

Splitting POS: Evidence from Navajo for Two POS Morphemes¹

Outline:

- I. Discuss the semantics of Navajo degree constructions using adjectival verbs *not* of type $\langle d, et \rangle$. In previous work (Bogal-Allbritten 2010), I have assumed these verbs to be POS- ('positive') marked.
- II. Propose that POS be split into two morphemes. Only one will introduce norm-relatedness, contra standard proposals for POS. This proposal draws is based on proposals by Rett (2008).
- III. Account for the distribution of two POS morphemes with two principles, *Avoid Uninformativity* and *Avoid Synonymy*.
- IV. Consider other languages in which POS_u is realized.

1: Theoretical Assumptions and Navajo Background

- Follow Kennedy (1997, *a.o.*) in assuming basic adjectival meaning (here, verb stem) to be a measure function (type $\langle ed \rangle$), as in (1a).²
 - Additional derivational morphology required to derive type $\langle d, et \rangle$ and $\langle et \rangle$ predicates; (1b) and (1c), respectively.

- (1) a. $[[\text{tall}]] = \lambda x. \delta_{\text{tall}}(x)$
b. $[[\text{MEAS}]] = \lambda g_{ed} \lambda d \lambda x. g(x) \geq d$ (Svenonius and Kennedy 2006)
c. $[[\text{POS}]]^c = \lambda g_{ed} \lambda x. g(x) > \text{STND}(g)$ (Kennedy 2007b)

- POS introduces a norm-related interpretation (comparison with contextual norm, STND(g))

1.1 Degree morphemes in Navajo

- Navajo adjectival verbs can be marked with three sets of morphology:
 1. Comparative Aspect (CA)
 2. Absolute Aspect (AA)
 3. Perfective Aspect (PERF)

¹ All data from Young and Morgan (1987) and from work with Navajo speakers Ellavina Perkins and Irene Silentman, whom I thank for sharing their knowledge with me. This work has benefited greatly from discussion with Rajesh Bhatt, Seth Cable, Ted Fernald, and Philippe Schlenker.

• This theory contrasts with the relational analysis (Cresswell 1976, Seuren 1978, von Stechow 1984, Heim 2000, *a.o.*), where all adjectives have type $\langle d, et \rangle$ meaning.

- (2) a. 'áníłnééz *Comparative Aspect*
 'á_{CA}-ní_{CA}-3S-ł_{CA}-nééz_{CA}
 'He/she/it is tall/long in a relative or comparative sense'
 $[[CA]] = \lambda g_{ed} \lambda d \lambda x. g(x) \geq d$
 $[[\text{'áníłnééz}]] = tall(he) \geq d$
- b. nineez *Absolute Aspect*
 ni_{AA}-3S-ø_{AA}-neez
 'He/she/it is tall/long'
 $[[AA]]^c = \lambda g_{ed} \lambda x. g(x) > STND(g)$
 $[[nineez]] = tall(he) > STND(tall)$
- c. dilchxosh *Absolute Aspect*
 di-(ni_{AA})-3S-ø_{AA}-chxosh
 'It is bubbly'
 $[[AA]]^c = \lambda g_{ed} \lambda x. g(x) > STND(g)$
 $[[dilchxosh]] = bubbly(it) > STND(bubbly)$
- d. deesdoi *Perfective Aspect*
 di-3S-doi_{PERF}
 'It (area) is hot'
 $[[PERF]]^c = \lambda g_{ed} \lambda x. g(x) > STND(g)$
 $[[deesdoi]] = hot(it) > STND(hot)$

- $[[AA]]$ and $[[PERF]]$ have the semantics attributed to $[[POS]]$ as found in other languages.
- I assume a blocking effect or other morphological restriction determines the morphological realization of POS as either AA or PERF.
- I propose Navajo has two degree morphemes, CA and POS:

- (3) a. $[[CA]] = \lambda g_{ed} \lambda d \lambda x. g(x) \geq d$
 b. $[[POS]]^c = \lambda g_{ed} \lambda x. g(x) > STND(g)$

- We'll reconsider whether non-CA-marked verbs are only marked by POS as defined above.

