Passamaquoddy quantifiers: outlier of distributivity-number generalization?

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Overview

- **Distributivity-number generalization (DNG)** for universal quantifiers cross-linguistically (Haslinger et al. 2023)
- **Two counterexamples from Passamaquoddy:** a plural UQ with a necessarily distributive interpretation, and a singular UQ with a collective interpretation.
- **Possible solution: covert group formation operator**, which is independently needed for group predication, given a certain quirk of the language's lexicon.
- **Remaining puzzle:** The UQ *psi-te* taking a singular NP complement is [–dist].

The Distributivity-Number Generalization (DNG)

- Haslinger et al. (2023), refining Gil (1995), propose the following cross-linguistic generalization for universal quantifiers (UQs) (cf. Winter 2001).

(1) **Distributivity-number generalization**: If the complement of a UQ is...
  a. ...SINGULAR, it is [+dist] (restricted to distributive interpretations);
  b. ...PLURAL, it is [–dist] (not restricted to distributive interpretations).

- See data from English, a language which abides by the DNG.

(2) **Every girl** ate 20 sausages/*met in the yard.
  ✓ DISTRIBUTIVE, *CUMULATIVE, *COLLECTIVE

(3) **All the girls** ate 20 sausages/met in the yard.
  ✓DISTRIBUTIVE, ✓CUMULATIVE, ✓COLLECTIVE

- Some languages use the same lexical item for [+dist] and [–dist] UQs, interpretation correlating with the number of the noun selected.

(4) **Kul tefi** akl tlet tufahat
  UQ child.SG ate.PL three apple.PL
  'Every child ate three apples.'
  ✓DISTRIBUTIVE, *CUMULATIVE

(5) **Kul al atfal** akalu tlet tufahat
  UQ DEF child.PL ate.PL three apple.PL
  'All the children ate three apples.' [Syrian Arabic]
  ✓/?DISTRIBUTIVE, ✓CUMULATIVE

- Haslinger et al. propose a single meaning for UQs: $\mathbf{Q}_\forall$

(6) $\mathbf{Q}_\forall = \lambda P_{\langle a,t\rangle}.\lambda Q_{\langle a,t\rangle}.\forall x.[[P(x) \wedge \neg\exists y.[P(y) \wedge \exists z.[z \sqsubseteq x \wedge z \sqsubseteq y]] \wedge y \not\sqsubseteq x]] \rightarrow Q(x)]$

- Intuition: $\mathbf{Q}_\forall$ only quantifies over individuals not overlapping with any individual except its subparts.
- **$\mathbf{Q}_\forall$ + NP-PL**: only quantifies over the **unique maximal plurality**.
- The extension of NP-PL is closed under $\oplus$ (Link et al. 1983).
- **$\mathbf{Q}_\forall$ + NP-SG**: quantifies over every individual in the denotation.
- An atom does not overlap with any other atom.

⟦girl-PL⟧ ⟦girl.SG⟧

Two counterexamples from Passamaquoddy

- **Passamaquoddy(-Wolastoqey):** an endangered Eastern Algonquian language spoken on the Maritime Peninsula (now recognized as Maine, USA & New Brunswick, Canada).
- About 500 speakers, all of whom are over 60 years old (Lewis, Simons & Fennig 2016).
- Two universal quantifiers in the language:

(I) *i-pesq*: composed of the numeral *pesq* 'one' and a distributive prefix *i-*; seemingly specific to the Wolastoqey dialect.

- **Can only be combined with a plural NP complement and only has a distributive interpretation**, as demonstrated by its incompatibility with collective predicates.
- Regardless, our consultant **requires a morphologically plural key**.

(7) #i=pesku-wok **ehpic-ik** kisi= maqey-yik
  I=one-PROX.PL woman-PROX.PL PFV= be.together.AI-PROX.PL
  Intended: 'All the women gathered.' (JCR: EM-2024.01.20)

(8) a. i=pesku-wok **skitapi-yik** 't-opeltom-oni-ya-Ø 'tapakon
  I=one-PROX.PL man-PROX.PL 3-have.TI-N-PL-IN.SG car.IN.SG
  'Each man has a car.'
  b. *i=pesq **skitap** 't-opeltom-on-Ø 'tapakon
  I-one.PROX.SG man.PROX.SG 3-have.TI-N-IN.SG car.IN.SG
  (JCR: EM-2024.10.18)

(II) *psi-te*: compatible with both SG and PL NPs for some speakers.

- Bruening (2008) reports that **both distributive and collective interpretations are available for *psi-te* with both NP.SG and NP-PL.**

(9) psi-te **wasis** kisi-ntu-Ø
  all-EMPH child.PROX.SG PFV-sing.AI-PROX.SG
  'Every child sang.'

(10) psi-te **wasis-ok** 'tawi= pokom-ultu-wok
  all-EMPH child-PROX.PL know.how= skate.AI-PL-PROX.PL
  'Every child knows how to skate.'

