in St’át’ímcets

**Lack of anaphoricity:**

(4)  
\[ \text{wa7 lts7a pankúph=a ti=swúw’h=a múta7 wa7 láku7} \]
  
be DEIC Vancouver=EXIS DET=cougar=EXIS and be DEIC
  
\[ líl’wat=a ti=swúw’h=a t’it \]
  
Mount.Currie-EXIS DET=cougar=EXIS also

‘There is a cougar here in Vancouver and there is also a cougar there in Mt. Currie.’

Consultant’s comment: “There are two different cougars.” \(\text{ (Matthewson 1999)}\)

**Non-uniqueness:**

(5)  
\[ \text{ka-hál’h-a ta=nkakúsent=a} \]
  
CIRC-show-CIRC DET=star=EXIS

‘A star appeared.’ \(\text{ (Matthewson 1999)}\)

- The acceptance of (4) and (5) shows that the St’át’ímcets determiner \text{ ti...a} differs from English \text{ the} in not requiring uniqueness or anaphoricity.
Elicited evidence that *ku* is possible only in indefinite contexts

(6)  

<table>
<thead>
<tr>
<th>Tecwp</th>
<th>kw=Mary</th>
<th>ti=púkw=a.</th>
</tr>
</thead>
<tbody>
<tr>
<td>buy</td>
<td>DET=Mary</td>
<td>DET=book=EXIS</td>
</tr>
</tbody>
</table>

‘Mary bought a book.’

<table>
<thead>
<tr>
<th>Áy=t’u7</th>
<th>kw=(s=)áma-s-as</th>
<th>ku=pukw.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEG=just</td>
<td>DET=(NOM)good-CAUS-3ERG</td>
<td>NON.EXIS.DET=book</td>
</tr>
</tbody>
</table>

‘She doesn’t like books.’

# ‘She doesn’t like the book.’  

(Matthewson 1998)

- The first sentence in (6) sets up a discourse context where a book has been introduced (is familiar). The second sentence tests whether a *ku*-phrase can behave like a definite in coreferring with the first book mentioned.

- The answer is no; *ku* is strictly indefinite. For a coreferential reading in the second sentence of (6), a different determiner (*ti...a*) must be used (Matthewson 1998).
Gitksan also has an unambiguously indefinite element (not a D)

- The element *ligi* is glossed as ‘indefinite’ by Rigsby (1986), and is translated by speakers as ‘or’, ‘maybe’, ‘any’, ‘some’, ‘if’, or ‘-ever’.

(7) \( nee=\textit{dii-n} \quad \text{ga’a}=\textit{hl} \quad \textit{ligi} \quad \textit{smax} \)
\[
\begin{array}{llll}
\text{NEG=CNTR-1SG.I} & \text{see=CN} & \text{ligi} & \text{bear}
\end{array}
\]

‘I don’t see any bears.’

(8) \( \textit{witxw}=\textit{hl} \quad \textit{ligi-t} \quad \textit{naa} \)
\[
\begin{array}{llll}
\text{come=CN} & \text{ligi}=\textit{DM} & \text{who}
\end{array}
\]

‘Someone came.’ (Brown & Davis 2011)

- *Ligi* is optional with many kinds of indefinite noun phrase. It is bad in familiar contexts:

(9) Context: Talking about a specific raven that I own.
\[
\# \quad nee-\textit{dii-n} \quad \text{gya’a}=\textit{hl} \quad \textit{ligi} \quad \textit{gaak}
\]
\[
\begin{array}{llll}
\text{NEG=CNTR-1SG.I} & \text{see=CN} & \text{ligi} & \text{raven}
\end{array}
\]

‘I didn’t see a raven.’
Rigsby was right, but it’s not the full story

- Rigsby’s (1986) grammar correctly identifies *ligi* as an indefinite element.

- However, the gloss ‘indefinite’ (which is all he gives) is not sufficient to predict when *ligi* can be used, and when it cannot.

- *Ligi* does not have the distribution of any element in English or other languages which have been discussed in the literature.

