Attributive adjectives in Tswefap: Vague predicates in a language with degrees[1]

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Abstract. This paper discusses the semantics of gradable verbs and adjectives in Tswefap (Narrow Grassfields; Cameroon), an 'exceed comparative' language. I use diagnostics proposed by Beck et al. (2009) to probe the semantic type of these gradable predicates. Interestingly, the diagnostics diverge for the two categories of gradable expressions. I argue that Tswefap gradable verbs have degree arguments, while gradable adjectives are vague ⟨e,t⟩ predicates. The fact that gradable predicates in Tswefap differ in semantic type systematically according to their syntactic category raises interesting questions for debates regarding the uniformity of the encoding of gradability across expressions of different categories. These facts suggest that even in a language with ⟨d,⟨e,t⟩⟩ predicates, gradability need not be encoded via degree arguments for all gradable expressions.

Keywords: gradability, comparison, degree semantics, Tswefap, semantic variation, semantic fieldwork, syntax/semantics interface, lexical categories.

1. Introduction

The crosslinguistic study of comparison and gradability has revealed a great deal of variation in the semantics of these expressions. One particularly fundamental way that languages have been argued to differ is in the semantic type of gradable expressions themselves. As a result of crosslinguistic comparative work, Beck et al. (2009) propose that languages can differ in whether their gradable predicates utilize degree arguments, arguments of type d. For languages that have a positive setting for the Degree Semantics Parameter (DSP), such as English, gradable predicates are of type ⟨d,⟨e,t⟩⟩ (abstracting away from potential event arguments for gradable verbs). For languages that have a negative setting for the parameter, gradable predicates are instead of type ⟨e,t⟩. Beck et al. (2009) argue that Motu (Austronesian; Papua New Guinea) is an example of a language that lacks degree arguments in this way. In subsequent work, other authors have argued that languages can indeed lack ⟨d,⟨e,t⟩⟩ predicates. For example, Bochnak (2015) argues that Washo (isolate; USA) gradable predicates are of type ⟨e,t⟩ and Deal and Hohaus (this volume) argue for a similar treatment of Nez Perce (Sahaptian; USA).

In this paper I argue upon the basis of novel data from Tswefap (Narrow Grassfields; Cameroon) that even within a single language there can be variation in whether basic lexical gradable predicates are of type ⟨d,⟨e,t⟩⟩ or simply of type ⟨e,t⟩. Specifically, using diagnostics developed by Beck et al. (2009), I argue that gradable verbs in Tswefap can best be analyzed as taking degree arguments while gradable adjectives are most straightforwardly analyzable as vague ⟨e,t⟩ predicates. Thus even if a language utilizes degree arguments for some gradable predicates, it may not make use of them for all gradable predicates. Additionally, it appears that, at least in

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Tswefap, this choice is made along the lines of syntactic categories. Therefore, the Tswefap patterns raise interesting questions for the crosslinguistic study of the encoding of gradability across syntactic categories, suggesting that gradability need not be encoded in the same way across all categories in a single language.

The structure of the paper is as follows. In Section 2 I introduce the distinction between gradable verbs and adjectives in Tswefap. I argue that gradable verbs show evidence for degree arguments and abstraction over degrees in Section 3. For gradable adjectives, on the other hand, I present data in Section 4 that demonstrate that the same diagnostics used for verbs do not yield similar results. Instead, the behavior of adjectives can be more simply accounted for if they are ⟨e,t⟩ predicates. In Section 5 I offer a comparison to Yoruba (Benue-Congo; Nigeria), a language which displays a similar pattern in terms of gradable verbs and adjectives (Beck et al., 2009; Howell, 2013). Finally, I offer concluding remarks in Section 6.

2. Gradable predicates of two syntactic categories

Property concept terms in Tswefap can syntactically be expressed as adjectives or verbs. There are often adjectives and verbs with similar meanings, but the adjectives are not clearly morphologically derived from the verbs, nor vice versa. Additionally, adjectives and verbs are not freely interchangeable. This is demonstrated with the adjective *mezhwe* 'small' and the verb *khoh* 'be small' in (1) and (2).[2]

(1) a. [**Mezhwe** mi] a tseuk nkumnkum.
small person FACT eat fufu
'The small person ate fufu.'

b. * [Mi yoh] a **mezhwe**.
person DEM FACT small
Intended: 'That person is small.'

(2) a. [Mi yoh] a **khoh**.
person DEM FACT be.small
'That person is small.'

b. * [**Khoh** mi] a tseuk nkumnkum.
be.small person FACT eat fufu
Intended: 'The small person ate fufu.'