1.2 Distribution of degree morphology

Two Major Groups of Adjectival Verb Stems	
I: Stems that can be marked by CA or POS _{AA}	(TABLE A)
II: Stems that can only be marked by POS	
A: Stems that can only be marked by POS _{AA}	(TABLE B, C)
B: Stems that can only be marked by POS _{PERF}	(TABLE D)

I (TABLE A): Ability of a verb stem to be CA-marked entails the existence of a POS_{AA}-marked form of the same stem

- Stems denoting measurable or quantifiable dimensions
- Type <d,et> CA-marked stems are most ‘marked’ in two senses: most morphologically complex, most narrow distribution³

TABLE A: Verb stems taking both CA and POS_{AA}⁴

Translation of Stem	POS _{AA} -marked	CA-marked
Wide, thick	nitsaaz	’áníłtsááz
Large, big, tall	nitsaa	’áníłtso
Distant, far	nízaad	’ánízáád
Number	nit’é	’áníit’e’
Tall	nineeaz	’áníłnééz
Wide	niteel	’áníłtéél
Heavy	nidaaz	’áníłdáás
Big, thick	nidíł	’áníłdíí
Big around	nimaal	’áníłmáál
Be (in quantity)	łą’í (many)	’áneeláá’
Be (in number)	niilt’é	’áneelt’e’

IIA (TABLE B and TABLE C): Many verb stems can only be POS_{AA}-marked

TABLE B: Verb stems taking only POS_{AA}

Translation of Stem	POS _{AA} -marked
Stinky	nichxon
White	łigai
Red	łichíí’
Round, plump	dijool
Dark	chahatł’ée’
Bubbly	dilchxosh

³ Taken as evidence in previous work that verb stems are not basically of type <d,et>. Type <d,et> meaning must be derived and is not available for most adjectival verbs.

⁴ Negative dimensional adjectival verbs (short, thin, lightweight) also have both POS_{AA} and CA-marked forms. In their CA-marked form, they are only found in equative and WH-question degree constructions and always have a norm-related interpretation. For a list of these verbs and an account of their norm-relatedness, please see Bogal-Allbritten (2010). I do not consider them in this paper due to their apparent greater semantic complexity.

- I include in this group of verbs a small number (TABLE C) for which CA-marked forms were cited in Young and Morgan (1987) but which were rarely (if ever) used in degree constructions by speakers and were felt to be marginal (disagreement over the existence or precise morphological shape of the verb).
 - With respect to degree constructions, POS-marked verbs in TABLE C pattern identically to verbs in TABLE B (and TABLE D) (see §3).

TABLE C: Verb stems taking primarily POS_{AA}; CA-marked form marginal

Translation of Stem	POS _{AA} -marked	CA-marked
Pretty	nizhóní	'ánóóshóní
Strong	bidziil	'ábóodziil
Fast	dilwo'	'ádóolwo'
Wet	ditléé'	'ádóotléé'

IIB (TABLE D): Many verb stems can only be POS_{PERF}-marked

TABLE D: Verb stems taking only POS_{PERF} morphology

Translation of Stem	3-person
Frozen	hastin
Hot	deesdoi
Slippery	hwíidéeltq'
Protruding	k'éz'á
Warm	neezilí
Fat	neesk'á
Speckled	yistł'in
Moist	náshzhoh
Tender, fluffy	yilzhólí

2: Morphological, Syntactic, and Semantic Footprints of CA and POS

Morphological Footprint:

- CA-marked adjectival verbs bear [ɬ] valence marker, associated with transitive argument structure (Hale 2000).
- POS-marked adjectival verbs bear [∅] valence marker, associated with intransitive argument structure.⁵

Syntactic Footprint:

- CA-marked adjectival verbs must be modified by a degree expression (TABLE E).
 - (2a) [ʔánílnééz] ‘s/he is tall in a relative or comparative sense’ is a citation form only. It could not occur on its own, even in a rich context.
- By contrast, POS-marked adjectival verbs can occur without a degree expression (although they can be used with a subset of degree expressions).

