1 Introduction

In this paper, I consider the semantics of Navajo (Athabaskan) degree constructions using adjectival verbs that I argue are type <et> properties of individuals. In previous work (Bogal-Allbritten 2008, 2010a), I have argued that Navajo adjectival verbs have a type <d,et> meaning only when marked by certain degree morphology, referred to as ‘comparative aspect’ (CA). This sets Navajo apart from languages like English, where a type <d,et> meaning is generally taken to be available for all adjectives (Cresswell 1976, von Stechow 1984, Heim 2001, inter alia), either as the basic meaning of an adjective or through composition with particular degree morphology (Kennedy 1997). All other Navajo adjectival verbs behave like type <et> expressions.

Bogal-Allbritten (2008) argued that these type <et> adjectival verbs bear the POS ('positive') morpheme. POS has been posited cross-linguistically where adjectives are used in the ‘positive’ construction, e.g., ‘John is POS-tall.’ A standard semantics for POS is shown in (1). POS relates the degree to which the adjective g (which I assume to be a type <ed> measure function) holds of some individual x in excess of a contextual standard of comparison or ‘norm.’ The norm is determined by applying the function STND to g, where the value of STND(g) is the degree that it takes to ‘stand out’ in some context c (Kennedy 2007). Due to the presence of STND(g), POS-marked adjectives are said to be ‘norm-related’ (Bierwisch 1989).

(1) \[ ([\text{POS}])^c = \lambda g. \lambda x. g(x) > \text{STND}(g) \] (Kennedy 2007)

In Navajo, type <et> adjectival verbs appear in the ‘positive’ construction, where they receive a norm-related interpretation. However, these verbs can also be used in a subset of degree constructions, including the equative and comparison of superiority constructions. I return briefly to the issue of how type <et> adjectival verbs can participate semantically in degree

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1 I am very grateful to Navajo consultants and teachers Ellavina Perkins and Irene Silentman. All data not otherwise attributed are due to them and were collected at the 2008 and 2010 sessions of the Navajo Language Academy. I also thank Rajesh Bhatt, Ted Fernald, Seth Cable, Chris Potts, Malte Zimmermann, Philippe Schlenker, and audience members at the MIT Workshop on Comparatives and the 16th Workshop on the Structure and Constituency of Languages of the Americas. Errors are my own.
constructions in Section 3.2, and refer interested readers to Schwarzchild (2010) for a possible model. We predict that if these verbs are marked by the morpheme in (1), they should retain their norm-relatedness when used in degree constructions. For example, (2) should have the meaning as shown:

(2) Jane is more POS-prety than her mother.
\[ \iff \text{Jane is pretty (exceeding a contextual standard) } \& \text{Jane is prettier than her mother.} \]

However, we will see in Section 3 that only a subset of apparently POS-marked adjectival verbs are norm-related when used in degree constructions. Specifically, a POS-marked adjectival verb is norm-related in a degree construction if the same verb could have been marked with comparative aspect (CA-marked).

I propose an analysis in Section 4 based on work on English by Rett (2008). First, I will propose that the POS morpheme in Navajo is semantically vacuous and does not make reference to the contextual norm. This morpheme, POS ‘uninformative’ (POS_u), has the semantics in (3). It binds the degree (of type d) produced by applying the adjectival measure function g to an individual x. This analysis provides empirical support for Rett’s (2008) proposal for an uninformative POS morpheme in English.

(3) \[ [\text{POS}_u] = \lambda g \xi x : \exists d_\alpha g(x) = d \]

Relation to a contextual norm is due to EVAL, an unpronounced degree modifier originally proposed by Rett to account for norm-relatedness in English outside of the ‘positive’ construction. I depart from Rett’s assertional EVAL morpheme, defining it instead as in (4).

(4) \[ [\text{EVAL}] = \lambda g \xi x : g(x) > \text{STND}(g) \cdot g(x) \]

The distribution of POS and EVAL is determined on the basis of two neo-Gricean pragmatic principles, AVOID SYNONYMY and AVOID UNINFORMATIVITY. These principles are also grounded in Rett’s proposals for English. Further motivation for EVAL, AVOID SYNONYMY, and AVOID UNINFORMATIVITY is addressed in Section 5.

2 Navajo Background and Theoretical Assumptions

2.1 Theoretical Assumptions

I have previously argued that the basic unit of adjectival meaning in Navajo is the verb stem, which is a measure function of type <ed>, as in (5a) (Bogal-Allbritten 2010a). This proposal is grounded in Kennedy’s (1997) theory of adjectival meaning. Like all verb stems in Navajo, adjectival verb stems must compose with other morphology prior to predicative use. These morphemes include the comparative morpheme (5b), the POS morpheme (5c), and the morpheme MEAS, which Svenonius and Kennedy (2006) argue has the semantics in (5d). One function of MEAS is to allow an adjective to take a measure phrase (e.g., 6ft) as argument. MEAS functions essentially as a type shifter.
2.2 Degree Morphology in Navajo

Navajo adjectival verb stems can be marked with three sets of morphology: Comparative Aspect (CA), Absolute Aspect (AA), and Perfective Aspect (PERF). Each morpheme or morphophonological change associated with CA, AA, and PERF is glossed below. In later examples, CA, AA, and PERF will only be glossed once per verb. Note that the use of ‘aspect’ is from Young and Morgan (1987) and follows the terminological tradition of earlier Athabaskan grammars (e.g., Kari 1979). It references the linear proximity of these morphemes to viewpoint and situational aspectual morphology in the Athabaskan verb. It is not intended as a deeper semantic comment on a possible relation between aspectual and degree morphology.2

(6) a. ’áníłnééz
   ’áCA-níCA-3S-lCA-néézCA
   ‘He/she/it is tall/long in a relative or comparative sense.’

   b. nineez
   niAA-3S-øAA-neez
   ‘He/she/it is tall/long.’

   c. deesdoi
   3S-doïPERF
   ‘It (area) is hot.’