In (1a), we see that adjective *mezhwe* can appear as an attributive adjective within the noun phrase. In (2a), we see that the verb *khoh* can appear as the main predicate of the sentence, occurring with factative aspect marker *a* just like the verb *tseuk* 'eat' in (1a). In (1b), we see that it is ungrammatical to use the adjective *mezhwe* as the predicate. Likewise, it is ungrammatical to use the verb *khoh* as an attributive adjective, as demonstrated in (2b). Note, too, that the two property concept terms, despite having similar meanings, are not morphophonologically related in a straightforward way.

[2]I use the following glossing conventions throughout: 3 = third person, ASP = aspect, CNS = consecutive verb marker, DEM = demonstrative, FACT = factative aspect, INF = infinitive, LNK = linker, NEG = negation, Q = quantifier, SG = singular, STD = standard.

There is a relatively small set of adjectives in Tswefap that have the distribution of *mezhwe* in (1a). These include terms related to size, such as *sesege* 'tall' and *mbu'* 'big', and color, like *sese* 'black' and *fefe* 'white'. Gradable verbs are more common and there are some gradable verbs (such as *zhi* 'be rich') which do not appear to correspond to an adjective with a similar meaning. In contrast, there seem to be no gradable adjectives which lack a corresponding verb. The focus of the remainder of the paper will be on the semantic types of these two classes of predicates.

3. Gradable verbs and degree arguments

As mentioned in the introduction, Beck et al. (2009) propose that languages can differ in whether their gradable predicates take degree arguments. This is their Degree Semantics Parameter (DSP), given in (3).

(3) Degree Semantics Parameter (DSP):
A language {does/does not} have gradable predicates (type ⟨d,⟨e,t⟩⟩ and related), i.e. lexical items that introduce degree arguments. (Beck et al., 2009: 19)

They also propose that languages with a positive setting for the DSP can differ in whether or not they allow abstraction over degree arguments. This is their Degree Abstraction Parameter (DAP), given in (4).[3]

(4) Degree Abstraction Parameter (DAP):
A language {does/does not} have binding of degree variables in the syntax.
(Beck et al., 2009: 14)

They propose several diagnostics for distinguishing whether a language has a positive or negative setting for these parameters. In this section, I will discuss these diagnostics as they apply to gradable verbs in Tswefap. I will demonstrate that based upon evidence from all of the diagnostics, Tswefap can be analyzed as having a positive setting for both the DSP and DAP. Its gradable verbs take degree arguments, and the language allows abstraction over variables of type d. In order to understand the data related to these diagnostics, I will first provide a brief overview of the structure of comparatives in Tswefap, since the comparative figures in several of the constructions used to diagnose the parameter settings.

3.1. The structure of Tswefap comparatives

Tswefap utilizes an 'exceed comparative' in the typology of Stassen (1985). This means that the comparative morpheme is a verb, meaning something like 'exceed' or 'pass'. In Tswefap, the comparative morpheme is the verb *tchege*, which can also be used in non-comparative contexts to simply mean 'pass' or 'overtake'. In comparatives, *tchege* typically appears as the final verb in a serial verb construction. The most common strategy for forming a comparative is for the gradable predicate to appear as the first verb in the serial verb construction, followed by the comparative verb *tchege*. *Tchege* is a transitive verb, and the standard of comparison is introduced as its object. This strategy is illustrated in (5) and (6). I will refer to this as

[3]Note that this parameter was originally proposed by Beck et al. (2004).

the simple comparative. Note that, as is typical for serial verb constructions, tense and aspect information is indicated once at the beginning of the string of verbs. All non-initial verbs in a serial verb construction (including *tchege*) surface with the consecutive marker *n-*.

(5) Nkwehnwoh a seh n-tchege Chimi.
Kuamo FACT be.tall CNS-pass Chimi
'Kuamo is taller than Chimi.'

(6) Chimi a voh n-tchege Nkwehnwoh.
Chimi FACT be.short CNS-pass Kuamo
'Chimi is shorter than Kuamo.'

In (5), we see that the gradable verb *seh* 'be tall' appears as the first verb in the serial verb construction, while *tchege* follows it. In (6), the gradable verb *voh* 'be short' is now the initial verb in the serial verb construction. This demonstrates that both the "positive" and "negative" members of pairs like *tall/short* can be used in this type of comparative construction (see Seuren, 1978; Kennedy, 1997; Sánchez Valencia, 1998, a.o., for a discussion of polarity in gradable predicates).

In addition to this comparative construction, Twsefap also allows a comparative to be formed with the verb *loh* 'take' and the comparative verb *tchege*. In this construction, the object of the transitive verb *loh* is an infinitival form of the gradable verb. This construction is illustrated in (7) and (8), once again shown with positive and negative members of an antonymous pair of gradable verbs. I will refer to this construction as the *loh* comparative.

(7) Chimi a loh mbege seh n-tchege Nkwehnwoh.
Chimi FACT take INF be.tall CNS-pass Kuamo
'Chimi is taller than Kuamo.'

