Possession and categorization in a degreeless language*

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1.   Introduction

The grammar tied to *property concepts* – expressions that are adjectives in familiar languages but nouns or verbs in others (Dixon 1982, Thompson 1989) – has been an area of longstanding study in both the syntax (Bresnan 1973) and semantics (Kamp 1975, Creswell 1976) of familiar languages. However, recent cross-linguistic investigations of less-studied languages have provided fertile ground for understanding additional areas of both morphosyntactic and semantic variation in this domain.

More specifically, one point of variation concerns 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 and Pancheva 2014, Francez and Koontz-Garboden 2017). For example, Koontz-Garboden and Francez (2010) show that in Ulwa (Misumalpan, Nicaragua), the same suffix *-ka* that marks the possessum in nominal possession (1) is used to predicate property concepts of their subject (2). Francez and Koontz-Garboden argue that PC-roots in Ulwa are mass-denoting, and may become predicates only with the addition of this possessive morphology, as indicated in the translation of (2) (apud Green 1999).

(1) *Ordinary possession*

Alberto pan **-ka**
Alberto stick **-3.POSS**
'Alberto's stick.'

(2) *Property concept predication*

Alas yûh **-ka**   atrang.
s/he *TALL* **-3.POSS** will.be
'S/he will be tall.'
='She will have tallness.'

A second point of variation that has been reported independently is whether the meanings of property concepts in a given language are built on degrees (Beck et al. 2009,

Bochnak 2015, a.o.). For example, Beck et al.'s (2009) proposed *Degree Semantics Parameter* contends (in a nutshell) that, while the meanings of property concepts in some languages are degreeful (e.g., English), in other languages they are degreeless (e.g., Motu). Traditionally, degreeful analyses have it that property concepts denote degree relations (3), while degreeless analyses treat them as context-sensitive sets of individuals (4):

(3) *Degreeful* (Creswell 1976)
     $[[tall]]$: $\lambda d_d \lambda x_e [\mathbf{tall}(x) \geq d]$

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

Taking these theoretical developments into consideration, we show first that property concepts in Washo (Hokan/isolate, USA) are morphologically complex, formed from acategorial roots by a verbalizing v head that encodes possession (Menon and Pancheva 2014). Second, we show that the analysis of possessive predication in Francez and Koontz-Garboden 2017 extends to Washo in a way consistent with Bochnak's (2015) observation that Washo is a degreeless language, even though their proposal was not originally designed for such languages. Stepping back to the larger picture, we demonstrate with the present study that there is an important but previously unobserved interaction between degreefulness, possession, and mass semantics in the grammar of property concepts across languages.

The outline of this paper is as follows. In Section 2, we lay out the core data that we aim to account for. Sections 3 and 4 outline our morphosyntactic and semantic proposals, respectively, in which we argue that Washo property concepts roots are mass-denoting and must be possessed in order to act as predicates. Section 5 offers discussion of the interaction between degreelessness and possessive predication, and Section 6 concludes.

2.   Core data: the attributive suffix in Washo

The core data at issue in this paper involve the verbal suffix *-iʔ*, termed the 'attributive-agentive' suffix by Jacobsen (1964:555). Jacobsen writes that this suffix "derives verbs expressing the possessor of the underlying noun." As he notes, this suffix is used productively to form a verb expressing general possession of an entity, as shown in (5):[1]

(5) a. di-gúšuʔ **-iʔ** -i
         1-pet **-ATTR** -IND
         'I have a pet/pets.'

     b. ʔum-wí:git'áyab **-iʔ** -hé:š-i
         2-eyeglasses **-ATTR** -Q-IND
         'Do you have/wear eyeglasses?'

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[1]Glosses: ATTR: attributive; DEP: dependent mood; DS: different subject; IND: independent mood; NEG: negation; NMLZ: deverbal nominalizer; Q: question marker. We use the standardized orthography for Washo adopted in Jacobsen 1964, which follows the IPA with the following exceptions in our examples: L [ɬ], š [ʃ], and y [j]; stress is represented with an acute accent. Uncited examples come from Hanink's fieldwork with two native speakers in CA and NV. Examples labeled with 'Washo Archive' are available online at https://washo.uchicago.edu.

