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subcategor-
ization

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Deconstructing subcategorization: Conditions on insertion vs. position

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Princeton and Leibniz-ZAS, Berlin

LSA 2021

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(1) **Chamorro:**[1] AF /*um*/ $\boxed{\Rightarrow \text{wants to be before a V}}$

     a. <u>V-initial stem:</u> *um-epanglo* 'look for crabs'
     b. <u>C-initial stem:</u> *tr<um>isti* 'become sad'
        = *Infixation*

(2) **Tzeltal:**[2] 3.POSS /*y*/ $\boxed{\Rightarrow \text{wants to be before a V}}$

     a. <u>V-initial stem:</u> *y-ahwal* 'his ruler'
     b. <u>C-initial stem:</u> **m<y>ul* 'his sin'   (cf. *s-mul*)
        = *Suppletive allomorphy*

Q: Why do Chamorro /*um*/ and Tzeltal /*y*/ behave differently?
(Why can /um/ displace to satisfy its phonological condition, but /y/ can't?)

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[1] Yu 2007, 89, citing Topping 1973, 185
[2] Paster 2006, 59, citing Slocum 1948, 80

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(1') **Chamorro:** *um-epanglo*, *tr<um>isti* | __V |

(2') **Tzeltal:** *y-ahwal*, **m<y>ul*, cf. *s-mul* | __V |

Q: Why do Chamorro /*um*/ and Tzeltal /*y*/ behave differently?

A1 **Parameterized discontinuity**: /*y*/ doesn't infix because Tz. doesn't tolerate constituent interruption.   (e.g., Yu 2007)

- Problem: Languages may have **both** phonologically-conditioned suppletion and infixation—even Tzeltal (Slocum 1948, 83).

A2 **Optimization**: /*y*/ doesn't infix because this would produce a phonologically illicit form.   (à la McCarthy and Prince 1993a)

- Problem: Infixation may be non-optimizing and even anti-optimizing (Blevins, 1999; Yu, 2007; Kalin, 2020a).

A3 **Competition:** /*y*/ doesn't infix because there is a competing form for C-initial stems, /*s*/.   (Michal Starke, p.c)

- Problem: An exponent may be phonologically-restricted and have no competitor (Carstairs-McCarthy, 1998), yet cannot infix.

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(1') **Chamorro:** *um-epanglo*, *tr\<um\>isti* ┌─────┐
                                                 │ __V │
                                                 └─────┘

(2') **Tzeltal:** *y-ahwal*, **m\<y\>ul*, cf. *s-mul* ┌─────┐
                                                         │ __V │
                                                         └─────┘

Q: Why do Chamorro /*um*/ and Tzeltal /*y*/ behave differently?

A4 **Enriched subcategorization:** The restrictions on /*um*/ and /*y*/ are different from each other, i.e., richer than simply __V.
(e.g., Inkelas 1990, Blevins 1999, Paster 2006)

(3)   a.   Chamorro /*um*/: [$_{STEM}$ (C)(C)__V ...]

      b.   Tzeltal /*y*/:   __[$_{STEM}$ V ...]

A5 **Split subcategorization:** The restrictions on /*um*/ and /*y*/ can be very simple, e.g., __V, but are tied to two different mechanisms, one regulating insertion and the other position.

   ⇒ **To be defended in this talk**

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Talk outline

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Proposal: Deconstructing subcategorization

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The point of this talk: Subcategorization at the exponent level is <u>bifurcated</u> into two *separate* and *ordered* mechanisms

- CONDITION ON INSERTION **(COIN)**
  - ≈ *Can the exponent combine with a given stem?*
    - → **For:** suppletive allomorphy (and perhaps some morphological gaps)[3]
- CONDITION ON POSITION **(COP)**
  - ≈ *Where should an exponent be located in a string?*
    - → **For:** unexpected constituent disruption (infixation, perhaps some second position elements)[4]
      (nb. <u>not</u> for regulating an affix's basic position w.r.t. its stem!)