- Fieldwork on *ligi* is currently ongoing!
Summing up definiteness: Lots of work still to be done

- WALS went wrong with Squamish and Gitksan because the descriptive grammars on which WALS is based used the word ‘definite’ for a determiner or an affix, without having done semantic fieldwork.

- Even in languages without determiners, there are issues to be worked on. There is debate about whether bare noun arguments contain null Ds (e.g., Longobardi 1994), don’t (e.g., Chierchia 1998), or sometimes do (e.g., Gillon 2010, Boskovic 2010).

- Even within the same language, some bare nouns may contain Ds, while others don’t; Gillon (2010) argues this for Innu-Aiman (Algonquian). A big part of the argumentation for or against null Ds is semantic.

- Even if a language does not possess determiners, it is still important to establish whether there are any other elements in the language which impose familiarity and uniqueness requirements (or non-familiarity or non-uniqueness requirements).
Case study 2: Quantifiers
A working definition of a quantifier

• A quantifier is an element which enforces a particular relation between two sets.

(10) \textit{all} \ (A,B) = 1 \text{ iff } A \subseteq B

‘All whales are mammals’ is true if and only if the set of whales is a subset of the set of mammals.

(11) \textit{most} \ (A,B) = 1 \text{ iff } |A \cap B| \geq \frac{1}{2}|A|

‘Most linguists are beautiful’ is true if and only if the number of beautiful linguists is greater than half the number of linguists.

• Quantified noun phrases give rise to scopal ambiguities:

(12) All the children built a raft.
   i. For each child \( x \), there is a raft \( y \), and \( x \) built \( y \). \hspace{1cm} \text{(different rafts)}
   ii. There is a raft \( y \), and all the children built \( y \). \hspace{1cm} \text{(only one raft)}
Issues in the semantics of quantifiers

- Proportionality and cardinality
- Distributivity
- Scope
- Count vs. mass
- Genericity
- ...

Using texts to elicit information about quantifiers

- Quantifiers in the St’át’ímçets texts in Matthewson (2005):

<table>
<thead>
<tr>
<th>QUANTIFIER</th>
<th>NUMBER OF TOKENS</th>
<th>ENGLISH TRANSLATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>tákem</td>
<td>c. 170</td>
<td>‘all’, ‘every’, ‘both’</td>
</tr>
<tr>
<td>cw7it</td>
<td>c. 70</td>
<td>‘many’, ‘lots of’</td>
</tr>
<tr>
<td>k’wik’wena7</td>
<td>20</td>
<td>‘a little’, ‘a few’, ‘a bit’</td>
</tr>
<tr>
<td>sáq’ulh</td>
<td>8</td>
<td>‘half’</td>
</tr>
<tr>
<td>t’qwaw’s</td>
<td>1</td>
<td>‘both’</td>
</tr>
<tr>
<td>---</td>
<td>0</td>
<td>‘most’</td>
</tr>
</tbody>
</table>
Questions which arise about St’át’imcets quantifiers

- Is tákem like ‘all’, ‘every’, both, or neither?
- Why are there no quantifiers translated as ‘most’? Can St’át’imcets not express this meaning?
- Are the translations idealizations based on the translator’s (my!) ideas of lexical correspondences?
- Are cw7it ‘many’ and k’wík’wena7 ‘a few’ proportional, cardinal, or both?
- How much (or what proportion) counts as cw7it/k’wík’wena7?
- Which quantifiers allow distributive readings?
- Which allow collective readings?
- Can quantified phrases participate in scope ambiguities?
- Do any of the quantifiers have restrictions with respect to the count/mass distinction?
Using direct elicitation to examine quantifiers

*Benjamin Bruening ‘The Scope Fieldwork Project’*
  
  [http://udel.edu/~bruening/scopeproject/scopeproject.html](http://udel.edu/~bruening/scopeproject/scopeproject.html)

- Can noun phrases containing quantifiers participate in scope ambiguities?

  *Bruening (2008) on Passamaquoddy (Algonquian):*

  - Universally quantified objects can take scope both under and over negation.
  
  - Sentence to test: ‘He didn’t catch all the fish.’

