Possession and categorization in a degreeless language*

Emily A. Hanink and Andrew Koontz-Garboden
The University of Manchester
{emily.hanink,andrewkg}@manchester.ac.uk

NELS 51 ● UQAM ● 7 November 2020
Special session on indigenous languages of North America

1. Introduction

The grammar tied to property concepts – adjectives in some languages but nouns or verbs in others (Dixon 1982, Thompson 1989) – has been an area of longstanding study in the syntax (Bresnan 1973) and semantics (e.g., Kamp 1975, Creswell 1976) of familiar languages.

Recent cross-linguistic investigations of less-studied languages have however provided fertile ground for understanding both morphosyntactic and semantic variation in this domain.

Two recent, independent findings in this area point to variation in:

1 whether the meanings of property concepts are built on a mass-type core, with some possessive semantics required to turn them into predicates of individuals (Menon & Pancheva 2014, Francez & Koontz-Garboden 2017), as shown for Ulwa (Misumalpan, Nicaragua):

(1) Ordinary possession
Alberto pan -ka
Alberto stick-3.POSS
‘Alberto’s stick.’

(2) Property concept predication (Green 1999)
Alas yūh-ka atrang.
s/he tallness-3.POSS will.be
‘S/he will be tall.’ (lit: ... ‘have tallness’)

2 whether their meanings are built on degrees (i.a. Beck et al. 2009, Bochnak 2015)

(3) Degreeful (Creswell 1976, a.o.)
[[tall]]: \( \lambda d \lambda x. [\text{tall}(x) \geq d] \)

(4) Degreeless (Kamp 1975, Klein 1980), a.o.
[[tall]]\(^c\): \( \lambda x. [x \text{ counts as tall in c}] \)

Today’s talk

The interaction of these points in Washo

1 Property concepts in Washo are morphologically complex, formed from acategorial roots by a verbalizing v head that encodes a possessive semantics (Menon & Pancheva 2014).

2 The analysis of possessive predication put forward by Francez & Koontz-Garboden 2017 extends to Washo in a way consistent with Bochnak’s (2015) observation that it is degreeless.

*We thank first and foremost Adele James and Ramona Dick†, for their work with Emily Hanink over the years on the Washo language. We also thank Karlos Arregi, Delia Bentley, Ryan Bochnak, Margit Bowler, Vera Hohaus, Jens Hopperdietzel, and the anonymous NELS reviewers for their comments. This work is supported by the Jacobs Research Funds, the Phillips Fund for Native American Research, and European Research Council Consolidator Grant ERC-2017-COG 769192.
Broader view

- There is a previously unobserved interaction between degreefulness, possession, and mass semantics in the grammar of property concepts cross-linguistically.
- Washo provides morphologically overt evidence for the previous claim (Menon & Pancheva 2014) that verbal categorization introduces a possessive semantics to property concepts.

Outline

§1: Introduction
§2: Background on Washo
§3: Core data
§4: Morphosyntactic proposal
§5: Semantic proposal
§6: Possessed property concepts in a degreeless language
§7: Conclusion

2. Background on Washo

- Severely endangered language spoken around Lake Tahoe in the United States
- ≤ 10 native speakers
- Isolate; has been linked to Hokan (see Campbell 1997, Mithun 1999)
- SOV word order with pro-drop and agglutinative verb morphology
- Uncited data in this talk: fieldwork in CA/NV communities between 2015-2020
3. Core data

The verbal suffix -i? in Washo

Termed the ‘attributive-agentive’ suffix by Jacobsen (1964).

“derives verbs expressing the possessor of the underlying noun.”

As Jacobsen notes, this suffix is used productively to express general possession of an entity:\footnote{Glosses: ATTR: attributive; DEP: dependent mood; DS: different subject; IND: independent mood; NEG: negation; POSS: possessive; Q: interrogative suffix. We use the standardized orthography for Washo adopted in Jacobsen 1964, which follows the IPA with the following exceptions in our examples: L [l], [j], and y [j]. Uncited data come from Hanink’s fieldwork.}

(5) di-gúšu? -i? -i
1-pet -ATTR -IND
‘I have a pet/pets.’