Beyond ordinary possession however, the same suffix is also found in property concept predication. For instance, it occurs in the verbal property concept predicates in (6a-b):[2]

(6)　　a.　dalá?ak　?-í:yel **-i?** -i
　　　　　mountain 3-big **-ATTR** -IND
　　　　　'The mountain is big.'

　　　　b.　t'é:liwhu ∅-?il-káykay **-i?** -i
　　　　　man　　　 3-ATTR-tall **-ATTR** -IND
　　　　　'The man is tall.'　　　　　　　　　　　　　　　　　　(Washo Archive)

Note that Washo lacks an adjectival category, and property concepts are always verbal. Evidence that the predicates in (5) and (6) are verbal comes for example from the presence of the mood marker *-i* ('independent' mood; see Bochnak 2016 and Hanink and Bochnak 2018), as well as verbal agreement (prefixal and for person only in Washo). The verbal status of property concepts in Washo thus differentiates it from Ulwa, in which *nominal* possessive morphology is used in possessive predication (see (2)). The Washo attributive suffix on the other hand is a verbal suffix that is not linked to nominal possession, which is instead marked by prefixal agreement on the possessum (and whose form is phonologically conditioned: pre-C vs. pre-V, respectively), as shown in (7a) and (8b) for the third person:

(7)　　*Nominal possession*

　　　　a.　Adele **∅-**gúšu?
　　　　　Adele **3-**pet
　　　　　'Adele's pet'

　　　　b.　Adele **?-**áŋal
　　　　　Adele **3-**house
　　　　　'Adele's house'

3.　　Morphosyntactic proposal

We propose that the attributive suffix *-i?* is a v head that categorizes a root to form a verb. Our proposal builds directly on Menon and Pancheva (2014), who argue that some Malayalam (Dravidian) PCs are categorized by a null 'v$_{poss}$' head that introduces a possessive semantics

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[2]Certain property concepts do not require the attributive suffix, for example, 'be warm' in (i):

(i)　　di-yák'aš-i
　　　　1-be.warm-IND
　　　　'I am warm.'

Others (e.g., (6b)) require, in addition to the attributive suffix, the prefix *?il-* (also termed 'attributive' in Jacobsen 1964) as well as reduplication of the stem (Yu 2012). We take property concepts of the former type to be verbal in nature; the latter pose an additional layer of complexity that we do not address in this paper.

(we return to this semantics in Section 4). For instance, in the example in (8a), Menon and Pancheva argue that the property concept *nalla* 'good' is derived from an underlying acategorial root by a silent categorizing v head before being relativized, as in (8b).
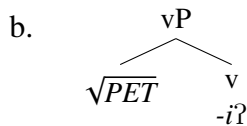
(8)   *Malayalam*

  a.   avaḷ [**nall-**a-vaḷ]   aanə
        she   **having.goodness-**REL-F.SG EQ.COP
        'She is good.
        ='one having goodness'   (Menon and Pancheva 2014:292)

  b.   [[$\sqrt{NALL}$ + $\varnothing_{v_{\text{poss}}}$]$_v$ + -a]$_{rel}$

Our claim is that the Washo -*iʔ* suffix is the overt spell-out of a categorizing *v* head of precisely this kind, and that it performs the same function in both ordinary possession and in property concept predication, as schematized in (9-10):[3]

(9)   *Ordinary possession*   (10)   *Property concept predication*

  a.   di-gúšuʔ-iʔ-i   a.   daláʔak   ʔ-í:yel-iʔ-i
        1-*PET*-ATTR-IND   mountain 3-*BIG*-ATTR-IND
        'I have a pet/pets.'   'The mountain is big.'

  b.   vP   b.   vP
            / \   / \
        $\sqrt{PET}$ v $\sqrt{BIG}$ v
                  -*iʔ*   -*iʔ*
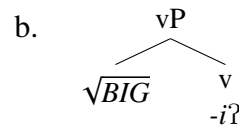
    There are several pieces of evidence that -*iʔ* is a categorizer. First, it is always the closest suffix to the root, occurring inside, for example, the inchoative suffix, as in (11):

(11)   dewdíʔiš ∅-ʔil-c'ác'im-**iʔ-étiʔ**-i
        tree   3-ATTR-be.green-**ATTR-INCH**-IND
        'The tree is getting green.'   (Washo Archive)

Additionally, property concept roots on their own are ill-formed as verbs, that is, they only ever appear overtly derived, as shown through the ungrammaticality of (12):[4]

(12)   *daláʔak   ʔ-í:yel-i
        mountain 3-*BIG*-IND
        Intended: 'The mountain is big.'