  - Visual stimuli to test the two possible scopal readings. Acceptance of the test sentence after viewing the following pictures shows that the sentence has the reading ‘It is not the case that he caught all the fish.’
Visual stimuli for testing quantifier scope

• Test sentence: ‘He didn’t catch all the fish.’
Visual stimuli for testing distributivity (Bruening)

• Test sentence: ‘All the men are holding a bottle / bottles.’

• Acceptance of the sentence for the left-hand picture shows a collective reading is possible.

• Acceptance of the sentence for the right-hand picture shows a distributive reading is possible.
What can happen without direct elicitation: Quantifiers in Pirahã*

- Everett (2005): ‘Pirahã ‘lacks terms for quantification such as “all,” “each,” “every,” “most,” and “some.” ’ ‘The following examples show the closest expressions Pirahã can muster to these quantifiers:

\[(13)\]  
\[t̄i 'ogi-'áaga-ó 'íti'i'isi 'ogi-ó 'i kohoai-baaí,\]
I big-be(permanence)-direction fish big-direction she eat —intensive
\[koga hói hi hi-i kohoi-hiaba\]
nevertheless small amount intensive intensive-be eat-not
‘We ate most of the fish.’
Literally: ‘My bigness ate [at] a bigness of fish, nevertheless there was a smallness we did not eat.’  
(Everett 2005:624)

Claim:

- Everett has not given the data to show that Pirahã lacks quantifiers.

*See also Nevins et al. (2009) on Everett’s proposals about quantifiers.
‘Most’ in Pirahã?

• Before we can assess the claim that ‘ogió ‘big-direction’ is not a quantifier, we need a lot more data. Questions which fieldwork must answer:

• What is the interpretation if the second clause is omitted?
• Does the first clause alone entail that we ate more than half of the fish? (is it false if we ate less than half?)
• If not, does the first clause entail any lower limit on what proportion of the fish we ate?
• Does the first clause entail that we did not eat all the fish?
• Does it implicate that we did not eat all the fish?
• Does ogió participate in scopal interactions?

→ No evidence yet against ‘ogió having the truth-conditional meaning of ‘most’.
Quantifiers in Pirahã?

- Exactly the same point can be made about another potential Pirahã quantifier, báaiso ‘whole’ – the relevant fieldwork has not been done to show that it is non-quantificational.

- As pointed out by Nevins et al., it is irrelevant that Pirahã quantifiers like ‘ogió are morphologically complex.

- It’s not even relevant if they are DP-internal or not. The point is: what do they mean?
Using direct elicitation to examine St’át’ımceqs quantifiers

• St’át’ımceqs quantifiers co-occur with determiners and form a larger nominal constituent.

(14)  
• peq [tákem i=sp’áq’em=a]  
• white [all PL.DET=flower=EXIS]  
• ‘All the flowers are white.’

(15)  
• ts’áqw-an’-em [tákem i=sts’úqwaz’=a]  
• eat-TR-1PL.ERG [all PL.DET=fish=EXIS]  
• ‘We ate all the fish.’

• In some ways, St’át’ımceqs quantifiers behave like English ‘true’ quantifiers (Matthewson 1998, 2001).

• In other ways, St’át’ımceqs quantifiers behave quite unlike English ‘true’ quantifiers (Davis 2010).
Proportional readings

*Cardinal vs. proportional readings of weak quantifiers (Partee 1988):*

- On the cardinal reading of *many*, it suffices for there to be a large number:

  (16) *Context: There are 40,000 students at UBC. Yesterday there was a protest rally and 2,000 students turned up.*
  
  There were many students at the rally yesterday.

- On the proportional reading of *many*, there needs to be a large proportion:

  (17) *Context: There are 100 students in the class. 25 of them raised their hands.*
  
  ? Many of the students raised their hands.

  (18) *Context: There are 30 students in the class. 25 of them raised their hands.*
  
  Many of the students raised their hands.