(6) ?um-wí:git’áyab -i? -he:š-i
2-eyeglasses -ATTR -Q-IND
‘Do you have/wear glasses?’

Beyond ordinary possession however, the same suffix is also found in property concept predication:\footnote{Certain property concepts do not require the attributive suffix, e.g., dí-yák’aš-i ‘I am warm’. Others (see (8)) additionally require the prefix Pil- as well as reduplication of the stem (Yu 2012). We take the former to be verbal in nature; the latter pose an additional layer of complexity that we do not address in this talk.}

(7) daláʔak ?-i:yel -i? -i
mountain 3-big -ATTR -IND
‘The mountain is big.’

(8) t’é:liwhu ?il-káykay -i? -i
man 3.ATTR-tall -ATTR -IND
‘The man is tall.’

All of the above examples are verbal

• Mood marking is present: -i ‘independent’ mood (see Bochnak 2016, Hanink & Bochnak 2018).
• Verbal agreement is present (prefixal, for person only).
• Washo lacks an adjectival category (see Appendix 1 for more on deverbal PCs).

Distinct from possessive morphology in the nominal domain

Third person nominal possession in Washo is expressed by prefixal agreement on the possessum:

(9) Adele gúšu?
Adele 3POSS.pet
‘Adele’s pet’

(10) pro da-gúšu?
pro 3.POSS-pet
‘her pet’

⇒ The attributive suffix is a verbal suffix, not linked to nominal possession, cf. Ulwa (repeated):

(11) Alberto pan -ka
Alerto stick-3.POSS
‘Alberto’s stick.’

(12) Alas yúh-ka atrang.
s/he tallness-3.POSS will.be
‘S/he will be tall.’ (lit: ... ‘have tallness’)

(This is what deters Bochnak 2013 from analyzing Washo PCs as involving possession.)
4. Morphosyntactic proposal

The attributive suffix -i? is a categorizing v head

Menon & Pancheva (2014): some Malayalam (Dravidian) PCs are categorized by a null ‘v_poss’ head.

(13) aval nalla-val aanɔ
    she having goodness-F.SG EQ.COP
    ‘She is good.’ ([‘She is one having goodness.’])
    Menon & Pancheva 2014: 292

Our claim: -i? is the overt spell-out of a categorizing v head of precisely this kind.

(14) Ordinary possession
    a. di-gůšu?-i?-i
       1-PET-ATTR-IND
       ‘I have a pet/pets.’
    b. √PET vP
        v
        -i?

(15) Property concept predication
    a. dalá?ak ʔ-i:yel-i?-i
       mountain 3-BIG-ATTR-IND
       ‘The mountain is big.’
    b. √BIG vP
       v
       -i?

• PCs are born as acategorial roots (Menon & Pancheva 2014, Francez & Koontz-Garboden 2017).
• We (tentatively) treat ‘nominal’ roots such as pet also as acategorial roots.

Evidence for -i? as a categorizer:

• -i? is always the closest suffix to the root (below e.g., the inchoative/causative suffixes).
• Property concept roots on their own are ill-formed as verbs (they only ever appear overtly derived):

(16) *dalá?ak ʔ-i:yel-i
    mountain 3-BIG-IND
    Intended: ‘The mountain is big.’

• ‘Nominal’ roots are also ill-formed as verbs (though they may be zero derived as nouns):

(17) *∅-gůšu?-i
    3-PET-IND
    Intended: ‘It’s a pet.’
(18) gůšu? k’-ɛʔ-i
    pet 3-be-IND
    ‘It’s a pet.’

• A possible alternative: noun incorporation where -i? is not a categorizer but a lexical verb have.
  – Evidence from transitivity and suppletion argue against an incorporation analysis;
    Bochnak & Rhomieux 2013 argue that incorporation in Washo is limited to body parts.
  – Washo has a lexical verb for ‘have’, sáʔ:
Broader view:

Washo lends cross-linguistic evidence to the claim that \textit{v} may introduce a possessive semantics (à la Menon & Pancheva 2014, and contra Francez & Koontz-Garboden 2017).

⇒ Potentially constitutes a new ‘flavor’ of \textit{v} (Folli & Harley 2005).