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[3]Note that we also (tentatively) treat 'nominal' roots such as *pet* as acategorial roots.

[4]While 'nominal' roots are also ill-formed as verbs (i), they may be zero derived as nouns (ii):

  (i)   *∅-gúšuʔ-i   (ii)   gúšuʔ k'-éʔ-i
          3-*PET*-IND   pet   3-be-IND
          Intended: 'It's a pet.'   'It's a pet.'

While the above behaviors are consistent with our root-categorization analysis, at this point we briefly rule out an alternative analysis of these facts. One salient alternative to our categorization analysis is that -*iʔ* is in fact a verb meaning *have*, and that the examples we have shown so far are instances of noun incorporation (Baker 1988, Rosen 1989).[5] There are however several pieces of evidence that argue against this approach. The first argument against the incorporation analysis comes from suppletion. Bochnak and Rhomieux (2013) show that incorporated objects in Washo have distinct forms to their non-incorporated counterparts, such that the form of 'foot' in incorporated contexts as in (13a) does not occur in any other environments.[6] However, these suppletive forms are not found cases with the attributive suffix, as in (14a), indicating that this is not an instance of noun incorporation:[7]

(13)   *Suppletive form in noun incorporation*

     a.   John ∅-**tuʔm-**áʔam-i
         John 3-**foot-**into.water-IND
         'John is putting his foot into the water.' (Bochnak and Rhomieux 2013:260)

     b.   *di-**tuʔm**
         1-foot
         Intended: 'my foot'

(14)   *Non-suppletive form with attributive suffix*

     a.   súkuʔ hélmeʔ da-**máyab**-iʔ
         dog   three   NMLZ-**foot**-ATTR
         'a dog that has three feet/legs'   (Washo Archive)

     b.   di-**máyab**
         1-foot
         'my foot'

Beyond suppletion, a second piece of evidence against the incorporation analysis is that Washo has an independent lexical verb for 'have', *sáʔ*, which may stand alone (15) in a way that the attributive suffix may not (16):

(15)   t'á:gɨm di-**sáʔ**-i   (16)   *t'á:gɨm di-ʔíʔ-i
      pinenut 1/3-**have**-IND   pinenut 1/3-ATTR-IND
      'I have pinenuts.' Washo Archive   Intended: 'I have pinenuts.'

In summary, we have proposed in this section that the attributive suffix -*iʔ* is a categorizer that turns acategorial roots into verbs. In the next section, we turn to the semantic

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[5]See also Johns 2007 for a light-verb approach to noun incorporation in Inuktitut, in which 'have' is a v head that likewise categorizes a root. Unlike Washo, Inuktitut displays incorporation behavior with a relatively large number of light verbs.

[6]Bochnak and Rhomieux (2013) also argue that true noun incorporation in Washo is limited to body parts.

[7]This form (damáyabiʔ 'one having feet') is a deverbal nominalization, see Hanink 2020.

contribution of this suffix and show that the Washo data lend cross-linguistic evidence to the claim that v may categorize and introduce possession, as proposed by Menon and Pancheva 2014 (pace Francez and Koontz-Garboden 2017).

4.   Interpretation

The core of our semantic analysis is that the verbalizer *-iʔ* denotes a function mapping properties to relations between individuals and properties.[8] More specifically, we assign *-iʔ* the meaning in (17), based on the proposal in Francez and Koontz-Garboden 2017. Crucial to the analysis is that the first argument of *-iʔ* is the root it categorizes, which denotes a set of individuals in both ordinary possession and in possessive predication.

(17) $[\![$ *-iʔ* $]\!]$: $\lambda P_{\langle e,t \rangle} \lambda x_e \exists y [P(y) \, \& \, \textbf{have}(x,y)]$

Cases of ordinary possession are rather straightforward on this analysis; the root composes with *-iʔ* to return a characteristic function of individuals having pets:

(18)   a. $[\![\sqrt{PET}]\!]$: $\lambda x_e [\textbf{pet}(x)]$

      b. $[\![$*-iʔ*$]\!]$ $([\![\sqrt{PET}]\!])$: $\lambda x_e \exists y [\textbf{pet}(y) \, \& \, \textbf{have}(x,y)]$