TABLE E: Degree expressions

Navajo	Translation	Interpretation		Type
a. <i>P-lááh</i>	‘beyond P’	X is more A than P	(comparative)	PP
b. <i>P-’oh</i>	‘short of P’	X is less A than P	(comparative)	PP
c. <i>P-ee</i>	‘with P’	X is as A as P	(equative)	PP
d. <i>NP-gi</i>	‘at NP’	X is as A as P	(equative)	Enc
e. <i>Haa</i>	‘how, why’	How A is X?	(<i>Wh</i> -word)	Wh
f. measure phrase	MP	X is MP A	(e.g., <i>X is 6ft tall</i>)	DP
g. <i>’ayóo</i>	‘very’	X is very A	(intensifier)	Adv

⁵ Specifically, POS_{AA}-marked adjectival verbs; POS_{PERF}-marked verbs take idiosyncratic, apparently frozen valence markers.

- POS-marked adjectival verbs are modified by degree expressions introduced by the copula 'át'é and marked as adverbial expressions with the -go [-ADV], the marker of adverbialization and subordination (4a). Degree expressions underscored.

- CA-marked adjectival verbs must be modified by non-adverbial degree expressions (4b).

(4) a. Shichidí nihígíí bilááh *(át'égo) nizhóní
 1sg-car 2sg-the.one 3O-BEYOND 3S-be-ADV POS-3S-pretty
 'My car is prettier than yours.'

b. Shínaaí bilááh (*át'égo) 'áníshdíl
 1poss-older.brother 3O-BEYOND 3S-be-ADV CA-1sgS-big
 'I'm larger than my older brother.' (Young and Morgan 1987: d85)

- Taken as evidence that degree expressions modifying POS-marked adjectives are adverbs; this follows if POS-marked adjectives are intransitive, type <et> expressions.
 - Evidence that degree expressions modifying CA-marked adjectives are occupying argument positions; this follows if CA-marked adjectives are transitive, type <d,et> expressions (Heim 2000).

Semantic Footprint:

- CA-marked verbs can occur in degree constructions requiring an open degree argument (measure phrase (saturation of degree argument), subcomparative (abstraction over degree argument)).
 - POS-marked verbs are ungrammatical in measure phrase constructions and range from ungrammatical to highly questionable in subcomparatives.
- CA-marked verbs do not introduce an entailment of norm-relatedness in degree constructions.⁶

POS-marked adjectival verbs vary with respect to the presence / absence of norm-relatedness in degree constructions

⁶ Modulo CA-marked verbs denoting negative dimensions; see Footnote 4.

3: Variation in Norm-relatedness with POS

- Degree constructions with adjectival verbs that can be either CA- or POS-marked are:

⇒ **Obligatorily norm-related when verb is POS-marked** ⇐
 ⇒ **Not norm-related when verb is CA-marked** ⇐

- This follows from the denotations proposed for POS and CA:

- (5) a. $[[CA]] = \lambda g_{ed} \lambda d \lambda x. g(x) \geq d$
 b. $[[POS]]^c = \lambda g_{ed} \lambda x. g(x) > STND(g)$

- (6) a. Shimá shideezhí yilááh ’áníñnééz,
 1poss-mother 1poss-younger.sister 3’O-BEYOND CA-3S-tall
 ’áko ndi doo t’áá ’ála yeígo nineez da
 but NEG both very POS_{AA}-3S-tall NEG
 ‘My mother is taller than my younger sister, but they are both not very tall.’