Translations of CA-marked verbs suggest comparison between an individual and a (unspecified) degree argument d. Bogal-Allbritten (2008, 2010a) argues that CA has the semantics of Svenonius and Kennedy’s (2006) MEAS morpheme, as in (7). A summary of syntactic evidence in favor of the transitivity of CA-marked adjectives is presented in Section 3.1 below.

(7) [[CA]] = λg_x d_d_x g(x) ≥ d

On the basis of the translations in (6b,c), I have previously analyzed these verbs as marked by a POS morpheme with a norm-related semantics, as in (8). The failure of this denotation to capture the truth conditions of AA/PERF-marked verbs in degree constructions is the focus of Sections 3 and 4.

(8) [[AA/PERF]]^c = λg_x λ_x g(x) > STND(g)

---

2 All adjectival verbs bear subject-marking morphemes (glossed 1sgS, 2sgS, 3S, etc., where third-person forms are not specified for number). Independent pronominal forms can appear outside of the verb but only with focal interpretation. Objects of postpositions are glossed as 1O, 2O, 3O, and 3’O.
2.3 Distribution of Navajo Degree Morphology

Navajo adjectival verb stems fall into two major classes based on which degree morphemes can mark them. A relatively small number of (dimension-denoting) stems can be marked by both CA and AA, as in (9). The stems in the second section of (9) can be CA-marked but lack the 'á-morpheme that typically forms part of the CA exponence. These verbs are only used in the degree question and postpositional equative constructions, exemplified in Section 5.1. Most adjectival verb stems can only take either AA or PERF. The table in (10) shows a small selection of such stems. In other words, the existence of a CA-marked stem entails the existence of an AA-marked stem, but the reverse entailment relation does not hold.

(9) Verb stems that can be both CA- and AA-marked

<table>
<thead>
<tr>
<th>Stem</th>
<th>AA-marked</th>
<th>CA-marked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide, thick</td>
<td>nitsaaz</td>
<td>'áníñtsáá’</td>
</tr>
<tr>
<td>Large, big, tall</td>
<td>nitsaa</td>
<td>'áníñtsóo</td>
</tr>
<tr>
<td>Distant, far</td>
<td>nízaad</td>
<td>'áníñzáá’</td>
</tr>
<tr>
<td>Number</td>
<td>nít’é</td>
<td>'áníñót’é</td>
</tr>
<tr>
<td>Tall</td>
<td>nineez</td>
<td>'áníñnééz</td>
</tr>
<tr>
<td>Wide</td>
<td>niteel</td>
<td>'áníñléél</td>
</tr>
<tr>
<td>Heavy</td>
<td>nidaaz</td>
<td>'áníñídaáś</td>
</tr>
<tr>
<td>Big, thick</td>
<td>nídííl</td>
<td>'áníñdííl</td>
</tr>
<tr>
<td>Big around</td>
<td>nímaal</td>
<td>'áníñlmaál</td>
</tr>
<tr>
<td>Be (in quantity)</td>
<td>lą’í (many)</td>
<td>'áníñéláá’</td>
</tr>
<tr>
<td>Be (in number)</td>
<td>niilt’é</td>
<td>'áníñél’t’é</td>
</tr>
<tr>
<td>Narrow</td>
<td>‘áltsááží</td>
<td>níłtsááží</td>
</tr>
<tr>
<td>Slender</td>
<td>‘álts’óózí</td>
<td>níłts’óózí</td>
</tr>
<tr>
<td>Small</td>
<td>’álts’ísí</td>
<td>níłts’ísí</td>
</tr>
<tr>
<td>Small</td>
<td>ýázhí</td>
<td>níłýázhí</td>
</tr>
</tbody>
</table>

(10) Verb stems that can only be AA- or PERF-marked

<table>
<thead>
<tr>
<th>AA-marked</th>
<th>PERF-marked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretty³</td>
<td>deesdoi</td>
</tr>
<tr>
<td>Durable</td>
<td>hastin</td>
</tr>
<tr>
<td>Stinky</td>
<td>neesk’á</td>
</tr>
<tr>
<td>Red</td>
<td>yistł’in</td>
</tr>
</tbody>
</table>

³ CA-marked forms for a small number of stems not denoting dimensions (‘zhóñi ‘pretty’, ‘dziil ‘strong’, wo’ ‘fast’, and tléé’ ‘wet’) are given in Young and Morgan (1987). These stems behave like those in (10), however, with respect to their norm-relatedness in degree constructions. CA-marked forms appear to be largely obsolete in the current Navajo grammar and are not in semantic competition with AA/PERF-marked forms. Speakers did not
3 AA/PERS-marked Adjectival Verbs

This section considers syntactic and semantic evidence for the meaning of AA/PERS. Syntactic arguments presented in Section 3.1 will demonstrate that CA-marked verbs are transitive, type <d,et> expressions. By contrast, AA/PERS-marked verbs are intransitive type <et> predicates. Section 3.2 will demonstrate that AA/PERS cannot be analyzed as a POS morpheme that encodes norm-relatedness, as in (1). If this were the semantics of AA/PERS, we would expect degree constructions modifying AA/PERS-marked verbs to retain a norm-related interpretation. Instead, we find that degree constructions only receive a norm-related interpretation when the verb could have been marked with CA rather than AA/PERS. The proper treatment of these facts forms the basis for the analysis in Section 4.