(1')   **Chamorro:** *um-epanglo*, *tr<um>isti*   (**COP:** __V)

(2')   **Tzeltal:** *y-ahwal*, **m<y>ul*   (**COIN:** __V)

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[3] Halle and Marantz 1993, 1994; Bobaljik 2000; Paster 2006, 2009; Bye 2008; Bye and Svenonius 2012; Hannahs 2013; Harley 2014; McPherson 2014, 2019; Kalin 2020b

[4] McCarthy and Prince 1993a,b; Blevins 1999; Yu 2003, 2007

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The point of this talk: Subcategorization at the exponent level is <u>bifurcated</u> into two *separate* and *ordered* mechanisms

- CONDITION ON INSERTION **(COIN)**
- CONDITION ON POSITION **(COP)**

Split subcategorization in the literature:

- Some kind of split has been argued for explicitly in a variety of works
    - "passive" vs. "active subcategorization" (Inkelas 1990)
    - "anchoring" vs. "selection" (Bye 2008)
    - "linear distribution" vs. "allomorphic selection" (Yu 2017)
    - nb. The split we argue for is not identical to that made in any of these previous proposals.

- The split we argue for here is assumed implicitly in much work in Distributed Morphology and related approaches
    (e.g., Embick 2010; Bye and Svenonius 2012)

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Split subcategorization

vs.

Enriched subcategorization

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Argument 1: Content

Observation: Suppletive allomorphy and infixation have different profiles w.r.t. the <u>content</u> of their restrictions.

Infixal pivots include...[5]

- *Phonological elements:* C, V
- *Prosodic elements:* Syllable, foot, stress

Suppletive allomorphy may be conditioned by...[6] (not exhaustive!)

- *Phonological elements:* C, V, <u>specific segments, features</u>
  e.g. Hungarian 2SG:[7] /-El/ for <u>sibilant</u>-final stems, else /-s/
- *Prosodic elements:* Syllable, foot, stress
- *Lexical elements:* <u>Idiosyncratic (classes of) roots</u>
  e.g. English PL: /-rən/ for <u>CHILD</u>, /-∅/ for <u>FISH</u>, ..., else /-z/

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[5] Ultan 1975; Moravcsik 1977; Yu 2007

[6] Carstairs 1987, 1990; Paster 2006, 2014; Veselinova 2006; Bobaljik 2012

[7] Paster 2006:41-42, citing Kenesei, Vago, and Fenyvesi 1997; Rounds 2001

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Argument 1: Content

Observation: Suppletive allomorphy and infixation have different profiles w.r.t. the <u>content</u> of their restrictions.

- Infixal pivots include only limited phonological and prosodic elements.

- Suppletive allomorphy may be conditioned by a much wider array of elements.

Comparing approaches:

⇒ **Split subcategorization approach:**
   - The mechanisms are separate and have distinct timing, so it's natural they could differ in content.

⇒ **Enriched subcategorization approach:**
   - The content of the restrictions should fully overlap, predicting (counter to fact), e.g., an infix that appears after the first sibilant, or after a specific (set of) roots.

Argument 2: The elsewhere

(4) **Bahnar**, NOMZN (Banker et al., 1979, 100-105)

    a.   /bɔ/ : appears with *m*-initial stems; prefixal

    b.   /ɔn/ : with all other stems; infixal (after first C)

(5)   a.   **muih** → bɔ-**muih** 'field in the woods'

    b.   **tǎr** → **t**<ɔn>**ǎr** 'woven bamboo'

Two analyses of Bahnar:

⇒ **Split subcategorization approach:**

(6)   a.   /bɔ/ : COIN: __ m   COP: *n/a*

    b.   /ɔn/ : COIN: *n/a* (elsewhere)   COP: C __

⇒ **Enriched subcategorization approach:**

(7)   a.   /bɔ/ : __ [$_{STEM}$ m ...]

    b.   /ɔn/ : [$_{STEM}$ C __ ...] *or* [$_{STEM}$ C$_{[\neg m]}$ __ ...]