- b. Shimá shideezhí yilááh ’át’éego nineez,
 1poss-mother 1poss-younger.sister 3’O-BEYOND 3S-be-ADV POS_{AA}-3S-tall
 # ’áko ndi doo t’áá ’ála yeígo nineez da
 but NEG both very POS_{AA}-3S-tall NEG
 ‘My mother is taller than my younger sister, #but they are both not very tall.’

- (7) a. Nigi ’ánísnééz,
 2sg-LOC CA-1sgS-tall
 ’áko ndi doo yeígo nisneez da
 but NEG very POS_{AA}-1sgS-tall NEG
 ‘I am as tall as you, but I am not very tall.’

- b. Nigi ’át’éego nisneez,
 2sg-LOC 3S-be-ADV POS_{AA}-1sgS-tall
 # ’áko ndi doo yeígo nisneez da
 but NEG very POS_{AA}-1sgS-tall NEG
 ‘I am tall like you, # but I am not very tall.’

- Degree constructions with adjectival verbs that can only be POS-marked are:

⇒ **Not obligatorily norm-related** ⇐

- This does not follow from our earlier semantic proposal for POS.

(8) a. Shideezhí shádí yilááh ’át’éego nizhóní,
 1poss-younger.sister 1poss-older.sister 3’O-BEYOND 3S-be-ADV **POS_{AA}-3S-pretty**
 ’áko ndi doo t’áá ’ála yeígo nizhóní da
 but NEG both very **POS_{AA}-3S-pretty** NEG
 ‘My younger sister is prettier than my older sister, but they are both not very pretty.’

b. Shiwáán niwáán yilááh ’át’éego dilchxosh,
 1poss-wine 2poss-wine 3’O-BEYOND 3S-be-ADV **POS_{AA}-3S-bubbly**
 ’áko ndi doo t’áá ’ála yeígo dilchxosh da
 but NEG both very **POS_{AA}-3S-bubbly** NEG
 ‘My wine is more bubbly than your wine, but they are both not very bubbly.’

c. Tacomadi kééhasht’ígí yilááh ’át’éego deesdoi,
 Tacoma-LOC 2sgS-reside-the.one 3’O-BEYOND 3S-be-ADV **POS_{PERF}-3S-hot**
 ’áko ndi doo t’áá ’ála yeígo deesdoi da
 but NEG both very **POS_{PERF}-3S-hot** NEG
 ‘Tacoma is hotter than where you live, but they are both not very hot.’

Are the verbs in (8) marked with a suppletive form of CA? No.

- It is true that POS-marked adjectival verbs pattern semantically like CA-marked adjectival verbs (non-norm-related) in degree constructions.
- However, all POS-marked adjectival verbs (e.g., verbs in (6), (7), and (8)) pattern distinctly from CA-marked adjectival verbs with respect to their syntax:
 - Degree expressions modifying all POS-marked verbs are marked as adverbial; degree expressions modifying CA-marked verbs cannot be marked as adverbial, suggesting they saturate argument positions associated with the degree argument.
- **Conclusion:** All non-CA-marked adjectival verbs are POS-marked but our theory of POS must take into account the potential for some POS-marked verbs to not be norm-related when used in degree constructions.

4: Proposal to Split POS

- **Proposal:** Two morphemes of type $\langle \text{ed}, \text{et} \rangle$, one ‘informative’ (relates degree to contextual standard of comparison) and one ‘uninformative’ (binds degree produced by measure function).

- (9) a. $[[\text{POS}_{\text{informative}}]]^c = \lambda g_{\text{ed}} \lambda x. g(x) > \text{STND}(g)$
b. $[[\text{POS}_{\text{uninformative}}]]^c = \lambda g_{\text{ed}} \lambda x \exists d. g(x) = d$

- The two POS morphemes do not map onto the Absolute Aspect vs. Perfective distinction.
- Any adjectival verb stem can, in theory, be marked with either POS_u or POS_i but the attested distribution of the two morphemes is restricted by the following two principles:

- (10) a. **AVOID UNINFORMATIVITY:** Avoid a derivation producing an expression with trivial truth conditions that do not add ‘useful’ information to the context.
- b. **AVOID SYNONYMY:** Avoid a derivation producing an expression that has the same truth conditions as a competing, preferred derivation.