(8) Chimi a loh mbege voh n-tchege Nkwehnwoh.
Chimi FACT take INF be.short CNS-pass Kuamo
'Chimi is shorter than Kuamo.'

In (7), we see the verb *loh*, which takes as its object the gradable predicate *seh* 'be tall' (which occurs with the infinitival marker *mbege*). The second verb in the serial verb construction is once again the comparative morpheme *tchege*. In (8), we see the same construction, but with *voh* 'be short' as the gradable predicate.

With both of these syntactic strategies for the expression of the comparative it is possible to include a measure phrase differential. The measure phrase can be introduced in a PP that occurs after the standard of comparison, as seen in (9) for the simple comparative and (10) with the *loh* comparative. With the simple comparative it is also possible for the measure phrase PP to intervene between the gradable predicate and the comparative verb *tchege*, as demonstrated in (11).

(9) Nkwehnwoh a seh n-tchege Chimi **pu ta' tswe**.
Kuamo FACT be.tall CNS-pass Chimi with one head
'Kuamo is one head taller than Chimi.'

(10) Chimi a loh mbege seh n-tchege Nkwehnwoh **pu ta' tswe**.
Chimi FACT take INF be.tall CNS-pass Kuamo with one head
'Chimi is one head taller than Kuamo.'

(11) Chimi a seh **pu ta' tswe** n-tchege Nkwehnwoh.
Chimi FACT be.tall with one head CNS-pass Kuamo
'Chimi is one head taller than Kuamo.'

In (9) the gradable verb *seh* 'be tall' and the comparative verb *tchege* form a serial verb construction. The measure phrase differential *ta' tswe* 'one head' is introduced by the preposition *pu* 'with' after the standard of comparison. In (10), the infinitival form of the gradable verb *seh* 'be tall' is the object of the verb *loh* 'take', which forms a serial verb construction with the comparative verb *tchege*. Once again, the measure phrase *ta' tswe* 'one head' is introduced in a PP after the standard of comparison. Finally, in (11), we see another instance of a serial verb construction involving the gradable verb *seh* 'be tall' and the comparative *tchege*, but the measure phrase PP *pu ta' tswe* 'with one head' now appears between the two verbs.

Finally, it is worth noting that, because comparatives are formed with serial verb constructions, there is not a limit of two verbs. This results in another strategy for the inclusion of a measure phrase differential. The first verb of the serial verb construction can be *loh* 'take' and the measure phrase can occur as the object of this verb. The gradable verb and the comparative verb *tchege* can then appear as the second and third verbs in the serial verb construction. This construction is illustrated in (12).

(12) Chimi a loh ta' tswe seh n-tchege Nkwehnwoh.
Chimi FACT take one head be.tall CNS-pass Kuamo
'Chimi is one head taller than Kuamo.'

Here the transitive verb *loh* takes as its object the measure phrase *ta' tswe* 'one head'. The second verb in the serial verb construction is the gradable verb *seh* 'be tall'.[4] The third and final verb is the comparative verb *tchege*.[5]

[4]Typically all non-initial verbs in a serial verb construction appear with the consecutive marker *n-*. However, due to phonotactic constraints, this prefix cannot surface before *seh* because of the initial [s].

[5]It is also possible to use a measure phrase differential with the comparative verb *tchege* to express a comparative even without the use of an overt gradable predicate. Instead, the measure phrase serves to indicate the scale of comparison. There are two constructions where this is possible. The first involves a serial verb construction with *loh* and *tchege*, as seen previously. Here, the measure phrase occurs as the object of *loh*, as in (i) and (ii).

(i) Chimi a loh ta' tswe n-tchege Nkwehnwoh.
Chimi FACT take one head CNS-pass Kuamo
'Chimi is one head taller than Kuamo.'

3.2. Evidence for degree arguments

With this understanding of the morphosyntax of comparatives in Tswefap, we turn to a discussion of the diagnostics used to identify whether the gradable predicates of a given language take degree arguments. Beck et al. (2009) identify two such diagnostics. The first involves the availability of measure phrase differentials. As was demonstrated in examples (9)-(12) above, Tswefap does allow measure phrase differentials to occur in comparative constructions with gradable verbs. The second diagnostic proposed by Beck et al. (2009) is the acceptability of comparison with a degree. If a language allows a degree-denoting expression to be the standard of comparison, this is evidence that its gradable predicates take type d arguments. We see in (13) that comparison with a degree is possible in Tswefap.

(13) Chimi a seh n-tchege ta' meyteh.
Chimi FACT be.tall CNS-pass one meter
'Chimi is taller than one meter.'

In (13) we see a simple comparative involving the gradable verb *seh* 'be tall'. Here, the standard of comparison that appears after *tchege* does not denote an individual, as has been seen in the previous examples. Instead, it is the degree-denoting expression *ta' meyteh* 'one meter'.