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Argument 2: The elsewhere

Comparing analyses:

Split subcategorization approach:

(6′) a. /bɔ/ : COIN: __m   COP: *n/a*
      b. /ɔn/ : COIN: *n/a* (elsewhere)   COP: C __

- Captures the elsewhere distribution of the infix
- (No negatively-defined natural classes)

vs.

Enriched subcategorization approach:

(7′) a. /bɔ/ : __ [$_{STEM}$ m ...]
      b. /ɔn/ : [$_{STEM}$ C __ ...] *or* [$_{STEM}$ C$_{[\neg m]}$ __ ...]

- No elsewhere; complementary distribution is accidental
- (May need a negatively-defined environment)

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Argument 3: Locality

(8) **Hunzib**, VPL (van den Berg, 1995)

    a. /baa/ : appears with long-V-final stems; suffixal

        (i) **ʔãqaa** 'be thirsty' → **ʔãqa-baa**   (Berg:283)

        (ii) **ũcu-laa** 'hide-AP' → **ũcu-la-baa**   (Berg:338)

    b. /á/ : with all other stems; infixal (before final C)

        (i) **ɑhu** 'take' → **ɑ<á>hu**   (Berg:284)

        (ii) **ek** 'fall' → **e<yá>k**   (Berg:81)

Two analyses of Hunzib:

⇒ **Split subcategorization approach:**

(9) a. /baa/ : COIN: V:__   COP: *n/a*

      b. /á/ :   COIN: *n/a* (elsewhere)   COP: __C

⇒ **Enriched subcategorization approach:**

(10)   a. /baa/ : [... V:]$_{STEM}$ __

       b. /á/ : [... __ C(V)]$_{STEM}$

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Argument 3: Locality

Comparing analyses:

⇒ **Split subcategorization approach:**

(9′)   a.   /baa/ : COIN: V:__   COP: *n/a*
       b.   /á/ :   COIN: *n/a* (elsewhere)   COP: __C

- All conditioning elements are strictly local
- Has an elsewhere

vs.

⇒ **Enriched subcategorization approach:**

(10′)   a.   /baa/ : [... V:]$_{STEM}$ __
        b.   /á/ : [... __ C(V)]$_{STEM}$

- Non-local conditioning needed
- Conceals a disjunctive environment
- No elsewhere

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Argument 4: Ordering

Observation: Examining 31 cases of suppletive allomorphy involving an infix, Kalin (2020a) finds that **suppletion is never conditioned by an infix's surface (infixed) environment**.

- The choice among suppletive allomorphs is always made **at the stem edge**.

Comparing approaches:

⇒ **Predicted under split subcategorization:**

- If insertion (COINs) is *separate from* and *determined before* idiosyncratic/infixed position is (COPs), then suppletion is naturally determined *pre*-infixation.

⇒ **Not predicted under enriched subcategorization:**

- If COINs and COPs are collapsed into one frame (thus both insertion and position are evaluated simultaneously), then it is predicted (incorrectly) that the infixed environment *should* be able to condition suppletion.

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Interim summary

	Split Subcat (adopted)	**Enriched Subcat (rejected)**
Content of restriction	Predicted to be (possibly) distinct	Not predicted to be distinct
Elsewhere distribution	Preserved	May be lost
Negative subcat	Not required	May be required
Locality	Can maintain strict locality	Requires looser locality constraints
Ordering effects	Predicted to be possible	Not predicted to be possible

Table 1: Comparison of approaches

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Discussion and implications

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Take-away: Subcategorization effects cannot be captured in one unified mechanism, even w.r.t. the narrow phenomena considered here (infixation and suppletive allomorphy)