4.1 Effect of AVOID UNINFORMATIVITY

- Adjectival verbs can only be marked by POS_u if they are further modified (by a degree expression) such that more information is provided about the degree.
- (11) must contain a verb marked with POS_i – the alternative with POS_u makes a very trivial assertion (‘my mother has a degree of attractiveness’).

- (11) Shimá nizhóní
1poss-mother **POS_{AA}-3S-pretty**
‘My mother is pretty (in excess of a standard of comparison)’
vs. ‘My mother has a degree of attractiveness *d*’

- If a POS_u -marked verb is used in a comparative or equative construction, the degree expression contributes more information (‘my mother’s degree of attractiveness exceeds that of your mother’) such that the meaning is no longer trivial.

- (12) Shimá nimá yilááh ’át’éego nizhóní
1poss-mother 2poss-mother 3’O-BEYOND 3S-be-ADV **POS_{AA}-3S-pretty**
‘My mother is prettier than your mother.’

4.2 Effect of AVOID SYNONYMY

- Adjectival verbs can only be marked by POS_u in a degree construction if there is not a competing degree construction containing the verb's CA-marked counterpart.
- This principle is only relevant for adjectival verbs that can take both POS and CA, which were shown in TABLE A.

- (13) a. Shimá shideezhí yilááh 'áníñnééz,
 1poss-mother 1poss-younger.sister 3'O-BEYOND CA-3S-tall
 'áko ndi doo t'áá 'áła yeígo nineez da
 but NEG both very POS_{AA}-3S-tall NEG
 'My mother is taller than my younger sister, but they are both not very tall.'
- b. Shimá shideezhí yilááh 'át'éego nineez,
 1poss-mother 1poss-younger.sister 3'O-BEYOND 3S-be-ADV POS_{AA}-3S-tall
 # 'áko ndi doo t'áá 'áła yeígo nineez da
 but NEG both very POS_{AA}-3S-tall NEG
 'My mother is taller than my younger sister, #but they are both not very tall.'

- The POS_u-interpretation is blocked in (13b) because the truth conditions are too close to the truth conditions of the CA-marked form.
 - A general principle of 'Use a CA-marked form if there is one' must be assumed. This principle may relate to preferences for the mode of degree modification (degree argument vs. domain manipulation, see Schwarzschild 2010).
- This principle can also account for why we only see certain constructions occurring with CA-marked adjectival verbs, rather than their POS_u-marked counterparts.
 - All POS-marked verbs in (14) and (15) are POS_i-marked. A norm-related adjective is incompatible with measure phrases (Kennedy 1997) and forces a questionably acceptable 'metalinguistic' interpretation in the subcomparative (Krasikova 2009).

- (14) a. Tseebíí dahidídlo' 'áníñdáás / *nidaaz
 eight pound CA-3S-heavy POS_{AA}-3S-heavy
 'It weighs eight pounds'
- b. Dízdiin dah alzhin 'ánísh máál / *nismaal
 four inch CA-1sgS-big.around POS_{AA}-1sgS-big.around
 'I am forty inches around.'

(15) a. Díí naaltsoos ’áníftéélígíí yilááh ’áníftnééz
 DET book CA-3S-wide-COMP 3’O-BEYOND CA-3S-long
 ‘This book is longer than it is wide’

b. ?? Díí naaltsoos niteelígíí yilááh ’át’éeego nineez
 DET book POS_{AA}-3S-wide-COMP 3’O-BEYOND 3S-be-ADV POS_{AA}-3S-long
 (‘This book is longer than it is wide’)

- AVOID SYNONYMY compares large chunks of competing structure (degree constructions containing POS- and CA-marked adjectival verbs).
 - ‘Blocking’ as a relation that holds between objects larger than single lexical items; obviation in Romance, Hungarian, and Serbo-Croatian (Farkas 1992).
 - Precedent for a similar principle proposed by Rett (2008) to account for distribution of EVAL (another morpheme encoding norm-relatedness) in English.⁷