3.1 Evidence for Intransitivity

CA-marked adjectival verbs must be modified by a degree expression listed in (11). P refers to a postpositional pronominal marker. The form seen in (6a), 'ánilnééz ‘s/he/ít is tall/long in a relative or comparative sense’, was a citation form only. It cannot occur without a degree expression, even in a rich discourse context. By contrast, AA/PERS-marked verbs can appear without modifying degree expressions. When used on their own, AA/PERS-marked verbs have meanings as in (6b,c).

<table>
<thead>
<tr>
<th>Degree expressions in Navajo</th>
<th>Navajo</th>
<th>Translation</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Comparison of superiority</td>
<td>P-lááh</td>
<td>beyond P</td>
<td>X is more Adj. than P</td>
</tr>
<tr>
<td>b. Comparison of inferiority</td>
<td>P-’oh</td>
<td>short of P</td>
<td>X is less Adj. than P</td>
</tr>
<tr>
<td>c. Equative (locative enclitic)</td>
<td>NP-gi</td>
<td>at NP</td>
<td>X is as Adj. as P</td>
</tr>
<tr>
<td>d. Degree question</td>
<td>Haa</td>
<td>how, why</td>
<td>How Adj. is X?</td>
</tr>
<tr>
<td>e. Adverbial intensifier</td>
<td>‘ayóó</td>
<td>very</td>
<td>X is very Adj.</td>
</tr>
<tr>
<td>f. Equative (postposition)</td>
<td>P-ee</td>
<td>with P</td>
<td>X is as Adj. as P</td>
</tr>
<tr>
<td>g. Deictic that-phrase</td>
<td>ko-Adj</td>
<td>that</td>
<td>X is that Adj.</td>
</tr>
<tr>
<td>h. Prefix intensifier</td>
<td>shó-Adj</td>
<td>exceeds</td>
<td>X is surely, terribly Adj.</td>
</tr>
<tr>
<td>i. Measure phrase</td>
<td>---</td>
<td>e.g., 6ft</td>
<td>X is 6ft Adj.</td>
</tr>
</tbody>
</table>

In English, POS is typically held to be in complementary distribution with other degree morphemes, such as more/-er (e.g., Kennedy 1997). In Navajo, AA/PERS-marked adjectival verbs can be modified by a subset of degree expressions, including the equative and comparison of superiority constructions. However, a special syntactic configuration is required. As shown in (12a), an AA-marked verb nizhóí ‘nizhóí ‘it is’ and marked with –go, a subordinator and adverbializer (glossed ADV). By contrast, when

---

volunteer the CA-marked forms in free translations. In addition, speakers disagreed as to the precise morphological form – or acceptability – of the CA-marked verbs in current speech. For this reason, I place them in (10).

4 The function (syntactic or semantic) of the copula is unclear. One possibility is that it is required to give CP status to the degree expression, since –go typically – although not always – marks clausal material as adverbial.
the same degree expression modifies a CA-marked verb as in (12b), the copula and adverbializer cannot appear: the degree expression must directly precede the verb.

(12) a. Shichidi nihijií bilááh *(át’éego) nizhóni
   my-car 2sg-the.one 3O-BEYOND 3S-be-ADV AA-3S-pretty
   ‘My car is prettier than yours.’

   b. Shínaaí  bilááh (*át’éego) ’áníshdííl
     my-older.brother 3O-BEYOND 3S-be-ADV CA-1sgS-big
     ‘I'm larger than my older brother.’

I take the above observations as evidence that CA-marked verbs take degree expressions as syntactic arguments (Heim 2001). By contrast, degree expressions modifying AA/PREF-marked verbs are adverbial, as evidenced both by their optionality and the requirement that they bear an overt marker of adverbialization. This supports an analysis in which AA/PREF-marked verbs are intransitive expressions lacking a degree argument position. More discussion of syntactic, semantic, and morphological evidence for the denotations of CA and AA/PREF presented above can be found in Bogal-Allbritten (2010a).

3.2 Presence and Absence of Norm-Relatedness

As demonstrated above, the proposed denotations for CA and AA/PREF appear to account for the transitivity vs. intransitivity of CA- and AA/PREF-marked verbs. Given the denotation of AA/PREF, however, we further predict that AA/PREF-marked adjectival verbs will retain their norm-relatedness when modified by degree expressions. This prediction does not hold.