- Two mechanisms: exponent choice, exponent displacement

Architectural implication: The data (involving ordering in particular) show there must be a level of representation where COINs are evaluated, but COPs are not (yet)

- Supports a model where the derivation proceeds in stages, e.g., with morphology (exponent choice) preceding phonology (including infixation)[8]

- Conflicts with models with a single derivational stage that subsumes (at least some) suppletive allomorphy and phonology, e.g., parallel P-with-M models[9]

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[8] Halle and Marantz 1993; Paster 2006; Bye 2008; Embick 2010; Bye and Svenonius 2012

[9] McCarthy and Prince 1993a,b; Mester 1994; Kager 1996; Mascaró 1996, 2007; Hyman and Inkelas 1997; Tranel 1998; Horwood 2002; Bonet 2004; Yu 2017

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Broader perspective: Subcategorization is used for a wide variety of phenomena apart from allomorphy and infixation...

- Argument structure
- Syntactic complement selection
- Morphological compatibility and gaps
- Prefixhood/suffixhood
- Second positionhood
- Idiosyncratic prosodic domains
- Phonological rule-blocking

Can any of the above be collapsed with each other and/or be subsumed under COINs or COPs?

⇒ <u>To consider:</u> *Do the restrictions operate over the same elements? Can the restriction vary by exponent? Is the restriction ordered with respect to others (e.g., is there opacity)? Can the input be altered to satisfy the restriction (and if so, in what ways)? What patterns are predicted, and are they attested? Etc.*

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Consequence: Theories that employ subcategorization need to (i) be careful about accounting for subcategorization-based phenomena with enriched multi-purpose frames, and (ii) be explicit about what type of properties a subcategorization frame has (e.g., is it for insertion, position, or something else)

(11)   Serbo-Croatian second position clitics (Sande et al., 2020)

$$[\text{PRES},3\text{SG}] \longleftrightarrow \begin{cases} \mathcal{F}eatures: & /\text{je}/ \\ \mathcal{P}ros(subcat): & \boxed{]_\omega - \text{X}} \\ \mathcal{R}anking: & - \end{cases} \rightarrow \textbf{COP??}$$

- $\mathcal{P}$ is exponent specific and regulates second positionhood, basic affix position (prefixhood/suffixhood), and idiosyncratic prosodic domain creation... **are these properties all plausibly expressed simultaneously, via the same mechanism?**

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Appendix: Prefixhood/suffixhood

Can COINs or COPs be used to encode whether an affix is a prefix or suffix? **No (Kalin, 2020a):**

- All suppletive exponents of a morpheme (including infixal exponents) cluster at the same edge of the stem (left or right), i.e., edge orientation does not co-vary with suppletive exponents.

- Further, suppletive conditioning environments (encoded in COINs) are uniformly found at the stem edge at which the exponents of a morpheme (infixal or not) are clustered.

⇒ **Basic linearization with respect to a stem (as preceding or following it) must be determined prior to the evaluation of both COINs and COPs**, e.g., by some linearization algorithm read off of the structure.

  - If basic linearization with respect to a stem were not determined prior/first, then there would be no reason for same-edge clustering and same-edge conditioning.
  - *Implication:* Infixes are (first) prefixes/suffixes.

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Appendix: Nancowry

(12) **Nancowry** INSTNOM (Radhakrishnan, 1981; Kalin, 2020c)

    a.   /an/ : COIN: with monosyllabic stems
                 COP: after (first) C

    b.   /in/ : COIN: with disyllabic stems
                 COP: after (first) V

(13)   a.   INSTNOM + *top* ('to drink')
           ↳COIN ⇒ *an*
                  ↳ COP ⇒ | t<**an**>op ('a glass') |

    b.   INSTNOM + *kurus* ('to scratch')
           ↳COIN ⇒ *in*
               ↳ COP ⇒ ku<**in**>rus
                   ↳ | k<**in**>rus ('a rake') |

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