5: Precedent and Cross-linguistic Evidence for POS_u

- Rett (2008) suggests that the POS morpheme *in all languages* may be fundamentally non-norm-related. Pragmatic constraints give POS-marked adjectives an obligatorily norm-related interpretation when the adjective is not further modified.
 - For Rett, our POS_i would be a strengthened form of the basic morpheme POS_u rather than a separate morpheme.
- POS_u will never surface in languages in which POS-marked adjectives are not used in degree constructions.
 - Surfaces in Navajo, Swahili
 - Its presence is not immediately apparent in English (but see §5.2)

⁷ Rett (2008) locates the source of norm-relatedness outside of the POS-marked construction in another morpheme, EVAL. EVAL is a degree modifier of type <dt,dt> that takes a set of degrees associated with an adjective and returns the subset exceeding the contextual standard. EVAL accounts for norm-relatedness in constructions such as *John is as short as Sam: short* is given a norm-related interpretation in order to avoid synonymy with the construction *John is as tall as Sam*.

5.1 Other languages exhibiting POS_u

- **Swahili:** *exceed*-type language (serial verb construction: *exceed* + POS-marked adjective) (Rett 2008)

- Adjective *mrefu* ‘big’ used without modification in (16a) is norm-related; *mrefu* used in a degree construction in (16b) is not obligatorily norm-related

(17) a. Mti ni mrefu
tree is big
‘The tree is tall (in excess of a contextual standard)’

b. Mti hu ni mrefu ku –shinda ule
tree this is big INF –exceed that
‘This tree is taller than that tree’
(Can be used to discuss the heights of two relatively short trees)

Swahili (Stassen 1985: 43, cited in Rett 2008: 219)

- The pattern in (17) can be accounted for if we assume a POS_u morpheme and a general principle of AVOID UNIFORMITY that either forces use of POS_i or strengthens POS_u such that it is norm-related.

- **Alternative:** A language (like Swahili) with *only* ‘POS-marked adjectives’ could be proposed to lack a degree semantics entirely and instead utilize implicit comparison

- **Implicit Comparison:** Comparative morphology manipulates contexts of comparison, rather than degree variables (Kennedy 2007a; Beck et al. 2004; Beck et al. to appear).

- Pearson (2010) argues that Fijian exhibits implicit comparison

- All Fijian adjectives are type ⟨et⟩ vague predicates. No POS morpheme.
- The comparative marker *mai* restricts domain of discourse *c* to {John, Mary}.

(18) a. $[[\text{tall}]]^c = \lambda X \lambda x \in X . x \text{ counts as tall in } c, \text{ with respect to } X$

b. Mary balavu sara mai vei John
M. tall very DIR PRP J.
‘Mary is taller than John’

- However, languages with only implicit comparison are predicted to lack particular constructions requiring a degree semantics (subcomparatives, measure phrase and differential measure phrase constructions, true degree questions) (e.g., Beck et al. to appear).
 - **Fijian:** These constructions are missing, as expected if only implicit comparison is available.⁸
 - **Swahili:** I do not know. However, Vanderelst (2008) presents evidence from **Yoruba** (another *exceed*-type language) that the language has a degree semantics even though adjectives always appear in their ‘POS-marked’ form.
 - Yoruba has subcomparatives, measure phrase constructions, differential measure phrases, and degree questions; uses POS-marked adjectives in degree constructions.
- **Conclusion:** A degree semantics (and POS_u) is needed for Navajo and maybe Swahili. If we eliminate degrees from a language like Swahili or Yoruba, we may lose our account of other constructions suggesting the existence of a degree semantics in the language.
 - POS_u allows adjectives to be of type ⟨et⟩ while not introducing a norm-related interpretation. The adjectives retain their degree semantics and are able to participate in degree constructions requiring degree arguments.