Before considering the data that demonstrate the falsity of the prediction, however, a brief discussion of modification of AA/PREF-marked verbs by degree expressions is in order. When the verb is CA-marked, the degree expression can manipulate (e.g., saturate or quantify over) the verb’s degree argument in the usual fashion. When the verb is AA/PREF-marked, there is no degree argument available for manipulation. Schwarzschild (2010) proposes a system in which adverbial degree expressions (e.g., those marked with –go) operate over the domain of degrees D, on analogy with adverbial restrictions placed on quantificational DPs and time intervals. Returning to the semantics of AA/PREF, if verbs are marked with a norm-related POS-morpheme, then the domain of degrees has already been restricted to values exceeding the contextual norm, prior to further restriction by the adverbial degree expression. Thus, maintenance of norm-relatedness in degree constructions is expected.

In fact, the presence or absence of norm-relatedness varies depending on whether the adjectival verb can only be AA/PREF-marked, or can be marked with both AA and CA. When the degree construction contains an AA/PREF-marked adjectival verb that could have been CA-marked, the contextual norm is entailed, as in (13b). By contrast, the CA-marked verb used in the same degree construction carries no such entailment (13a).
Positively Uninformative

(13) a. Shimá shideezhí yiláah 'áníshnéez,
    my-mother my-younger.sister 3'O-BEYOND CA-3S-tall
    'áko ndí doo t’áá 'álah yéigo nineez da
    but NEG both very AA-3S-tall NEG
    ‘My mother is taller than my younger sister, but they are both not very tall.’

b. Shimá shideezhí yiláah 'át’éego nineez,
    my-mother my-younger.sister 3'O-BEYOND 3S-be-ADV AA-3S-tall
    # 'áko ndí doo t’áá 'álah yéigo nineez da
    but NEG both very AA-3S-tall NEG
    ‘My mother is taller than my younger sister, #but they are both not very tall.’

PARAPHRASE OFFERED BY SPEAKER: They’re both very tall, but my mother is even taller.

The AA-marked verb nisnee ‘I am tall’ also receives a norm-related interpretation in the enclitic-marked equative construction, as in (14).

(14) a. Nigi ’áníshnéez, 'áko ndí doo yéigo nisnee da
    2sg-AT CA-1sgS-tall but NEG very AA-1sgS-tall NEG
    ‘I am as tall as you, but I am not very tall.’

b. Nigi ’át’éego nisnee, # 'áko ndí doo yéigo nisnee da
    2sg-AT 3S-be-ADV AA-1sgS-tall but NEG very AA-1sgS-tall NEG
    ‘I am tall like you, # but I am not very tall.’

However, when verbs that can only be AA/PFR-marked are used in the comparison of superiority and equative constructions, no entailment to norm-relatedness arises, as in (15).5

5 I note here that the continuation clause ‘…but they are both not very (yeigo) Adj’ was suggested by E. Perkins. A continuation of ‘…but they are both not Adj’ was judged infelicitous for all verbs in (15), as well as for AA-marked nisnee in (14). I argue that that the infelicity of simply negating the adjective does not indicate that the verbs in (15) have the same norm-related semantics as nisnee in (14). If this were the case, we would not be able to explain the contrast in acceptability of the continuation ‘…but they are both not very Adj.’

I note that a similar use of very can also be found in English. I observe that in English, (b) is more felicitous than (a) as a continuation of Sandy is taller than Sam...

a. ? …but neither one is tall.

b. ✓ but neither one is very / particularly / especially tall.

I further note that (b) does not mean that Sandy and Sam fall short of extreme tallness, but rather that they do not ‘stand out’ in terms of height, where ‘standing out’ is required of adjectives like tall when marked with norm-related POS. In this usage in both English and Navajo, very draws attention to the contextual norm and doesn’t function as a true intensifier. However, I leave more detailed analysis of the function and distribution of non-intensifying very to future work.
(15) a. Shideezhi shádi yilááh ‘át’éego nizhóní, my-younger.sister my-older.sister 3’O-BEYOND 3S-be-ADV AA-3S-pretty
‘áko ndi doo t’áá ‘álah yéigo nizhóní da
but NEG both very AA-3S-pretty NEG
‘My younger sister is prettier than my older sister, but they are both not very pretty.’

b. Shikee’ níkee’ yilááh ‘át’éego dits’id,
my-shoe my-shoe 3’O-BEYOND 3S-be-ADV AA-3S-durable,
‘áko ndi doo t’áá ‘álah yéigo dits’id da
but NEG both very AA-3S-durable NEG
‘My shoes are more durable than yours, but they [pairs] are both not very durable.’

c. Tacomadi kééhast’į́gí yilááh ‘át’éego deesdoi,
Tacoma-AT 2sgS-reside-the.one 3’O-BEYOND 3S-be-ADV PERF-3S-hot
‘áko ndi doo t’áá ‘álah yéigo deesdoi da
but NEG both very PERF-3S-hot NEG
‘Tacoma is hotter than where you live, but they are both not very hot.’