When predicated of an individual, (18) yields a true proposition iff that individual has a pet:

(19)   a.   di-gúšuʔ-iʔ-i
          1-*PET*-ATTR-IND
          'I have a pet/pets.'

      b. $\exists y [\textbf{pet}(y) \, \& \, \textbf{have}(\textbf{speaker},y)]$

Turning to property concept predication, we follow Francez and Koontz-Garboden (2017) on the proposal that property concept roots have a mass-type meaning, which are partially ordered by a mereological relation (Link 1983). However, following Parsons (1990), Baglini (2015), Wellwood (2015, 2019) and others, we depart from Francez and Koontz-Garboden (2017) in adopting the proposal that these entities are Davidsonian states (which are standardly assumed also to be mereologically ordered; Champollion 2017:27).

On our analysis, property concept roots then denote sets of states (20) that are ordered not only mereologically, but also by a size-relation like that assumed by Francez & Koontz-Garboden to capture gradability effect (see also the notion of 'intensity' in Wellwood 2019:Chapter 2).[9]

(20) $[\![\sqrt{BIG}]\!]$: $\lambda s_e [\textbf{big}(s)]$

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[8]See also Nevins and Myler (2014) on constructions such as *lily-livered* and *four-legged* in English, which are most commonly used to describe body parts. These authors argue that the suffix *-ed* likewise categorizes a root; semantically, it takes a relation (between body part and attribute) and returns a predicate.

[9]Francez and Koontz-Garboden's (2017) proposal treats the entities ordered by the size relation as *portions*.

Importantly here, as states are a sort of the domain of eventualities, which are themselves in the domain of individuals, a meaning such as (20) – like any other $\langle e, t \rangle$ predicate – can compose with *-iʔ* to create a predicate of individuals possessing some entity (here, a state) in the denotation of the root. This is shown in (21):

(21) $[[\text{-}iʔ]] ([[\sqrt{BIG}]]): \lambda x_e \exists y [\textbf{big}(y) \ \& \ \textbf{have}(x,y)]$

When predicated of an individual, (21) is true iff that individual has a state of bigness:

(22)   a.   daláʔak   ʔ-í:yel-iʔ-i
                  mountain 3-*BIG*-ATTR-IND
                  'The mountain is big.'

          b. $\exists y [\textbf{big}(y) \ \& \ \textbf{have}(\textbf{mountain},y)]$

In summary, we have proposed in this section a semantic analysis of attributive *-iʔ* that enables this suffix to play the same role in both ordinary possession and possessive predication. In both cases, it introduces a possessive meaning such that the resulting verb denotes the set of individuals possessing some entity.

5.   Possessed property concepts in a degreeless language

We now turn to the interaction between property concept possession and the status of degrees in Washo. Based on thorough evaluation of the behavior of gradable predicates, Bochnak (2013, 2015) argues that Washo a degreeless language. Not only does Washo fail semantic diagnostics for degreefulness (based largely on Beck et al. 2009), but it also lacks degree morphology altogether. Based on these behaviors, Bochnak adopts a non-degree based approach to property concepts in Washo, according to which gradable predicates denote context-sensitive sets of individuals à la Klein (1980), as in (23):

(23) $[[tall_{Washo}]]^c: \lambda x_e [x \text{ counts as tall in } c]$ (Bochnak 2015:4)

Crucially, 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 languages. We show below that the lack of evidence for degreeful predicates in Washo is however not a problem for our Davidson analysis, in which no recourse is made to degrees (in the absence of degree morphology). We show moreover that our proposal for possessive predication, based on Francez and Koontz-Garboden 2017 but couched in this Davidsonian analysis, is consistent with Bochnak's (2015) evidence that Washo is a degreeless language.

In the following subsections, we show how our analysis accounts for both positive contexts and conjoined comparatives in Washo, and we then offer some discussion of the lack of degree morphology in the language in comparison to other languages with possessed property concepts, such as Ulwa and Malayalam.

5.1 Positive contexts

First, analyses of the positive form must be able to account for the fact that they are *vague*. This means that their truth conditions are sensitive to the context. For instance, the utterance *Hanne is tall* in (24) may be judged as true or false in different contexts. That is, it is felicitous in the context in (24a), as Hanne's height is above average for women (in the United States). It is infelicitous in the context in (24b) on the other hand, as her height is not taller than average in this case (evaluated with respect to professional basketball players).