The evidence from measure phrase differentials and comparison with a degree suggests that Tswefap has a positive setting for the DSP; its gradable verbs have degree arguments. The positive setting for this parameter aligns Tswefap with other languages that utilize similar exceed comparatives, such as Luganda (Bantu; Uganda; Bochnak, 2018), Mooré (Gur; Burkina Faso; Beck et al., 2009), and Yoruba (Beck et al., 2009; Howell, 2013).

(ii) Chimi a loh ngu' toh n-tchege Nkwehnwoh.
Chimi FACT take year five CNS-pass Kuamo
'Chimi is five years older than Kuamo.'

In (i), the measure phrase *ta' tswe* 'one head' appears as the object of *loh*. It indicates that the scale of comparison is height. Interestingly, while the exceed comparative can be used for both a 'taller' and 'shorter' meaning with an overt gradable predicate, without a gradable predicate only the positive meaning (i.e. 'taller') is possible. In (ii), the verb *loh* takes as its object the measure phrase *ngu' toh* 'five years', indicating that the scale of comparison is age.

The second comparative construction that lacks an overt gradable predicate involves only the verb *tchege* and a measure phrase introduced in a PP. This construction is illustrated in (iii) and (iv).

(iii) Chimi a tchege Nkwehnwoh pu ta' meyteh.
Chimi FACT pass Kuamo with one meter
'Chimi is one meter taller than Kuamo.'

(iv) Chimi a tchege Nkwehnwoh pu ngu' toh.
Chimi FACT pass Kuamo with year five
'Chimi is five years older than Kuamo.'

In (iii), the comparative verb *tchege* is the only verb of the sentence. The measure phrase *ta' meyteh* 'one meter' is introduced by the preposition *pu* 'with' after the standard of comparison. As with the previous construction lacking a gradable verb, the scale of comparison, here height, is identified by the measure phrase. In (iv) we see the same construction with the measure phrase *ngu' toh* five years, indicating a comparison of age.

3.3. Evidence for degree abstraction

Now that we have seen evidence that Tswefap gradable verbs do, in fact, take degree arguments, it is useful to consider whether the language allows abstraction over degrees. This is the DAP of Beck et al. (2009). Assuming a semantics of comparison based on Heim (2000), Beck et al. provide five diagnostic tests for determining whether degree abstraction is possible in a language. These are the availability of direct measure phrases, degree questions, and subcomparatives, as well as the presence of scope ambiguities and negative island effects for degree phrases.

The first diagnostic for degree abstraction that I will consider is the availability of direct measure phrases. Tswefap does allow measure phrases to combine directly with some gradable verbs, as demonstrated in (14) with *tsey* 'be heavy'.[6]

(14) Chimi a tsey kilo ghap.
Chimi FACT be.heavy kilo ten
'Chimi weighs ten kilos.' (*Literally:* 'Chimi is ten kilos heavy.')

In (14) we see that *tsey* combines directly with the measure phrase *kilo ghap* 'ten kilos'. Under the analysis given by Beck et al. (2009), this is possible because the measure phrase moves to form an abstraction over degrees, as illustrated in (15).

(15) [[ten kilos] [1 [Chimi is t_1 heavy]]]

The second diagnostic for degree abstraction is degree questions. Degree questions are possible in Tswefap, as seen in (16).

(16) Chimi a seh ndohk pa'lieh?
Chimi FACT be.tall Q how
'How tall is Chimi?'

Under the analysis given by Beck et al. (2009), degree questions involve a quantificational element that moves to create an abstraction over degrees. The resulting meaning can be paraphrased roughly as 'For which d is Chimi d-tall?'.

The third piece of evidence for degree abstraction in Tswefap comes from the availability of subcomparatives, as shown in (17).[7]

(17) Chimi a seh n-tchege pa' nkhe Nkwehnwoh ne seh a.
Chimi FACT be.tall CNS-pass like rope Kuamo INF be.long like
'Chimi is taller than Kuamo's rope is long.'

[6]Schwarzschild (2005) notes that there is considerable variation crosslinguistically in which gradable predicates can combine with measure phrases directly. So while English *heavy* cannot combine directly with a measure phrase, German *schwer* (and Tswefap *tsey*) can.
[7]Note that Tswefap *seh* is used both to mean 'be tall' and 'be long'.

Here the maximal degree of Chimi's height is being compared to the maximal degree of length of Kuamo's rope. Because what must be compared here is two sets of degrees, this requires abstraction over degrees.