5. Interpretation

\textit{-i?} denotes a function mapping properties to relations between individuals and properties

We assign \textit{-i?} the meaning in (21), whose first argument is a root denoting a property of individuals:

\begin{equation}
\llbracket \text{-i?} \rrbracket : \lambda P_{(e,t)} \lambda x \exists y [P(y) \& \text{have}(x,y)] \quad \text{(based on Francez & Koontz-Garboden 2017)}
\end{equation}

Ordinary Possession

The root composes with \textit{-i?} to return a characteristic function of individuals having pets:

\begin{equation}
\begin{array}{ll}
\text{a.} & \llbracket \sqrt{\text{PET}} \rrbracket : \lambda x [\text{pet}(x)] \\
\text{b.} & \llbracket \text{-i?} \rrbracket (\llbracket \sqrt{\text{PET}} \rrbracket) : \lambda x \exists y [\text{pet}(y) \& \text{have}(x,y)]
\end{array}
\end{equation}

When predicated of an individual, (22) yields a true proposition iff that individual has a pet:

\begin{equation}
\begin{array}{ll}
\text{a.} & \text{di-gúšu?-i?-i} \\
& 1\text{-PET-ATTR-IND} \\
& ‘I have a pet/pets.’ \quad \text{=(14a)} \\
\text{b.} & \exists y [\text{pet}(y) \& \text{have}(\text{speaker}, y)]
\end{array}
\end{equation}

Property concept predication

We follow Francez & Koontz-Garboden in the proposal that \textit{PC roots have a mass-type meaning}, partially ordered by a mereological relation (Link 1983).

Following Parsons (1990), Baglini (2015), Wellwood (2015, 2019) and others, we depart from Francez & Koontz-Garboden 2017 on the proposal that these entities are Davidsonian states (which are standardly assumed to be mereologically ordered; Champollion 2017: 27).\footnote{Francez & Koontz-Garboden’s (2017) proposal treats the size relation over mass entities as \textit{portions}.}

Property concept roots denote sets of states (24) that are ordered not only by the mereological relation, but also by a size-relation like that assumed by Francez & Koontz-Garboden to capture gradability.

\begin{equation}
\llbracket \sqrt{\text{BIG}} \rrbracket : \lambda s [\text{big}(s)]
\end{equation}
• States are a sort of the domain of eventualities, which are themselves in the domain of individuals.

• Like any other \(\langle e, t \rangle\) predicate, (24) can compose with \(-i\) to create a predicate of individuals possessing some entity (here, a state) in the denotation of the root (25):

\[
(25) \quad \langle \langle e, t \rangle \rangle (\langle \sqrt{BIG} \rangle) : \lambda x.e \exists y[\text{big}(y) \& \text{have}(x,y)]
\]

When predicated of an individual, (25) is true iff that individual has a state of bigness:

\[
(26) \begin{align*}
(a) & \quad \text{dalá?ak} \quad ?-i:yel-i?-i \\
& \quad \text{mountain 3-BIG-ATTR-IND} \\
& \quad \text{‘The mountain is big.’} \quad = (15a) \\
(b) & \quad \exists y[\text{big}(y) \& \text{have(mountain,y)}]
\end{align*}
\]

\(-i\) plays the same role in ordinary possession and in possessive predication.

6. Possessed property concepts in a degreeless language

Washo has been argued to be a degreeless language (Bochnak 2013, 2015)

• Washo lacks any degree morphology, and fails semantic tests for degreefulness.

• This behavior suggests degreelessness in the sense of Beck et al. 2009.

• Bochnak adopts an approach in which PCs are contextually-sensitive sets of individuals (Klein 1980).

\[
(27) \quad \langle \text{tall}_{\text{Washo}} \rangle^c : \lambda x.e[x \text{ counts as tall in } c] \quad \text{Bochnak 2015: 4}
\]

Washo’s degreelessness raises questions for previous analyses of possessed property concepts, as they are designed to account for Ulwa and Malayalam, which are not argued to be degreeless.

• Our Davidsonian analysis does not make recourse to degrees (in the absence of degree morphology).

• Our proposal for possessive predication, based on Francez & Koontz-Garboden 2017 but couched in this Davidsonian analysis, handles the Washo facts.