4 Uninformative POS_u

In this section, I adapt Rett’s (2008) proposal for an uninformative POS morpheme, which I will call POS_u. The morpheme POS_u binds the degree produced by application of the measure function (verb stem) to the subject but does not relate it to the contextual standard of comparison. POS_u is semantically vacuous, serving only to type shift the verb stem to a property of individuals.

\[
(16) [[\text{POS}_u]] = \lambda g. \lambda x_d. \exists d: g(x) = d
\]

For Rett (2008), POS_u is a piece of a larger program to displace norm-relatedness from the POS morpheme and instead locate it in a (freely insertable) degree modifier EVAL. The morpheme EVAL restricts the domain of degrees to those exceeding a contextual standard of comparison. EVAL can contribute norm-relatedness both to the ‘positive’ construction as well as to other degree constructions. The denotation of EVAL in (17) differs from Rett’s in taking norm-relatedness to be presuppositional rather than assertional. I return to one implication of this departure in Section 4.1 and discuss it at greater length in Section 5.1.

\[
(17) [[\text{EVAL}]] = \lambda g. \lambda x : g(x) > \text{STND}(g) . g(x)
\]

The distribution of EVAL and POS_u is determined by two neo-Gricean pragmatic principles, AVOID UNINFORMATIVITY and AVOID SYNONYMY. I present the two principles in the following sections. In Section 5, I return to finer points of their implementation.

\[\text{Rett’s version of POS-uninformative is not explicitly defined but would, by her assumptions, take a type } <d,et> \text{ adjective as its first argument.}\]
4.1 Avoid Uninformativity

As noted above, POSu and EVAL are both proposed by Rett based on English data. However, English is not an ideal testing ground for POSu since English POS-marked adjectives only occur in the ‘positive’ construction. In this environment, a POSu-marked adjective would make a trivial assertion, as in (18). All individuals have some degree of height.

(18) \( \exists d, \delta_{\text{tall}}(\text{John}) = d \)

‘John has some degree of height \( d \)’

Rett concludes that there is a pragmatic principle requiring assertions to be non-trivial. I will refer to this principle as AVOID UNINFORMATIVITY and define it as in (19).

(19) AVOID UNINFORMATIVITY: Avoid a derivation producing an expression with trivial content or content that can be presumed from general knowledge.

Navajo, in contrast with English, permits POS-marked adjectival verbs in degree constructions. Given that we have seen that these constructions do not necessarily have norm-related interpretations (Section 3.2), Navajo presents stronger empirical support for POSu. As in English, the principle of AVOID UNINFORMATIVITY applies in Navajo to rule out occurrences of POSu where more information is not provided about \( d \), e.g., by a degree expression (20) or EVAL (21). If the POSu-marked adjectival verb were modified by neither EVAL nor a degree expression, as in (21c), AVOID UNINFORMATIVITY would be violated. The LF of (21c) would have an interpretation similar to (18): My mother has a degree of attractiveness \( d \).

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

b. My younger sister is \([\text{DegP POSu [AP pretty]}][\text{PP BEYOND my older sister}]\)

(21) a. Shimá nizhóní
    my-mother AA-3S-pretty
    ‘My mother is pretty (exceeding a standard of comparison).’

b. My mother is \([\text{DegP POSu [EVAL [AP pretty]]}]\)

c. My mother is \([\text{DegP POSu [AP pretty]}]\)

The reader may note that a combination of POSu and EVAL does not actually make an informational or non-trivial assertion. This fact is made more semantically explicit in (22). All of

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7 I assume that pretty, like tall, projects an open scale such that it is not informative to say that there exists a degree \( d \) of prettiness: all individuals can be presumed to have some degree of prettiness, even if it is a very small degree. I return to the issue of how POSu interacts with scale structure in Section 5.2.
the meaning relating ‘my mother’ to a standard of comparison is contained in the presupposition introduced by \textit{EVAL}. I return to the issue of the presuppositional nature of \textit{EVAL} in Section 5.1.

\begin{equation}
\exists d : \delta_{\text{tall}}(\text{my mother’}) > \text{STND}(\text{pretty’}) . \delta_{\text{tall}}(\text{my mother’}) = d
\end{equation}

\begin{align*}
\text{DP} & \quad \text{DegP} \\
\text{my mother} & \quad \lambda x \exists d : \delta_{\text{tall}}(x) > \text{STND}(\text{pretty’}) . \delta_{\text{tall}}(x) = d \\
\text{Deg} & \quad \lambda z : \delta_{\text{tall}}(z) > \text{STND}(\text{pretty’}) . \delta_{\text{tall}}(z)
\end{align*}

\begin{equation}
\lambda y . \delta_{\text{tall}}(y) \quad \text{pretty (-zhóni)}
\end{equation}

4.2 Avoid Synonymy

The story presented so far predicts that AA\textit{/PERF}-marked adjectival verbs will never be necessarily norm-related in degree constructions. Recall from Section 3.2 that this is not the case for the small number of adjectival verbs that can be marked with both AA and CA. I argue that a general pragmatic principle of \textbf{A\textit{VOID} SYNONYMY} can be employed to explain these facts.

\begin{equation}
\text{AVOID SYNONYMY: Avoid a derivation producing an expression that has the same truth conditions as a competing derivation containing a less marked adjective.}
\end{equation}

Rett (2008) also employs a principle like \textbf{A\textit{VOID} SYNONYMY} to account for the distribution of \textit{EVAL} in English. Following Rett’s assumptions, \textit{EVAL} appears above a bare adjective (either \texttt{<d,et>} or \texttt{<ed>}, depending on theoretical assumptions). While \textit{EVAL} can occur in any degree construction, it must occur in a given construction where there exists a competing – but less marked – construction that would otherwise have the same truth conditions. In English, given a pair of positive and negative antonyms (e.g., \textit{tall vs. short}), the negative member is marked relative to the positive antonym. I return the concept of markedness in Section 5.3.