A fourth diagnostic used by Beck et al. (2009) to diagnose degree abstraction derives from work by Heim (2000). Heim argues that if a degree expression (DegP) acts as a quantifier, it should be able to show scope interactions with other quantificational elements in a sentence. Specifically she examines the scope interactions of modals and DegPs, arguing that DegPs in English do, in fact, show the type of scope ambiguity expected if they are able to move to a position above a modal. Beck et al. (2009) therefore assume that if a language shows English-style scope ambiguities with degree expressions this indicates that the DegP is able to undergo movement to create an abstraction over degrees. In Tswefap, we do see the type of scope ambiguity that is discussed by Heim (2000). This is shown by the example in (18).

(18) Yi me ntchohk nge pa' yoh loh kwa' sehntimeyteh yeh pege seh
it.is.required that building DEM take exactly centimeter LNK two be.tall
n-tchege pa' yi ne mbi ndeh le.
CNS-pass like 3SG INF be now like
'It is required that the building be exactly two centimeters taller than it is now.'
✓ Context 1: $\forall w > max$
You are in a contest where you have to build a model building out of clay. The building must be 3 meters tall, no more, no less. Currently, your building is 2.98 meters tall. Can the judge say the following truthfully?
?✓ Context 2: $max > \forall w$
You are in a contest where you have to build a model building out of clay. The building must be at least 3 meters tall, but can be more. Currently, your building is 2.98 meters tall. Can the judge say the following truthfully?

In (18), we see that this Tswefap utterance is ambiguous between two readings. The first reading corresponds to the surface scope of the modal and the DegP, with the modal scoping above the DegP. This reading is true in a context where the building must be exactly two centimeters taller than its current height and is not allowed to be any taller than that according to the rules. The second reading reflects the inverse scope where the DegP has covertly moved above the modal and takes widest scope.[8] This reading is true in a context where the building must be at least two centimeters taller than its current height but is allowed to be taller than that. The availability of both readings in Tswefap indicates that DegPs must be able to undergo movement and create abstractions over degrees.

The final diagnostic used by Beck et al. (2009) to diagnose abstraction over degrees is the presence of negative island effects. In languages like English, negation in the standard of comparison results in unacceptability, as in (19).

(19) * Chimi bought a more expensive book than no one did.

[8]Note that this reading is judged as possible, but not as natural as the reading involving surface scope. That is, the surface scope reading is preferred but is not the only available interpretation.

However, in a language like Japanese, which has been argued to involve comparison of individuals rather than degrees, such unacceptability does not arise (Beck et al., 2004). It has been argued by von Stechow (1984) that this unacceptability in English arises from the fact that the English *than*-clause involves abstraction over degrees and the maximal degree such that no one bought a d-expensive book is undefined. There is no maximum, and therefore this cannot serve as the standard of comparison. Rullmann (1995) observes that this same type of negative island effect is found in degree questions in English. If negation is present in a degree question, the result is ungrammaticality, as in (20).

(20) * How tall isn't Chimi?

Here, as in comparatives with negation in the standard of comparison, the maximal degree such that Chimi is not d-tall is undefined, yielding unacceptability. Turning to Tswefap, we find that, like in English, negation in degree questions results in a negative island effect. This is shown in (21).[9]

(21) * Chimi ka seh ndohk pa'lieh?
Chimi NEG.FACT be.tall Q how
Intended: 'How tall isn't Chimi?'

The unacceptability of (21) demonstrates that degree questions do indeed involve abstraction over degrees. Furthermore, negation yields unacceptability due to the fact that the maximum is undefined. Thus, this negative island effect provides another piece of evidence in favor of degree abstraction.

All five of the diagnostics proposed by Beck et al. (2009) for diagnosing the setting of the DAP yield the same result for Tswefap gradable verbs. Not only do Tswefap gradable verbs have degree arguments, but it is also possible for degree quantifiers to create abstractions over degrees in the language. This means that Tswefap has positive parameter settings for Beck et al.'s DSP and DAP.

4. Gradable adjectives as ⟨e,t⟩ predicates

In the previous section, I discussed the evidence for treating gradable verbs in Tswefap as having degree arguments, on a par with gradable adjectives in languages like English. Additionally, I provided further evidence that gradable verbs in Tswefap take degree arguments and can combine with a class of quantificational degree operators by demonstrating that degree abstraction is possible in Tswefap. In this section, however, I will show that gradable adjectives in Tswefap

[9] I was unable to elicit a suitable construction that would allow for the testing of negative island effects in the standard of comparison in Tswefap. The closest construction provided by my consultant involved a relative clause rather than negation in a clausal comparative. This construction is shown in (v).

(v) Chimi a yu ta' nwa'nye me yeh teuk n-tchege yoh yi sop mi nteh yu a.
Chimi FACT buy one book that it be.expensive CNS-pass DEM REL no person NEG buy REL
'Chimi bought a more expensive book than the one no one bought.'