- A proportional reading is evidence of being a ‘true’ quantifier.
Proportional readings of St’át’imcets quantifiers

(19) úxwal’ \( [i=cw7ít=a \text{ plísmen}] \)
go.home \( [\text{DET=many}=\text{EXIS} \text{ policeman}] \)
‘Many of the policemen went home.’ \( \) (Matthewson 1998:304)

Rejected in a context where 25 policeman go home, but 75 stay.
Accepted in a context where 25 policeman go home, but 5 stay.

• DP-internal \( cw7ít \) has (only) a proportional reading.

• Matthewson (1998) concludes that St’át’imcets possesses real quantifiers.

• But ... →
Lack of scope ambiguities with St’át’imcets quantifiers

• Davis (2010) shows that St’át’imcets quantified phrases do not participate in scopal interactions.

Sentence to test:

(20) Context: Four children are meant to read four books over the summer holidays.

\[ \text{tákem } i=sk’úk’wmi7t=a \quad \text{paqwal’ikst-mín-itas } sáq’ulh \ i=púkw=a \]
\[ \text{all} \quad \text{PL.DET=child(PL)=EXIS} \quad \text{read-RED-3PL.ERG} \quad \text{half} \quad \text{PL.DET=book=EXIS} \]
‘All the children read half the books.’

• Two scopal readings:
  i. For each child x, x read half of the books (different 2 books for each child)
  ii. For half of the books (a certain set of 2 books), all of the children read those 2 books.
Neither scopal reading exists!

(21)

<table>
<thead>
<tr>
<th></th>
<th>A reads</th>
<th>B reads</th>
<th>C reads</th>
<th>D reads</th>
</tr>
</thead>
<tbody>
<tr>
<td>books</td>
<td>1,2</td>
<td>books 2,3</td>
<td>books 3,4</td>
<td>books 1,4</td>
</tr>
</tbody>
</table>

• ‘Given the scenario in [21], [20] should be good on a wide scope reading for the subject: however, consultants reject it in this context. One consultant commented: “No – they read all the books, so you couldn’t say they read half the books” ’ (Davis 2010).

(22)

<table>
<thead>
<tr>
<th></th>
<th>A reads</th>
<th>B reads</th>
<th>C reads</th>
<th>D reads</th>
</tr>
</thead>
<tbody>
<tr>
<td>books</td>
<td>1,2,3</td>
<td>books 1,2,4</td>
<td>books 1,2,3,4</td>
<td>books 1,2</td>
</tr>
</tbody>
</table>

• ‘Conversely, given the scenario in [22], [20] should be good on an inverse scope reading: however, consultants also reject [20] in this context.’
Only cumulative readings

• When is (20) good?

• It is judged good in all situations where each child reads at least one of the books, and a total of two out of the four titles are read (bad otherwise).

• This is a cumulative reading. ‘For all of the children, and for some half of the books, reading went on.’ We do not need a quantifier analysis to generate cumulative readings.

• The cumulative reading does not entail a distributive universal reading. A St’át’ímcets sentence containing a universal quantifier is not acceptable in the core quantificational contexts. This is a real absence of a reading.

• So how do St’át’ímcets speakers express wide-scope distributive universal quantification?

• By paraphrasing, using lists of names.
Another interesting property of St’át’imcets: no generics

- Matthewson (1998): Quantifier-like elements in Salish always co-occur with determiners, which explicitly limit the domain of quantification. This is incompatible with generic quantification, which lacks domain restriction.

- ‘When attempts are made to elicit generic statements in St'át'imcets, a universal construction involving a DP-adjoined quantifier is produced, as shown in [23]. The quantified DP in such statements is identical in form to quantified DPs involving universal quantification over a specific set, as shown in [24].’

(23) \[
\text{[tákem } i=twéw'w'et=a] \quad \text{ama-mín-itas} \quad k=wa \quad \text{píx-em'}
\]
\[
\text{all \quad DET.PL=boy(REDUP)=EXIS \quad good-APPL-3PL.SUBJ \quad DET-IMPF \quad hunt-INTR}
\]

‘All boys love hunting.’