(24)   Hanne is 5'8"/173 cm tall.

     a.   *Context: a group of women of average height*
        Hanne is tall.

     b.   *Context: a group of women in the WNBA*
        #Hanne is tall.

Both degree-based and degreeless accounts capture vagueness, but do so in different ways. In degree-based accounts, property concepts are not inherently vague. Rather, vagueness is introduced by composition with (silent) POS (von Stechow 1984), which establishes a relative ordering above a contextual standard.

(25)   a. $[[tall]]$: $\lambda d_d \lambda x_e.\textbf{height}(x) \geq d$

     b. $[[\text{POS}]]$: $\lambda g_{\langle d, \langle e,t \rangle \rangle} \lambda x_e.\exists d[d > s_G \ \& \ G(d)(x)]$

     c. $[[\text{POS } tall]]$: $\lambda x_e.\exists d[d > s_G \ \& \ \textbf{height}(x) \geq d]$

In degreeless accounts on the other hand, vagueness is built into the meaning of the predicate itself, and does not require composition with POS. In this type of approach, as in Bochnak 2015, vagueness is built directly into the meaning of the property concept itself:

(26) $[[tall]]^c$: $\lambda x_e[\textbf{tall}(x) \text{ in } c]$

Relevant here is that any account of possessive predication must also capture the vagueness of the positive form. For instance, in Menon and Pancheva's (2014) account, categorizing v invokes a degree ordering (cp. 26a):

(27) $[[v_{poss}]]$ $\lambda \Pi \lambda d \lambda x.\exists y[y$ is an instance of Π and x has $y \ \& \ \mu(y) \geq d]$

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

(28) $[[\text{POS}]]$: $\lambda g_{\langle d, \langle e,t \rangle \rangle} \lambda x_e.\exists d[g(d)(x) \ \& \ d > d_s]$

The derivation of the positive form in Malayalam is then as follows:

(29) a. avaḷ [**nalla**-vaḷ]   aanə
          she   **having.goodness**-F.SG EQ.COP
          'She is good.' ([='She is one having goodness.'])   =(8a)

      b. $[[v_{poss}]]$ ($[[\sqrt{\text{NALLA}}]]$):
          $\lambda d\lambda x.\exists y[y$ is an instance of goodness & x has y & $\mu(y) \geq d]$

      c. $[[\text{POS}]]$ ($[[(29b)]]$):
          $\lambda x_e \exists d_d \exists y_e[y$ is an instance of goodness & x has y & $\mu(y) \geq d$ & $d \geq d_s]$

Given the lack of evidence for degrees in Washo, we do not pursue an analysis of vagueness facilitated by POS. Instead, we capture vagueness through the presence of the existential quantifier in the meaning of the verbalizer (Francez and Koontz-Garboden 2017):

(30) $[[-i\text{ʔ}]]$: $\lambda P_{\langle e,t \rangle} \lambda x_e \exists y[P(y)$ & **have**$(x,y)]$ =(17)

According to (30), y must be contextually restricted to those states that are big enough in the size-ordering to "stand out" (in the sense of Kennedy 2007) in the context. For example, this restriction renders (31) true if and only if 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:

(31) a. daláʔak   ʔ-í:yel **-iʔ** -i
          mountain 3-*BIG* **-ATTR** -IND
          'The mountain is big.'

      b. $[[(31a)]]$: $\exists y[\textbf{big}(y)$ & **have**(**mountain**,$y)]$

In this way, our account handles vagueness without recourse to degrees, just like the Kleinian approach proposed by Bochnak (2013, 2015).

5.2   Comparatives

In line with its degreeless behavior, comparatives in Washo are implicit (in the sense of Kennedy 2007), formed by conjoining two positive constructions, as in (32):[10]

(32)   t'é:liwhu de-ʔil-káykay-iʔ k'-éʔ-i,
        man   NMLZ-*TALL*-ATTR 3-be-IND

        daʔmóʔmoʔ de-ʔil-káykay-iʔ-é:s   k'-áʔ-a-š
        woman   NMLZ-ATTR-*TALL*-ATTR-NEG 3-be-DEP-DS

        'The man is taller than the woman.'
        ='The man is tall, while the woman is not tall.'   (Bochnak 2015:10)

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[10]Comparatives involve an adjunction structure with an embedded clause marked with the dependent mood *-aʔ*, which Hanink and Bochnak 2018 assign a semantics that is essentially equivalent to conjunction.