So long as the sentence in (v) is uttered in a context where there is a unique book that no one bought, it is acceptable, just like its English counterpart involving a relative clause.

behave quite differently from gradable verbs. Unlike verbs, these adjectives do not show evidence for taking degree arguments and cannot appear in the type of degree constructions that gradable verbs can appear in. I will argue that the simplest analysis of these facts involves the assumption that adjectives do not take degree arguments in Tswefap.

One of the first distributional facts to note about Tswefap attributive adjectives is that they cannot combine with the comparative morpheme *tchege*. (Recall that Tswefap does not allow adjectives to occur in predicative position.) Thus there is no way to form a comparative or superlative form of an attributive adjective, as demonstrated in (22).

(22) * [**Sesege** (n-)tchege (mbeh wohloh)] mi a tseuk nkumnkum.
tall CNS-pass everyone person FACT eat fufu
Intended: 'The taller/tallest person ate fufu.'

In (22), we see that it is ungrammatical for the comparative morpheme *tchege* to appear with the attributive adjective *sesege* 'tall', regardless of whether it surfaces with the consecutive marker *n-*. One concern might be that the comparative morpheme is a transitive verb and therefore must occur with an object (typically the standard of comparison). However, this construction remains ungrammatical even if it is combined with an overt standard of comparison, such as *mbeh wohloh* 'everyone'. This is the standard of comparison that is used to form a superlative in constructions with gradable verbs, as in (23), but it cannot be used with an attributive adjective.

(23) Chimi a seh n-tchege mbeh wohloh.
Chimi FACT be.tall CNS-pass everyone
'Chimi is the tallest.' (*Literally:* 'Chimi is taller than everyone.')

In order to form a comparative or superlative within the DP, a relative clause must be used instead of an adjective in an attributive position. In the relative clause, a gradable verb is used instead of a gradable adjective, as demonstrated by (24).

(24) Mi [yi **seh** n-tchege mbeh wohloh a] a tseuk nkumnkum.
person REL be.tall CNS-pass everyone REL FACT eat fufu
'The person that is taller than everyone ate fufu.'

Here in (24) we see a relative clause *yi seh ntchege mbeh wohloh a* 'that is taller than everyone' (or alternatively 'that is tallest'). Importantly, this relative clause contains the gradable verb *seh* 'be tall' and not the gradable adjective *sesege* 'tall'. Thus, in order to use the comparative morpheme *tchege*, a verb must be used as the gradable predicate.

The unavailability of the comparative morpheme with attributive adjectives makes it difficult to test other potential degree constructions such as difference comparatives. However, one degree expression that does not involve the comparative morpheme is a direct measure phrase. Unlike gradable verbs in Tswefap, gradable adjectives cannot combine directly with a measure phrase, as demonstrated in (25).

(25) * [**Sesege** meyteh pege] mi a tseuk nkumnkum.
tall meter two person FACT eat fufu
Intended: 'The two meter tall person ate fufu.'

Here we see that the measure phrase *meyteh pege* 'two meters' cannot combine with the adjective *sesege* 'tall'. Once again, as with the comparative, the strategy used to include a measure phrase within the DP involves a relative clause with a gradable verb. This construction is shown in (26).

(26) Mi [yi **seh** meyteh pege a] le tseuk nkumnkum.
person REL be.tall meter two REL ASP eat fufu
'The person that is two meters tall ate fufu.'

In this example, it is crucial that the gradable predicate in the relative clause is the verb *seh* 'be tall' and not an adjective. Thus, once again, there is no evidence that adjectives can combine with degree operators.

Interestingly, no other potential degree operators can occur with attributive adjectives in Tswefap. For example the degree modifier *tey* 'very' can appear with gradable verbs, as in (27). This degree modifier is ungrammatical with adjectives, as seen in (28), nor is there any equivalent modifier that can be used with an adjective.

(27) Chimi a **seh** tey.
Chimi FACT be.tall very
'Chimi is very tall.'

(28) Chimi a yoh ta' **sesege** (*tey) mbaga.
Chimi FACT see one tall very man
'Chimi saw a (*very) tall man.'

Therefore, from all of the available evidence with attributive adjectives it appears that these predicates do not show the same behavior as gradable verbs. Attributive adjectives cannot appear in any construction that would provide evidence that they take a degree argument.

Bochnak (2015) discusses a similar situation in Washo. Gradable predicates in Washo cannot occur in any environment that would require them to be analyzed as being $\langle d,\langle e,t\rangle\rangle$ predicates. Therefore, in the absence of any evidence that gradable predicates in the language require degree arguments, Bochnak argues that the most parsimonious solution is to assume that the predicates do not take degree arguments and are, in fact, of type $\langle e,t\rangle$. Following this same line of reasoning for Tswefap, the simplest analysis of attributive adjectives is to treat them as vague $\langle e,t\rangle$ predicates. Interestingly, unlike in Washo (or in Motu; Beck et al., 2009), there is evidence that some gradable predicates in Tswefap do take degree arguments, as discussed in Section 3. However, these gradable predicates are all syntactically verbs. Therefore, there is a split along the lines of syntactic categories in whether gradable predicates do or do not take degree arguments.

