Property concept roots and the semantics of categorization

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Intro. *Property concepts* (PCs) (Dixon 1982, Thompson 1989) – expressions such as *tall* or *happy* that are canonically categorized as adjectives in English – are often categorized as nouns or verbs in other languages. While this type of variation is well-known, we address in this talk the less-studied question of whether the lexical semantics of property concepts is systematically tied to how they are categorized. For example, Francez & Koontz-Garboden (2017) (FKG) show that some PC nouns do not characterize individuals (as adjectives do), but rather denote predicates of abstract qualities (e.g., *goodness*, a set of portions of goodness) in the mass domain. Menon & Pancheva (2014) (MP) build on this and conjecture that the roots forming **all** property concept words, independent of category, have FKG's mass semantics, though variation in the morphosemantics of categorization potentially masks this underlying universality.

Claim. We argue for MP's core idea that PC roots are mass-denoting, drawing on data from nominal, verbal, and adjectival categorization in three unrelated languages. We show that, despite variation in category, PCs in these languages receive a unified analysis if mass-denoting PC roots must be categorized by a head encoding a possessive semantics to form predicates.

Background. MP suggest that, universally, PCs are built on acategorial roots that must be categorized by a head introducing a possessive semantics in order to create a predicate of individuals. Their analysis is based on Malayalam (Dravidian), which lacks an adjectival category, with many PC words instead being verbs. MP argue, building on FKG, that Malayalam in this case makes use of a **covert** categorizing v head – that encodes possession – in order to turn a mass-denoting root (e.g., $\sqrt{nall}$) into a property of individuals (*nalla* 'having goodness'). The resulting verb is then conventionally turned into a reduced relative in predicate constructions, as shown in (2b) for the example in (2a).

(1) a. aval [**nalla-**]val aanə
she [**having.goodness-**]F.SG EQ.COP
'She is good (one having goodness).'

b. $[[[\ \sqrt{nall} + \varnothing_{v.poss}\ ]_v + \text{POS}\ ]_v\text{ -a}]_{rel}$

Proposal. While the possessive categorizer MP propose is covert, we argue that several unrelated languages express this type of categorizer **overtly**. This type of possessive categorization is moreover not limited to verbalization: we find evidence across languages for overt possessive categorization resulting in nouns, verbs, as well as adjectives. Despite this variation in category however, we propose that a unified semantic treatment of the categorizer can capture the full range of presented data. Specifically, we argue that the categorizer shares the following properties across language and category: i) it introduces a possessive semantics (as in 2) and ii) it categorizes the root (as in 3). In all cases, we treat the root being categorized as denoting a set of states, following Parsons 1990, Baglini 2015, and Wellwood 2015, 2019. In this way, regardless of category, the meaning of the categorizer takes a root denoting a property of states as its first argument, returning a characteristic function of individuals possessing that state. We now demonstrate this in more detail with nominal, verbal, and adjectival categorizers in Ulwa, Washo, and English.

(2) $[\![\text{v}_{\text{poss}}/\text{n}_{\text{poss}}/\text{a}_{\text{poss}}]\!]$: $\lambda P_{\langle e,t\rangle}\lambda x_e \exists y[P(y)$ & **have**$(x,y)]$

(3) $[_{\text{vP/nP/aP}}\ [\ \sqrt{\text{PC-ROOT}}\ ]\ [\ \text{v}_{\text{poss}}/\text{n}_{\text{poss}}/\text{a}_{\text{poss}}\ ]]$

Nominalization. FKG argue that the PC categorizer in Ulwa (Misumulpan) is a nominalizer in the form of the possessive suffix *-ka*. Crucially, this suffix is used in both nominal possession (4) and property concept predication (5). Adopting the present analysis (2-3), (6) offers the derivation of the meaning *yûhka* 'have tallness'.