We can illustrate the distribution of \textit{EVAL} with discussion from Rett (2008). In (24a), \textit{EVAL} is optional. If it does not appear, then the interpretation is that the height of Sandy is equal to the height of Betty. When the more ‘marked’ negative antonym \textit{short} is used in (24b), \textit{EVAL} is obligatory, such that Sandy is required to not only have the same height as Betty but also be short relative to a contextual norm. If \textit{EVAL} did not appear in (24b), the interpretation would be identical to the interpretation of (24a): Sandy and Betty are equal in height. The LF structures are simplified, overlooking clausal structure in the \textit{as}-clause.

\begin{equation}
\text{(24) a. Sandy is as tall as Betty.}\\
\text{Sandy is } [\text{DegP as } [\text{AP tall}] [\text{PP as Betty }]]
\end{equation}

\begin{equation}
\text{b. Sandy is as short as Betty.}\\
\text{Sandy is } [\text{DegP as } [\text{EVAL [AP short]}] [\text{PP as Betty }]]
\end{equation}

Rett (2008) also discusses positive and negative adjectives used in degree questions. While \textit{how tall is Sandy?} can be used regardless of Sandy’s height, \textit{how short is Sandy?} presupposes that Sandy is short, in excess of a contextual norm.

Returning to Navajo, I take constructions with CA- and AA-marked verbs to be in competition, like positive and negative antonyms are in English. As in (25a), CA-marked verbs
do not obligatorily receive a norm-related interpretation because EVAL can – but does not have to – appear between the verb stem and CA. The simplified LF without EVAL is shown in (25b).

(25) a. Shimá shideezhi yiláah ’áníñéez,
    my-mother my-younger.sister 3’O-BEYOND CA-3S-tall
    ’áko ndi doo t’áá ’álah yeígo nineez da.
    but NEG both very AA-3S-tall NEG
    ‘My mother is taller than my younger sister, but they are both not very tall.’

b. My mother is [DegP CA [AP tall] [PP BEYOND my younger sister ] ]

By contrast, when POSu-marked verbs with CA-marked counterparts are used in degree constructions, they obligatorily receive a norm-related interpretation. When they compete with CA-marked verbs, POS-marked verbs are ‘marked,’ like negative antonyms were in English. As a result, (26) obligatorily contains EVAL between the adjective and the POSu morpheme. If EVAL were not present, the interpretation of (26a) would be too close to the interpretation of (25a).

(26) a. Shimá shideezhi yiláah ’át’éego nineez,
    my-mother my-younger.sister 3’O-BEYOND 3S-be-ADV AA-3S-tall
    # ’áko ndi doo t’áá ’álah yeígo nineez da.
    but NEG both very AA-3S-tall NEG
    ‘My mother is taller than my younger sister, #but they are both not very tall.’

b. My mother is [DegP POSu [ EVAL [AP tall ] ] [PP BEYOND my younger sister ] ]

5 Further Motivation and Challenges for the Account

In this section, I first consider another set of verbs whose truth conditions provide additional motivation for EVAL in Navajo. I then discuss questions that arise about the implementation and characteristics of AVOID UNINFORMATIVITY and AVOID SYNONYMY.

5.1 Motivating and Defining EVAL in Navajo

So far, we have seen one environment in which EVAL is used due to the principle of AVOID SYNONYMY, where POSu-marked forms are in competition with CA-marked forms. There is further motivation for EVAL from the set of verb stems denoting negative dimensions (slender, short, etc.) that can take CA. When marked with CA, verb stems denoting positive dimensions do not have a norm-related interpretation. For example, (27a) can be used to question the length of any type of object. By contrast, (27b) can only be used to question the width of objects known from context to be slender or thin, e.g., a belt or cut of meat.

(27) a. Haaniñééez
    WH-CA-3S-tall
    ‘How long is s/he/it?’ (Possible answers: 4ft, 6ft, ‘very/not very tall’)

b. My mother is [DegP POSu [ EVAL [AP tall ] ] [PP BEYOND my younger sister ] ]
b. Haanîłtsʼóózí

\textit{WH-CA-3S-slim}

ʻHow slim is s/he/it?ʼ (Possible answers: 3in, ‘very slimʼ)

The postpositional equative construction also occurs with \textit{CA}–marked verbs denoting negative dimensions. When the verb denotes a negative dimension (28), both individuals under comparison must be slender with respect to a contextual norm. The \textit{WH-} and equative degree constructions are those for which Rett (2008) originally developed her \textit{EVAL} account. These are the constructions whose truth conditions must be differentiated when they contain positive vs. negative adjectives. In this domain, the distribution of \textit{EVAL} in Navajo mirrors the distribution of \textit{EVAL} in English.\textsuperscript{8}

(28) Shimá sheenîłtsʼóózí

\textit{my-mother 1sgO-with-CA-3S-slim}

ʻMy mother is as slim as I amʼ (we are both slender)

At this point, we may now return to a discussion of the semantics of \textit{EVAL}. As noted above, I have defined \textit{EVAL} such that norm-relatedness is presuppositional rather than assertional. For degree constructions in which \textit{EVAL} is licensed, this is correct. As Rett notes for English, sequences like (29a) are infelicitous. By contrast, norm-relatedness is assertional in the ‘positive’ construction (29b).