(24) \[
\text{[tákem } i=cácl’ep=a} \quad \text{twéw'w'et] \quad \text{nas} \quad \text{tu7} \quad \text{píx-em’}
\]
\[
\text{all \quad DET.PL=Fountain=EXIS \quad boy(REDUP) \quad go \quad then \quad hunt-INTR}
\]

‘All the boys from Fountain went hunting.’
No real generics in St’át’imcets

- ‘[T]he consultant for [25] commented that “there's a bunch of men there; it doesn’t pertain to all the men in the world.” However, when asked how she would refer to all the men in the world, [25] was the only way it could be done’ (Matthewson 1998).

(25) léxlex  s=Henry  [lhél=ki=tákem=a  sqáyqeycw]
intelligent  NOM=Henry  [from=DET.PL=all=EXIS  man(REDUP)]
‘Henry is the most intelligent of all the men.’

- There is no real generic construction in St’át’imcets. ‘DP-adjoined universal quantifiers are used as the closest approximant, but since the quantifier always co-occurs with a deictic ... determiner, there is no way of quantifying over a group which is not contextually specified.’ (See also Gillon 2006 on Squamish.)
Comparison with Pirahã

- Everett (2005) also asserts that Pirahã lacks generics.

(26) tì́ ˈii bísi hi baíai-hiaba
I blood-one he fear-negative
‘I am not afraid of beings with blood.’

(27) kaoáíbogi hi sabí ˈáagahá
evil spirit he mean is(permanent)
‘Evil spirits are mean.’

- According to Everett (2005:625), ‘These never mean that all beings with blood, for example, fail to inspire fear.’

- ‘they are bounded by immediate experience (e.g., “evil spirits I know about”) and thus are not fully intensional. Rather, each member of the set has to be inspected to see whether it is an evil spirit or being with blood and, if so, whether it is like other such beings.’
My claim is very different

→ I do not draw similar conclusions to Everett about culture or cognition.

• The absence of generics in St’át’imcets does not derive from (or derive) any lack of generalization, intensionality, or displacement.

• It derives from a syntactic restriction (the fact that all quantifier elements must combine with a full DP containing a determiner), and the determiner system (the fact that all determiners which combine with quantifiers encode deictic information).

• Note that ‘classifying sentences’ are possible with infinitives in St’át’imcets:

(28) qwámqwmet k=wa k’écwa7
fun DET=IMPF hockey
‘Playing hockey is fun.’ (Henry Davis, p.c.)
Summary on quantification

• We have only scratched the surface of quantificational issues.

• St’át’imcets quantifiers possess some properties of more familiar quantifiers (proportional readings), but lack others (scope interactions, real generic readings).

• Every quantifier word should be examined separately. Even within well-studied languages, there are many open questions (e.g., what exactly is the difference between all, every and each?)

• Regardless of how a language’s quantifiers are morphologically created, and regardless of their syntax (whether they are even inside DP or not) – it is important to uncover their semantic properties.
Conclusions
Linguistic diversity and how to uncover it

- Evans and Levinson (2009) claim that generative linguists do not discover, do not deal with, and cannot account for, the range of diversity in human languages.

- This is clearly false. Formal linguists – just like many other kinds of linguist – are uncovering linguistic diversity every day (see many talks at this conference, works cited here, etc.).

- In fact, many of Evans and Levinson’s claims about linguistic diversity are based on incomplete or even inaccurate (interpretations of) primary sources.

- The debate about the nature of linguistic diversity, and its theoretical implications, must be based on accurate claims about linguistic diversity.

- At least in semantics, linguistic diversity is accurately discovered only by in-depth, targeted primary fieldwork on individual languages. Based on the results of this fieldwork, we can and should do good typology!
Many thanks to

- St’át’imcets consultants Carl Alexander, Gertrude Ned, Laura Thevarge, the late Beverley Frank and the late Rose Agnes Whitley. *Kukwstumúlhkacw*!

- Gitksan consultants Barbara Sennott, Vincent Gogag and Hector Hill. *Ha’miyaa*!

- Henry Davis for helpful feedback.

- The organizers of Amazonicas 4.

- SSHRC grants #410-2007-1046 and #410-2011-0431, and a Jacobs Research Fund grant.