An alternative account of the behavior of Tswefap adjectives with respect to degree constructions would be to assume that adjectives are of type ⟨d,⟨e,t⟩⟩, but that there are syntactic restrictions that result in the unavailability of all overt degree morphology with adjectives. In order to treat adjectives as ⟨d,⟨e,t⟩⟩ we would have to assume that they obligatorily combine with a silent *pos* morpheme à la Cresswell (1976). In languages like English, a *pos* morpheme has been proposed to explain the availability of positive form adjectives with no overt element to saturate or bind the degree argument. In Tswefap, however, we would have to say that the use of *pos* is the only possible strategy for saturating or binding the degree argument of adjectives, unlike verbs. This is not an attractive stipulation. Similarly, it would seem stipulative to propose various disjoint syntactic requirements needed to rule out all degree morphology with adjectives in order to maintain this syntactic account. In the next section, I will provide a comparison of the Tswefap facts with data from Yoruba, for which a syntactic account of a similar pattern has been entertained. I will demonstrate that while the evidence in Yoruba is inconclusive, the Tswefap patterns provide stronger evidence in favor of a semantic treatment in terms of a type difference.

5. Comparison with Yoruba

Yoruba provides an interesting point of comparison to Tswefap in terms of the question of how gradability is encoded across different syntactic categories. It is particularly informative because the morphosyntax of comparison and gradable predicates is very similar. Yoruba gradable predicates can be expressed as either adjectives or verbs, like in Tswefap, and comparison in the verbal domain is similarly accomplished via an exceed comparative. Additionally, Yoruba has been discussed in detail regarding the question of the semantic type of gradable predicates and the settings for the degree parameters proposed by Beck et al. (2009). The discussion in this section will be largely based on the discussion of Yoruba in Beck et al. (2009) and subsequent work by Howell (2013).[10]

Beck et al. (2009) discuss gradable verbs in Yoruba and argue that they provide evidence for a positive parameter setting of the DSP. The two pieces of evidence that Beck et al. cite in favor of this conclusion are the availability of measure phrase differentials in comparatives, as seen in (29), and the acceptability of comparison with a degree, as in (30).

(29) Kathy fi esebata kan ga ju Sandra lo.
Kathy with foot one be.tall exceed Sandra STD
'Kathy is one foot taller than Sandra.' (Beck et al., 2009: 21)

(30) Kathy ga ju esebata marun ataabo lo.
Kathy be.tall exceed foot five and half STD
'Kathy is taller than five and a half feet.' (Beck et al., 2009: 21)

In (29) we see an exceed comparative, like in Tswefap, and the measure phrase PP *fi esebata kan* 'with one foot' is used as a differential. In (30), the standard of comparison is the degree phrase *esebata marun ataabo* 'five and a half feet'. These data are parallel to Tswefap examples (11) and (13), respectively.

[10] I have standardized the glossing conventions used in each source to more closely match the conventions used by Howell (2013).

The availability of degree abstraction in Yoruba has been a subject of debate in the literature. Beck et al. (2009) posit a negative setting for the DAP in Yoruba based on negative results for the five diagnostics discussed in Section 3.3. Howell (2013), however, argues for a positive setting for this parameter based on additional data from Yoruba. She confirms Beck et al.'s earlier findings regarding the absence of direct measure phrases and scope ambiguities.[11] She argues that degree abstraction can indeed be diagnosed via the remaining three diagnostics in Yoruba: degree questions, subcomparatives, and negative island effects. Howell argues that degree abstraction is involved in Yoruba degree questions, which are built using the equative verb, as shown in (31).

(31) Bawo ni Ade ṣe ga to?
how FOC Ade Q be.tall reach
'How tall is Ade?' (Howell, 2013: 281)

She also demonstrates that degree relatives in Yoruba can be used to form subcomparatives, as seen in (32).

(32) Michael Jordan je agbaboolu-alapere ti o dara ju bi David Michael Jordan be basketball.player REL 3SG be.good exceed how David Beckham ṣe je agbaboolu-elese lo.
Beckham Q be football.player STD
'Michael Jordan is a better basketball player than David Beckham is a (good) football player.' (Howell, 2013: 283)

Finally, she demonstrates that degree relatives display negative island effects, as shown by the unacceptability of (33).

(33) * John ra iwe to won ju bi Peter ko ṣe ra iwe ti o
John buy book REL expensive exceed how Peter not Q buy book REL 3SG won.
expensive
'John bought a more expensive book than Peter didn't buy.' (Howell, 2013: 283)

This evidence from degree questions, subcomparatives, and negative islands would suggest that Yoruba is like Tswefap in the verbal domain, showing evidence for degree arguments and abstraction.