Relevant is that these comparatives fail to give rise to crisp judgments, which involve comparison of two objects that are very close in measurement (see Kennedy 2007). This behavior is demonstrated in (33).

(33)   *Context*: Comparing two ladders, where one is only slightly taller than the other.

#wí:diʔ ʔitmáŋa de-ʔil-káykay-iʔ   k'-éʔ-i
this   ladder   NMLZ-ATTR-*TALL*-ATTR 3-be-IND

    wí:diʔ de-ʔil-káykay-iʔ-é:s   k'-áʔ-a-š
    this   NMLZ-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.'   (Bochnak 2015:12)

In Bochnak's account, this behavior falls out from the vagueness inherent to the positive form. Gradable predicates are always vague, and so vagueness persists in conjoined comparatives. As comparatives in Washo simply involve conjunction of two positive forms, it is predicted that vagueness should be contributed by both property concepts.

(34)   [[*(32)*]]: $\exists c$[**tall**(*the man*) in c & ¬**tall**(*the woman*) in c]

Crucial to this logic is the idea that vague predicates are subject to a similarity constraint (Klein 1980, Graff 2000, Kennedy 2011):

(35)   **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)

This constraint predicts that crisp judgements should not be felicitous in conjoined comparatives (Kennedy 2007, Bochnak 2015, cf. Deal and Hohaus 2019, Bowler 2020).
    As on the Kleinian account, positive constructions in our analysis are norm-related and vague, and do not require recourse to POS. Repeated in (36), implicit comparatives in Washo are expressed by conjunction of positive forms:

(36)   a.   té:liwhu de-ʔil-káykay-iʔ   k'-éʔ-i   daʔmóʔmoʔ
              man   3.POSS-ATTR-*TALL*-ATTR 3-be-IND woman
                  de-ʔil-káykay-iʔ-é:s   k'-áʔ-a-š
                  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.'   (=32)

        b.   [[*36a*]]: $\exists y$[**tall**(*y*) & **have**(*man,y*)] & $\exists y$[**tall**(*y*) & ¬**have**(*woman,y*)]

As vagueness is built into the positive form on our analysis, we correctly predict the infelicity of crisp judgements, just like Bochnak's Kleinian account.

5.3   On the overall lack of degree constructions

So far, we have presented what is essentially a Davidsonian version of the analysis proposed for (presumed degreeful) Ulwa in Francez and Koontz-Garboden 2017. However, unlike Washo, Ulwa has an explicit comparative with the morpheme *more*:[11]

(37)   *Ulwa comparative*

Abanel ya **kanas** yûh-ka   Clementina karak
Abanel the **more** tall-3.POSS Clementina with
'Abanel is taller than Clementina.'   (Francez and Koontz-Garboden 2017:46)

This raises the question of what the difference between Ulwa and Washo is, given that Washo lacks degree morphology altogether. On this point 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.), rather than by the meanings of property concepts alone.[12]

   Our claim here is that such morphemes are not part of the functional inventory of Washo, and without this functional inventory, no degree constructions arise. The difference between Ulwa and Washo is then simply the functional inventory available in the language.

6.   Conclusion and outlook

In sum, we have argued in this paper that Washo property concepts are morphologically complex, using possession via categorization to turn a mass-type core into a property of individuals. The take-away from Washo relates to several bigger picture points concerning our understanding of the way property concepts are encoded across languages.

   First, in recent work, Menon and 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). In other cases, possession is encoded into the meaning of the property concept lexeme itself, as is the case for certain property concepts in Basaá (Hanink et al. 2019) and English adjectives (so that an adjective such as *beautiful* is the set of individuals standing in the possessive relation to some beauty state).

   Second, 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

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[11]Such morphemes are taken in the literature (e.g., Beck et al. 2009 to be diagnostic of the presence of degrees. See Bochnak (2015) for extensive discussion.

[12]See also Bogal-Allbritten 2013 for conceptually related syntactic ideas.

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.

There of course remain a host of open questions. For example, 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 (e.g., Cable 2018, Clem 2019), the structural interactions between (possessed) PCs and degree morphology, and variation in the derivation of change of state predicates from property concept lexemes (Koontz-Garboden 2007, Matthewson et al. 2015)

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