5.2 Evidence for POS_u in English?

- Rett (2008) observes that POS-marked adjectives are always norm-related in English.
 - This could mean that English only has POS_i or that POS_u is available but its existence is obscured because POS-marked adjectives are only used outside of degree constructions, where POS_u would lead to a violation of AVOID UNINFORMATIVITY.

First Potential Piece of Evidence

- Rett (2008) cites (19) as a possible example where POS_u may surface because it is an informative statement.

- (19) a. Sue is (once again) heavy / light.
 b. Meaning: Sue once again has a degree of weight.
 c. Context: Sue has reentered Earth’s atmosphere after a period of being weightless.

⁸ Except for differential measure phrases. See Pearson (2010) for an account of this construction using implicit comparison.

- Rett asks whether (19a) construction can actually be used, even in the given context. She notes that the infelicity might be due not the absence of POS_u from English but from the existence of an unambiguous alternative, *Sue (once again) has a weight*.
 - **Additional problem:** Perhaps *heavy* and *light* in (19a) are marked with POS_i but the ‘contextual standard’ for weight in this context is ‘greater than 0’ (given that Sue was in outer space).

Second Potential Piece of Evidence

- Another possible environment in which POS_u may be observed is the italicized portion of (20a), which for me is the most natural way to deny that John is a tall individual.

- (20) a. John is taller than Mary, but *he’s not especially / very / particularly tall*.
 b. Means: It is not the case that John is tall in the context.
 c. Does not mean: It is not the case that John is tall to a high degree.

- **Possibility:** In the English sentence (20a), *tall* is POS_u-marked (for unclear reasons...) and *especially* (or *particularly* or *very*) is needed to make the adjective informative (i.e., make it norm-related).
- Use of ‘high degree’ morphemes to contribute a norm-related semantics to an adjective that *appears* to be in its POS-marked form attested in Mandarin:

- (21) Zhangsan *hen* gao
 Z. very tall
 ‘Zhangsan is tall’

(Sybesma 1999: 27, cited in Grano, to appear: 3)

6.0 Conclusions and Further Questions

6.1 Conclusions

- Navajo has two morphemes of type $\langle \text{ed}, \text{et} \rangle$, POS_u and POS_i :

(22) a. $[[\text{POS}_{\text{informative}}]]^c = \lambda g_{\text{ed}} \lambda x. g(x) > \text{STND}(g)$
b. $[[\text{POS}_{\text{uninformative}}]]^c = \lambda g_{\text{ed}} \lambda x \exists d. g(x) = d$

- The distribution of these morphemes is governed by the principles AVOID UNINFORMATIVITY and AVOID SYNONYMY.

- AVOID SYNONYMY is a principle that examines large pieces of syntactic structure (entire degree constructions) rather than single lexical items or morphemes

- Further evidence for the existence of POS_u will come from languages in which POS-marked forms of the adjective are used in degree constructions (but for which a degree semantics is motivated).

6.2 Further Questions

A: Are POS_i and POS_u two morphemes?

- Rett (2008) assumes that POS_u is pragmatically strengthened to a norm-related form of the same morpheme.

B: Support for ‘blocking’ principles (e.g., AVOID SYNONYMY) that compare large pieces of syntactic structure

C: More work is needed on *exceed*-type languages such as Swahili

- How do these languages compare with languages like Fijian, where implicit comparison is used rather than manipulation of degrees?
- Is there evidence that adjectives in languages like Swahili are marked by POS_u or is it more parsimonious to claim that they are of type $\langle d, \text{et} \rangle$ and the language contains only a null POS morpheme with a norm-related semantics?
 - **How can we tell?** What is the difference between a POS_u -marked adjective and a basically type $\langle d, \text{et} \rangle$ adjective?
 - Mode of modification of adjective by degree expression (see Schwarzschild (2010) for discussion of modification of adjectives by adverbial degree expressions).

7.0 References

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