(29) a. 1: Amy is as short as Betty.

2: #No, sheʼs not short. Sheʼs actually taller than the average height.

b. 1: Amy is short.

2: No, sheʼs below the average height for women her age. \textsuperscript{(Rett 2008: 220)}

In light of the assertional nature of norm-relatedness in the ‘positive’ construction, the presuppositional semantics of \textit{EVAL} may be called into question.\textsuperscript{9} I first note that the analysis presented here is intuitively more parsimonious than other approaches that could be imagined. It avoids adoption of different semantic forms of morphemes that are not differentiated in terms of morphological form. For instance, we could conceive of an analysis that adopts \textit{POS₀} plus two \textit{EVAL} morphemes, one presuppositional and one assertional. We could also imagine an analysis with a single \textit{EVAL} morpheme (presuppositional) and two \textit{POS} morphemes, \textit{POS₀} and \textit{POS₁} ‘informative.’ The \textit{POSᵢ} morpheme was discussed in the original version of this paper (Bogal-Allbritten 2010b) and had the norm-related semantics typically attributed to the \textit{POS} morpheme, e.g., (1). While \textit{EVAL} can still occur in degree constructions, \textit{POSᵢ} will occur only on verbs in the ‘positive’ construction. Neither of these approaches is as parsimonious as the present approach.

The division between presuppositional and assertional components of meaning is a question that deserves much further study. We can note that the ‘positive’ construction in Navajo (e.g.,

\textsuperscript{8} These are apparently the only constructions in which \textit{CA}–marked adjectival verbs denoting negative dimensions can occur.

\textsuperscript{9} Rett (2008) avoids this particular issue by taking \textit{EVAL} to be assertional and deriving the presuppositional interpretation found in degree constructions by making assumptions about the semantics of degree quantifiers and presupposing non-empty sets of degrees. I leave detailed comparison of the two approaches to \textit{EVAL} to future work.
(21)) is associated with both a contentful presuppositional component (from EVAL) and vacuous assertional component (from POS_u), making it a potential member of the class of multidimensional expressions (Karttunen and Peters 1976, Potts 2005). We can ask whether, under particular semantic circumstances, the presuppositional component of an expression’s meaning may replace the assertional component as the part of meaning that can be directly questioned or disputed. These ‘semantic circumstances’ may be a superset of the conditions encompassed by AVOID UNINFORMATIVITY, including cases where the assertional component is tautological or uninformative. Under these circumstances, the listener may move from the assertion to the next ‘layer’ of meaning, the presupposition. I leave to future work elaboration of this part of the analysis and its implications.

5.2 Elaborating on AVOID UNINFORMATIVITY

Several questions arise with respect to the principle of AVOID UNINFORMATIVITY. First, we must ask what kinds of derivations contain ‘trivial’ content or content ‘that can be presumed from general knowledge.’ We have seen that POS_u-marked verbs are ruled out by this principle when they are not modified by a degree expression or EVAL. However, we might expect that AVOID UNINFORMATIVITY applies more generally to rule out constructions that do not contain POS_u but which still fail to make a non-trivial contribution. One such trivial construction is represented by the sentences in (30). When read with neutral intonation, both sentences are infelicitous. They appear to be ruled out by AVOID UNINFORMATIVITY.¹⁰

(30) a. #The person who is running is running.
   b. #The long cat is long.

Focusing on (30b), let us assume that both instances of long make reference to a contextual norm of length (i.e., neither instance of long is POS_u-marked). Nevertheless, the predicative instance of long fails to make a contribution that is not already part of the general knowledge state, given the earlier attributive use of long. In other words, if we know that the cat is a long cat, there is no need to mention that it is long again. The only way to salvage (30a,b) is to place intonational emphasis on the second instances of running and long, respectively. Such special intonation seems to be tantamount to modifying the adjective with very or really.

Second, if AVOID UNINFORMATIVITY applies to rule out unmodified POS_u-marked adjectival verbs because they make a trivial contribution, we might expect that they would be permitted given a special context in which the vacuous meaning of POS_u makes a non-trivial contribution. Rett (2008) discusses one possible context but the results are inconclusive.

If we cannot look to special contexts for licensing of unmodified POS_u, we can instead look to adjectives whose scales are inherently informative. The examples from Navajo and English discussed thus far have contained relative adjectives, which project open scales (Kennedy and McNally 2005).¹¹ However, there exists a second class of adjectives – absolute adjectives – which project closed scales that are bounded on either their lower and/or upper ends. For example, open projects a scale with a minimum element (a non-zero degree or interval of aperture) while closed projects a scale with a maximum element (a maximal degree or interval of closure) (Kennedy and McNally 2005, Rotstein and Winter 2004).

¹⁰ Thanks to Malte Zimmermann for suggesting this class of examples.
¹¹ The exact boundaries of adjectival classes in Navajo as they compare to typologies presented in Kennedy and McNally (2005) is a topic for future work.
When POS_u marks a minimum standard adjective such as open, d must be greater than the minimum element on the scale. Although nothing else is known about d, this is as much information as is contributed by composition of the traditional POS morpheme (1) with a minimum standard adjective, given the assumptions about POS and STND(g) in Kennedy (2007). To see why, let us consider the interaction of scale structure with the ‘positive’ construction.