6.1. Positive Contexts

Analyses of the positive form need to account for the fact that they are vague.

\[
(28) \quad \text{Maria is 5’8”/173 cm tall.}
\begin{align*}
(a) & \quad \text{Context: a group of women of average height} \\
& \quad \text{Mary is tall.} \\
(b) & \quad \text{Context: a group of women in the WNBA} \\
& \quad \#\text{Mary is tall.}
\end{align*}
\]
How is vagueness encoded in possessive predication?

(29) daláʔak ʔ-i:yel -iʔ -i mountain 3-BIG -ATTR -IND ‘The mountain is big.’ = (7)

**Degree-based account:**

Property concepts are not themselves vague.

Vagueness is introduced by composition with (silent) POS (von Stechow 1984), which establishes a relative ordering above a contextual standard.

(31) a. [[tall]]: \( \lambda d \lambda x \cdot \text{height}(x) \geq d \)
b. [[POS]]: \( \lambda g_{(d,(e,t))} \lambda x \cdot \exists d > s_G \land G(d)(x) \)
c. [[POS tall]]: \( \lambda x \cdot \exists d > s_G \land \text{height}(x) \geq d \)

In Menon & Puncheva’s (2014) account, categorizing \( v \) invokes a degree ordering (cp. (31a)):

(32) [[\( v_{pos} \)]] \( \lambda \Pi \lambda d \lambda x \cdot \exists y \) \( y \) is an instance of \( \Pi \) and \( x \) has \( y \) and \( \mu(y) \geq d \)

In positive contexts, vagueness is likewise achieved by composition with POS:

(33) a. aval nalla-val aanə she having-goodness-F.SG EQ.COP ‘She is good.’ ([‘She is one having goodness.’]) = (13)
b. [[nalla]]: \( \lambda x \cdot \exists d \exists y \) \( y \) is an instance of goodness and \( x \) has \( y \) and \( \mu(y) \geq d \) and \( d \geq d_s \)

**Degree-less accounts:**

Vagueness is built into the meaning of the predicate itself, does not require composition with POS.

(34) [[tall]]\(^c\): \( \lambda x \cdot \text{tall}(x) \) in \( c \)

**Our account:**

We capture vagueness through the presence of the existential quantifier in the meaning of the verbalizer (Francez & Koontz-Garboden 2017):

(35) [[ -iʔ ]]\( ^c \): \( \lambda P_{(e,t)} \lambda x \exists y [P(y) \land \text{have}(x,y)] \) = (21)

- \( y \) must be contextually restricted to those states that are big enough in the size-ordering to “stand out” (Kennedy 2007) in the context.
- Makes, e.g., (36) true iff there is a state possessed by the mountain that is big enough in the size-order of big states to count as such in the relevant context:
Possession and categorization in a degreeless language

Hanink & Koontz-Garboden, NELS 51

(36)  a. daláʔak ?-i:yel -iʔ -i
    mountain 3-BIG -ATTR -IND
    ‘The mountain is big.’ = (29)

  b. [[(36a)]]: \( \exists y[\text{big}(y) \& \text{have(mountain,y)}] \)

6.2. Comparatives

Our analysis of the positive form extends directly to the comparative.

Comparatives in Washo are implicit (in the sense of Kennedy 2007), consisting of conjoined positive constructions:

(37)  t’é:liwhu de-ʔil-ká:ykay-iʔ k’-éʔ-i
    man 3.POSS-ATTR-TALL-ATTR 3-be-IND
    daʔmóʔmo? de-ʔil-ká:ykay-iʔ-é:s k’-áʔ-a-š
    woman 3.POSS-ATTR-TALL-ATTR-NEG 3-be-DEP-DS

    ‘The man is taller than the woman.’
    = ‘The man is tall, the woman is not tall.’

Relevant is that these comparatives fail to give rise to crisp judgments (see Kennedy 2007), which involve comparison of two objects that are very close in measurement.