(4) Alberto pan **-ka**
Alberto stick**-3.POSS**
'Alberto's stick'

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

(6) a. [[$_{n}$ *-ka*]]: $\lambda P_{\langle e,t\rangle}\lambda x_e\exists y[P(y)$ & **have**$(x,y)]$
b. [[$\sqrt{YUH}$]]: λs_e[**tall**(s)]
c. [[*yûhka*]]: $\lambda x_e\exists y$[**tall**(y) & **have**(x,y)]

The meaning of (6c) is then the set of individuals possessing a contextually salient state of tallness (where context-sensitivity is the result of $\exists$-quantification, not POS, see FKG). Note that evidence that pre-categorized property concepts such as *yûh* are roots comes from the fact that they are bound morphemes in the language.

Verbalization. Second, many PCs in Washo (Hokan/isolate) are complex and must likewise be overtly derived. However, Washo PCs are *verbalized* by the so-called 'attributive' suffix *-i?*, which otherwise expresses possession of an ordinary entity (Jacobsen 1964, Hanink & Koontz-Garboden 2020). (7-8) show again that the same suffix is used in both nominal possession and property concept predication, while (9) derives *-í:yeli?-* 'have bigness'. Crucially, v_{poss} *-i?* in (9) has the same meaning as n_{poss} *-ka* in Ulwa. (Note here that evidence that (7)-(8) are verbal in category comes from verbal agreement and TAM suffixes.)

(7) di-gúšu? **-i?** -i
1-*PET* **-ATTR** -IND
'I have a pet/pets.'

(8) dalá?ak ?-í:yel **-i?** -i
mountain 3-*BIG* **-ATTR** -IND
'The mountain is big (has bigness).'

(9) a. [[$_{v}$ *-i?*]]: $\lambda P_{\langle e,t\rangle}\lambda x_e\exists y[P(y)$ & **have**$(x,y)]$
b. [[$\sqrt{IYEL}$]]: λs_e[**big**(s)]
c. [[*í:yeli?*]]: $\lambda x_e\exists y$[**big**(y) & **have**(x,y)]

Adjectivalization. Finally, we further add the English suffix *-y* to the typology, which we argue is a categorizer à la Ulwa *-ka* and Washo *-i?* (a similar state of affairs holds for German *-ig*). The OED's description of this suffix is '... having the qualities of' or 'full of' that which is denoted by the noun to which it is added...". Contrary to the description that *-y* is a nominal suffix, we find evidence for the claim that *-y* is a *root* categorizer from the fact that the input in many cases is clearly not a noun: while the nominal source of the adjectives in (10a) seems transparent enough, many *-y* adjectives are formed from bound roots (10b). We therefore assign an adjective such as *happy* the derivation in (11), which works just like *-ka* and *-i?*, adding adjectivalizers to the typology of categorizers that introduce a possessive semantics in order to form PCs from mass-denoting roots.

(10) a. salt**-y**, sugar**-y**
b. happ**-y**, tin**-y**

(11) a. [[$_{a}$ *-y*]]: $\lambda P_{\langle e,t\rangle}\lambda x_e\exists y[P(y)$ & **have**$(x,y)]$
b. [[$\sqrt{HAPP}$]]: λs_e[**happy**(s)]
c. [[*happy*]]: $\lambda x_e\exists y$[**happy**(y) & **have**(x,y)]

Upshot. Taking the above data together, we find overt evidence across a range of unrelated languages – Ulwa, Washo, and English – that different categorizers – nominalizers, verbalizers and adjectivalizers – encode a possessive semantics in order to turn mass-denoting roots into property concept words that predicate of individuals. While the resulting category of the PC may vary, what remains constant is the meaning of the categorizer (2), which invariably selects and categorizes an acategorial root (3) and expresses possession, a fact which, following FKG's logic, argues for the kind of mass-type denotation we assign to the categorized root.

Conclusion and impact. First, our proposal adds to the observed empirical landscape of (property concept)-categorization across languages, and points to a prolific use of possession as a means to create PC predicates of individuals. While we remain agnostic about MP's claim that PC roots are *universally* mass-denoting, the data at least point to this as a robust crosslinguistic option, as well as a potential point of variation across languages. Second, in arguing that categorizers can have particular kinds of meanings, our proposal offers some potential in answering the question raised by DM-style approaches like ours why not all roots can be categorized by all categorizers (see Potts 2007:358) – the categorizers discussed here semantically subcategorize for very specific kinds of (mass-type) meanings, which not all roots have.