Kennedy (2007) assumes that the POS morpheme, as defined in (1), can pick out either a scale-determined standard (i.e., a minimum or maximum element) or a context-determined standard: either is sufficient for an individual to ‘stand out’ with respect to some property. Kennedy argues that when POS marks an absolute adjective as in (31), it picks out the minimum or maximum element rather than determining the truth of the proposition based on other objects – and their degree of aperture or closure – in the context.

(31) a. The door is open.
    b. The door is closed.

Kennedy (2007) further argues that this decision is based on the so-called Principle of Interpretive Economy. Informally, when deciding between an agreed-upon meaning for a word (e.g., meaning that references scale structure) and a context-sensitive meaning, it is more efficient in terms of processing cost to choose the former. Applied to absolute adjectives, selection of a scale-determined standard (e.g., maximum or minimum element) by POS will be preferred to a context-determined standard since the latter is subject to change across speakers and contexts.

In light of the Principle of Interpretive Economy, EVAL and the POS_u morpheme may be put to use, particularly for minimum standard adjectives used in the ‘positive’ construction. Recall from above that when POS_u marks a minimum standard absolute adjective like open, the result is informative: d is greater than (or equal to) the minimum degree of aperture. Let us also assume, contra Kennedy (2007), that STND(g) can only pick out a contextually determined standard, not a scale-determined standard. Let us further assume that insertion of EVAL incurs additional processing costs through projection of additional structure. As a result, not only will a minimum standard absolute adjective (e.g., open) be informative when marked by POS_u, but this interpretation will be preferable to a contextually determined standard. In summary, an analysis that includes EVAL and POS_u captures (at least) some of the generalizations expressed by the Principle of Interpretive Economy.12

5.3 Elaborating on AVOID SYNONYMY

The primary challenge to AVOID SYNONYMY is determining what it means for one set of adjectives to be ‘marked’ relative to some competing set. I argued in Section 4.2 that if a POS_u-marked adjectival verb and its CA-marked counterpart can be used in the same degree construction, then EVAL is obligatorily inserted below POS_u to yield a construction with truth conditions distinct from the construction containing the CA-marked verb.

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12 Rett (2008) also considers how EVAL might interact with scale structure, but she considers its use with adjectives in degree constructions rather than those used in the ‘positive’ construction. She concludes that for both minimum standard (open) and maximum standard adjectives (closed), insertion of EVAL will not alter the truth conditions. She seems to follow Kennedy (2007) in assuming that STND(g) can pick out either a scale-determined or contextual standard.
Why might CA-marked verbs be less ‘marked’ than POS_u-marked verbs? One possibility is that the syntax and semantics of modification of CA-marked verbs is ‘simpler’ than modification of POS_u-marked verbs. Syntactically, degree expressions modifying POS_u-marked verbs must be introduced by the copula and marked by the adverbializer –go. In contrast, degree expressions can modify CA-marked verbs directly. This syntactic complexity may be indicative of greater semantic complexity. Rather than modify the degree argument directly, as is possible for CA-marked verbs, degree expressions manipulate and restrict the domain of degrees associated with a POS_u-marked verb (Schwarzschild 2010).

Rett (2008) also makes reference to a principle like AVOID SYNONYMITY that takes into account the relative markedness of two competing forms. In English, negative adjectives are marked given their more limited distribution (e.g., *John is 6ft short). Furthermore, as Rett notes, there are several proposals for the markedness of negative adjectives that correlate semantic markedness with morphological and syntactic markedness (Rullmann 1995; Heim 2006, 2008; Büring 2007). Further work is necessary to determine how, if at all, the markedness exhibited by negative adjectives in English (and Navajo) relates to the markedness that characterizes POS_u-marked Navajo adjectival verbs in competition with CA-marked verbs.

6 Conclusions

This paper has proposed a new semantics for the POS morpheme in Navajo, based on work on English by Rett (2008). Rather than encode norm-relatedness, POS_u (‘POS unininformative’) binds the degree associated with an adjectival verb. The distribution of POS_u is determined by two principles, AVOID SYNONYMITY and AVOID UNINFORMATIVITY. Norm-relatedness arises as a result of the two principles. In order to satisfy AVOID UNINFORMATIVITY, the degree modifier EVAL is obligatorily inserted below POS_u to give rise to a norm-related interpretation of adjectival verbs not further modified by degree expressions. In order to satisfy AVOID SYNONYMITY, EVAL is obligatorily inserted below POS_u where either a POS_u- or CA-marked adjectival verb can be used in the same degree construction, such that the truth conditions must be distinguished.

Future work will seek a deeper understanding of the concepts of ‘markedness’ and ‘uninformativity’ with respect to adjectival semantics. Better models of these concepts will lead to stronger predictions about the distribution of POS_u and EVAL, both in Navajo and cross-linguistically. Beyond the domain of adjectives, the analysis also brings up larger questions of the relation between assertional and presuppositional content. If a single node is associated with both components of meaning, can a general principle such as AVOID UNINFORMATIVITY influence which component is treated as ‘at issue’? Study of these issues in the domain of adjectives may prove informative to their study in other semantic domains.

References