(38)  Context: Comparing two ladders, where one is only slightly taller than the other.
    #wí:diʔ ?itmáŋa de-ʔil-ká:ykay-iʔ k’-éʔ-i
    this ladder 3.POSS-ATTR-TALL-ATTR 3-be-IND
    wí:diʔ de-ʔil-ká:ykay-iʔ-é:s k-áʔ-a-š
    this 3.POSS-ATTR-TALL-ATTR-NEG 3-be-DEP-DS

    Intended: ‘This ladder is taller than that one.’
    = ‘This ladder is tall, that one is not tall.’

Degreeless accounts predict the infelicity of crisp judgments (though see Deal & Hohaus 2019, Bowler 2020).

Degree-based accounts:

The vagueness of gradable predicates is captured by composition with silent POS.
Vagueness goes away with presence of COMP: no vagueness built into the meaning of the PC itself.

(39)  [[MORE]]: \( \lambda G_{(d,(e,t))} \lambda x . \exists d [d > d_{\text{std}} \& G(d)(x)] \)

  • Requires only an asymmetric ordering (of any size difference on a scale).

  • Predicts that crisp judgements should be felicitous.

---

4Comparatives involve an adjunction structure with an embedded clause marked with the dependent mood -aʔ, which Hanink & Bochnak 2018 assign a semantics that is essentially equivalent to conjunction.
Degree-less accounts:

Gradable predicates are always vague, and so vagueness should persist in comparatives.

- Vague predicates are subject to a similarity constraint (Klein 1980, Graff 2000, Kennedy 2011):

\[(40) \text{Similarity Constraint} \]

When \(x\) and \(y\) differ only to a very small degree in the property that a vague predicate \(G\) is used to express, speakers are unable or unwilling to judge the proposition that \(x\) is \(G\) true and \(y\) is \(G\) false. apud Bochnak (2015: 12)

- Predicts that crisp judgements should not be felicitous.

Our account:

Comparatives are built on a conjunction of norm-related positive constructions.

- Positive constructions are norm-related and vague, without recourse to POS.

- Correctly predicts the infelicity of crisp judgements, on a par with the Kleinian account.

\[(41) \text{a. } \text{t\textsuperscript{e}:liwhu de-ʔil-k\textsuperscript{á}y-k\textsuperscript{á}y-i? } \text{k\textsuperscript{á}ʔ?-i } \text{daʔm\textsuperscript{á}ʔ-mo? } \\
\text{3.POSS-ATTR-TALL-ATTR 3-be-IND woman} \\
\text{de-ʔil-k\textsuperscript{á}y-k\textsuperscript{á}y-i?-ʔ-e:s } \text{k\textsuperscript{á}ʔ?-a-ʔ} \\
\text{3.POSS-ATTR-TALL-ATTR-NEG 3-be-DEP-DS} \\
\text{‘The man is taller than the woman.’} \\
\text{=‘The man is tall, the woman is not tall.’} \text{(37)}\]

\[b. \text{[(41a)]: } \exists y[\text{tall}(y) \& \text{have}(man,y)] \& \exists y[\text{tall}(y) \& \neg \text{have}(woman,y)]\]

6.3. On the overall lack of degree constructions

Our analysis is essentially a Davidsonian version of that proposed for (presumed degreeful) Ulwa.

For example, Ulwa has an explicit comparative with the morpheme more:

\[(42) \text{Ulwa degree comparative} \]

\begin{align*}
\text{Abanel ya } & \text{kanas y\textsuperscript{ú}h-ka} & \text{Clementina karak} \\
\text{Abanel the more } & \text{tall-3.POSS Clementina with} \\
\text{‘Abanel is taller than Clementina.’} & \text{Francez & Koontz-Garboden 2017: 46}
\end{align*}

So what is the difference between Ulwa and Washo?

- We follow Bochnak et al. (2020) (building on Wellwood 2019) in the idea that degrees are introduced by degree morphemes themselves (e.g., measure phrases, comparative morphemes, intensifiers, etc.) (see also Bogal-Allbritten 2013 for conceptually related syntactic ideas).
• Such morphemes are not part of the functional inventory of Washo.

• Without this functional inventory, no degree constructions arise.

The difference between Ulwa and Washo is the functional inventory available in the language.

7. Conclusion and outlook

Washo property concepts are morphologically complex, using possession to turn a mass-type core into a property of individuals.