(11) psi-te **skicin** naci= mawsqesu-Ø
  all-EMPH Indian.PROX.SG go.do= gather.AI-PROX.SG
  'Every Indian is going to gather.' (Above from Bruening 2008: p. 80)

- *Psi-te* can also take singular quexistentials such as *wen* 'who.PROX.SG'.

(12) psi-te **wen** maqehe-Ø
  all-EMPH who.PROX.SG be.together.AI-PROX.SG
  'Everyone gathered.' (JCR: EM-2024.01.20)

(13) psi-te **wen** siktewocu-Ø welaqik
  all-EMPH who.PROX.SG be.cold.AI-PROX.SG last.night
  'Everyone was cold last night.' (PG: EM-2023.12.04)

- *Psi-te* + plural quexistential is possible for some speakers, but our fieldwork suggests there is a cline towards the singular; furthermore, text examples are sparse (Bruening 2008: fn. 11).
- **The DNG is seemingly violated on both counts**, because...

i. The UQ *i-pesq* can only be combined with a plural NP complement but is [+dist] since it does not have a collective interpretation, as shown in (7-8a).
ii. The UQ *psi-te* taking a singular NP complement is [–dist], in that it can be combined with a collective predicate and receive a collective interpretation.

How to reconcile: Covert group formation

- **A covert operator G to convert a set of pluralities into a set of group atoms**.

(14) $\mathbf{G}_{\text{Cov}} \coloneqq \lambda P_{\langle e,t\rangle}.\lambda g_e.\exists X \in \text{Cov}.\, g = \uparrow X$ where Cov is a set of individuals that cover $\bigoplus P$.

- Independently needed to express group meanings in Passamaquoddy, because there are **no singular group nouns** (brought to our attention by Peter Grishin).
- Plural nouns and headless relative clauses with plural agreement can be **counted by the contextually salient groups** that could be formed from the atoms contained.

(15) yaliqsenomuc-ik 'kan-ey
  oversee.TA-PROX.PL old-ADJZ
  'The steering committee is an old one.'
  ⇏ 'The steering committee members are old.' (JCR: MA-2025.04.11)

(16) nisonu-l nuci=epeskom-hoti-htit ehte-k Sipayik
  be.two.II-IN.PL regularly=play.ball.AI-PL-3PL:CJ IC.be.there.II-IN:CJ Sipayik
  'There are two baseball teams in Sipayik.'
  ⇏ 'There are two baseball players in Sipayik.' (JCR: MA-2025.05.02)

- $\mathbf{G}_{\text{Cov}}$, with the Cov containing pluralities corresponding to the contextually salient groups, makes such counting possible.
- When $\mathbf{Q}_\forall$ applies to $\mathbf{G}_{\text{Cov}}(⟦\text{NP-PL}⟧)$, each group is quantified over, since the group atoms cannot overlap.
- ☛ Both the distribution-to-member and the distribution-to-committee readings are derivable for (17):

(17) i=pesku-wok litposuwinu-wok
  I=one-AN.PL council.member-PROX.PL
  '-kotuw-ewestuwawam-a-Ø not kehkimsu-lti-c-ik
  3-going.to-speak.TA-3OBJ-PL-3CJ-PROX.SG that.AN learn.AI-PROX.PL
  'Each committee/each member of the committee spoke to the students.'
  (JCR: EM-2024.11.11)

- Illustration with $\texttt{council\_members} = *\{a, b, c, d\}$

(18) a. $\mathbf{G}_{\{a\oplus b, c\oplus d\}}(\texttt{council\_members}) = \{\uparrow(a \oplus b), \uparrow(c \oplus d)\}$.
  b. $\mathbf{G}_{\{a,b,c,d\}}(\texttt{council\_members}) = \{\uparrow a, \uparrow b, \uparrow c, \uparrow d\}$.

- **Preventing the collective reading for *i-pesq*:**

(19) $\mathbf{Q}_\forall + \mathbf{G}_{\{\bigoplus ⟦\text{NP-PL}⟧\}=\{a\oplus b\oplus c\oplus d\}}$ + NP-PL ⟶ collective reading!

- **Solution:** Quantifier domain can not be a singleton set (Haslinger et al. 2023).
- The argument of $\mathbf{Q}_\forall$ given $\text{Cov}_{\max}$ **is** a singleton set, $\{\uparrow \bigoplus ⟦\text{NP-PL}⟧\}$, i.e., $\{\uparrow(a \oplus b \oplus c \oplus d)\}$.

The puzzle of *psi-te* persists

- Collective reading for *psi-te* + NP.SG: the ban on singleton domains must be relaxed.
- Then, the cover $\{\bigoplus ⟦\text{NP.SG}⟧\}$ is used.
- However, this relaxation of the ban just for *psi-te* is ad hoc.
- Additionally, if such covers and **G** are generally available, NP.SG is predicted to be compatible with collective readings without UQs, contrary to fact.

(20) *pesq ehpit maqehe-Ø
  one woman.PROX.SG gather.AI-PROX.SG
  Intended: 'Some women gather.' (JCR: EM-2024.01.20)

- The puzzle of *psi-te* + NP.SG is thus left for future research.

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