Howell (2013) notes that, in addition to gradable verbs, Yoruba also has gradable adjectives. Like in Tswefap, these two types of gradable predicates are not syntactically interchangeable.

[11] With respect to scope ambiguities, Howell (2013) suggests that their absence in Yoruba is not due to the inability of DegPs to move above other scope-taking elements. Instead she suggests that the lack of scope ambiguities is due to the fact that Yoruba lacks true modified numeral measure phrases such as 'exactly two centimeters'. She predicts that in a language with a similar morphosyntax for comparison and similar semantics for gradable verbs and comparison the presence of modified numeral measure phrases should allow for scope ambiguities. This prediction is borne out in Tswefap, which has an exceed comparative, degreeful gradable verbs, and modified numeral measure phrases such as *kwa' sehntimeyteh yeh pege* 'exactly two centimeters', and which does show scope ambiguities.

However, unlike in Tswefap, the adjectives are systematically morphologically derived from the verbs. This is done through reduplication of the first syllable (i.e. *sanra* 'be fat' vs. *sisanra* 'fat'; Howell, 2013: 277). Howell notes that Yoruba adjectives cannot be used with the comparative morpheme, as seen in (34).

(34) * Ade je ọmọ sisanra ju bab re lọ.
Ade be child fat exceed father his STD
Intended: 'Ade is a fatter child than his father.' (Howell, 2013: 277)

In this respect, Yoruba is like Tswefap. Howell (2013) notes that this restriction could be semantic or syntactic in nature. She suggests that a semantic solution would be to assume that Yoruba adjectives are vague ⟨e,t⟩ predicates, in line with the hypothesis I have outlined for Tswefap. Alternatively, she suggests that a syntactic solution may involve assuming that the comparative morpheme in Yoruba subcategorizes for a verb and thus cannot be used with an adjective. She sets aside this question regarding adjectives since both hypotheses are compatible with the unavailability of the comparative with adjectives. Unfortunately, Yoruba does not allow direct measure phrases even with gradable verbs, so these expressions cannot be used to test whether adjectives could combine with a degree operator with a different syntax. Further, Howell does not discuss whether other types of degree modifiers (e.g. intensifiers such as 'very') can combine with adjectives.

In Tswefap, as already noted, the situation contrasts with what we see in Yoruba. We do find direct measure phrases with gradable verbs, but they cannot combine with adjectives. Additionally, degree modifiers like *tey* 'very' are entirely ruled out with adjectives. Because no construction that would provide evidence for degree arguments with Tswefap adjectives is grammatical, the evidence in favor of a semantic solution is stronger. For each type of degree operator we would have to posit a separate syntactic restriction to account for its unacceptability with adjectives. In contrast, if we simply assume that the semantic type of adjectives in Tswefap is ⟨e,t⟩ instead of ⟨d,⟨e,t⟩⟩ then all of the ungrammatical constructions are straightforwardly ruled out. Furthermore, there is no need to posit a silent *pos* morpheme to co-occur with every instance of a gradable adjective in Tswefap. Therefore, I conclude that based upon the range of evidence found in Tswefap, the most parsimonious account of the different distributions of adjectives and verbs in degree constructions is to posit a difference in semantic type between the two categories of predicates.

6. Conclusion

In this paper I have argued for a type distinction between gradable verbs and gradable adjectives in Tswefap. Based on the diagnostics proposed by Beck et al. (2009), I have demonstrated that Tswefap gradable verbs have degree arguments. In contrast, given the unacceptability of all degree morphology with gradable adjectives, I have argued that these are best treated as vague ⟨e,t⟩ predicates in Tswefap. This means that there is a divide along the lines of syntactic categories in Tswefap in terms of the semantic type of gradable predicates. Therefore, even in a language that has predicates that take degree arguments and that allows abstraction over degrees, it is still possible for some gradable predicates to be of type ⟨e,t⟩.

This more general conclusion that gradability may be encoded differently across different syntactic categories has interesting implications for the study of gradability crosslinguistically and

especially for questions regarding gradable predicates that are not adjectives, such as gradable verbs and nouns. For languages such as English, which has ⟨d,⟨e,t⟩⟩ adjectives, there has been debate about whether all gradable categories in the language must also utilize degree arguments (see e.g. Doetjes, 2008). Tswefap suggests that this need not be the case. Furthermore, the data from Tswefap are particularly interesting for this debate because it is adjectives which do not show evidence for taking degree arguments. This suggest that adjectives have no privileged status with respect to encoding gradability via degree arguments even in a language that does make use of ⟨d,⟨e,t⟩⟩ predicates.

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