Property concepts have a mass type core

In recent work, Menon & Pancheva (2014) and Hanink et al. (2019) argue that a mass-type meaning underlies the lexical semantics of property concept lexemes across all languages:

• This meaning can be attributed to individuals via a possessive relation introduced overtly in the morphology or syntax (e.g., Ulwa, Washo), or covertly (e.g., Malayalam).

• Washo provides overt morphological evidence that this possession can be introduced via categorization (cp. the null categorizer in Malayalam).

• In other cases, possession is encoded into the meaning of the property concept lexeme itself, as is the case for certain property concepts in Basáa (Hanink et al. 2019) and English adjectives (so that e.g., beautiful is the set of individuals standing in the possessive relation to some beauty state).

Interaction with degreelessness

Against this backdrop is the degreelessness literature, which argues that languages can be split into those that have PCs with a degree argument (e.g., English) and those that do not (e.g., Washo).

• In showing that (most) Washo property concept verbs are actually morphologically complex, built on possession with a mass noun semantics for a property concept root (much like Ulwa), we have shown that the possessive analysis of property concept lexemes cuts across the degreefulness issue.

• We have also shown, adopting the analysis of Bochnak et al. 2020, how Washo can be analyzed in these terms, while at the same time accounting for its degreeless behavior.

Open questions

It remains to be seen how this typology interacts with other points of syntactic and semantic variation in the grammar of gradability and comparison, e.g.,

• The syntactic categories of property concept lexemes

• The structural interactions between (possessed) PCs and degree morphology

• Variation in the derivation of change of state predicates from property concept lexemes (Koontz-Garboden 2007, Matthewson et al. 2015)
References


Bochnak, M. Ryan, Margit Bowler, Emily A. Hanink, & Andrew Koontz-Garboden. 2020. Degreefulness is the result of functional inventory, not a parameter. Handout from Sinn und Bedeutung 25, QMUL.


Institute of Technology.
Appendix 1: Attributive and predicative property concepts in Washo

<table>
<thead>
<tr>
<th>The prefix t’-/d’e- in Washo forms what superficially look like -er nominals:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(43) dē:guš t’-i:k’e? potato 3.UN-grind</td>
</tr>
<tr>
<td>‘potato grinder’ (man’s name)</td>
</tr>
</tbody>
</table>

The same morphology is also found with deverbal property concepts in Washo

Washo lacks an adjectival category.

Attributive and nominalized property concepts are deverbal (Jacobsen 1964, Bochnak et al. 2011) and involve a nominal possessive structure (Hanink 2020):

<table>
<thead>
<tr>
<th>(45) a. Attribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘I saw the tall tree.’ Washo Archive</td>
</tr>
<tr>
<td>b. Nominal predication</td>
</tr>
<tr>
<td>‘I’m freckled.’ [=‘I’m one with freckles/a freckled one.’]</td>
</tr>
<tr>
<td>c. Argument position</td>
</tr>
<tr>
<td>‘I saw the tall [one].’</td>
</tr>
</tbody>
</table>

The t’-/d’e- prefix is not a nominalizer, but a reflex of possessor agreement.

Washo makes use of expressed vs. unexpressed possessor marking in third-person contexts.

- If the possessor is overt, possessor agreement marks person.
- If the possessor is covert, the (phonologically conditioned) prefix t’-/d’e- surfaces.

<table>
<thead>
<tr>
<th>(46) a. Adele ʔ-áŋal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adele 3-house</td>
</tr>
<tr>
<td>‘Adele’s house’</td>
</tr>
<tr>
<td>b. t’-áŋal</td>
</tr>
<tr>
<td>3.UN-house</td>
</tr>
<tr>
<td>‘his/her house’</td>
</tr>
</tbody>
</table>

Another place where we see unexpected possession of this kind is in possessive predication.
Koontz-Garboden & Francez 2010 on Ulwa (cf. (2)):

(47) a. minisih-ka
    \textit{DIRTY-POSS}
    ‘dirty’ [=‘one having the property of being dirty’].

b. \([\text{[minisihka]}]: \lambda x_e [\pi(x, \text{DIRTY})] \]  \textit{Koontz-Garboden & Francez 2010: 223-224}

- The meaning of the possession is a relation between the property and property-holder.
- Resulting individual meaning is the holder of the property (not the property itself).\(^5\)

What exactly is this possessive relation?

(48) \textbf{Meaning postulate} (Koontz-Garboden & Francez 2010: 222):

For any entity and any property, the entity “has” the property if and only if the entity is in the extension of the property’s corresponding predicate.

Building on this, Hanink (2020) argues for the following meaning for \textit{POSS}:

(49) \([\text{[POSS]}]: \lambda P(e,t) \lambda x_e [\pi(x, \cap P)] \]

- Where \(\cap\) is Chierchia’s (1985) nominalization operator, mapping a property to a kind-level individual.
- Relates a property and individual by a possessive \(\pi\) relation.

\textbf{Subject nominalizations}

(50) a. t’ánu t’-fšiw-ha
    person 3.UN-get.well-CAUS
    ‘healer’ [=‘healer of people’]

b. \begin{align*}
    \text{DP} & : \lambda x_e [\pi(x, \cap \lambda y_e \text{GEN}_e [\text{heal} (\text{people})(e) \& \text{agent}(y)(e)])] \\
    \text{PossP} & : \lambda x_e [\pi(x, \cap \lambda y_e \text{GEN}_e [\text{heal} (\text{people})(e) \& \text{agent}(y)(e)])] \\
    \text{Poss} & : \lambda P(e,t) \lambda x_e [\pi(x, \cap P)] \\
    \text{AspP} & : \lambda y_e \text{GEN}_e [\text{heal} (\text{people})(e) \& \text{agent}(y)(e))] \\
    \text{t’ánu tšiwha} & : \end{align*}

- Poss selects for AspP and specifies the nominalization of this property (or assume \(nP\)).
- PossP is the set of individuals who are members of the set of agents in generic healing events.
- (50a) \(\approx\) An individual who has the property of being an agent in people-healing events.

\(^5\text{See Koontz-Garboden & Francez 2010: 223 for variations in the possible meaning of POD.}\)
Property concepts in argument position

(51) a. [ de-ʔil-káykay-i? ] l-i:gi-yi
    3.POSS-ATTR-TALL-ATTR 1/3-see-IND
    ‘I saw the tall [one].’


b. PossP

\[ \tau z_e [\pi(z, \cap \lambda x_e \exists y[TALL(y) \& have(x,y)]] \]

\[ \lambda z_e [\pi(z, \cap \lambda x_e \exists y[TALL(y) \& have(x,y)]] \]

\[ \lambda P_{(e,t)} \tau x_e [(P(x)] \]

\[ \lambda P_{(e,t)} \lambda z_e [\pi(z, \cap P)] \]

?ilkáykayi?

- Null D or \( \tau \) type-shift applies to PossP

⇒ Result: the unique individual who is in the extension of the set of individuals who have tallness

Property concepts in attribution/predication

PossP doesn’t need to be nominalized, it can remain a property of individuals.

(52) a. dewdíʔiš [ de-ʔil-káykay-i? ] l-i:gi-yi
    tree 3.POSS-ATTR-TALL-ATTR 1/3-see-IND
    ‘I saw the tall tree.’

b. PossP

\[ \lambda z_e [\pi(z, \cap \lambda x_e \exists y[TALL(y) \& have(x,y)]] \]

AspP

\[ \lambda x_e \exists y[TALL(y) \& have(x,y)] \]

Poss

\[ \lambda P_{(e,t)} \lambda z_e [\pi(z, \cap P)] \]

?ilkáykayi?

- Undergoes Predicate Modification with \([\text{[tree]}]]\):

(53) \([\text{[dewdíʔiš de ʔilkáykayi?]}}]: \lambda z_e [\text{tree}(z) \& \pi(z, \cap \lambda x_e \exists y[TALL(y) \& have(x,y)]]

- Followed by \( \tau \)-shift/composition with D:

(54) \([\text{[dewdíʔiš de ʔilkáykayi?]}}]: \tau z_e [\text{tree}(z) \& \pi(z, \cap \lambda x_e \exists y[TALL(y) \& have(x,y)]]

- In predication contexts (e.g., (45b)), nothing further is required.