Chapter 2

Gradability and degrees

2.1 Gradability in natural language

If I point you towards a 10-foot/3-meter pole, and tell you *that is a long pole*, you are likely to agree with me. If I point you to a 10ft/3m pencil, you would almost certainly agree it was long. But if I point you to a 10-ft/3m long bridge, you are unlikely to agree that *it is a long bridge*. In fact, if I told you it was long, you would likely think I was being sarcastic. The adjective *long* is a classic example of a gradable predicate.

Many predicates, like *pregnant* or *from New Jersey*, are simply true or false about what they describe, but a large number of expressions are **gradable**. They denote properties that apply to a certain extent or degree. Their truth often depends highly on contexts of explicit or implicit comparison. What makes something long depends on a number of factors, including the type of object being measured, and the kind of objects it is being compared against. If I point you to a covered wooden bridge that is 100 feet/30 meters long, you might agree that it is long, for a covered bridge. But if we compare it to bridges in general, which could span miles/kilometers, it is not even close to long.

2.1.1 Gradable predicates

Gradability is a pervasive feature of language, and has repeatedly been explored in philosophy of language and semantics; see Schwarzschild (2008) or Hohaus & Bochnak (2020) for some reviews of the literature. Gradability has only recently become an area of study in documentary linguistics.

Discussions of gradable predicates typically focus on adjectives, but a lot of adverbs are gradable too. Whether an event is conducted *quickly* depends on the same kinds of comparisons and internal factors that determine whether an object is *long*. Even nouns and verbs also show some effects of gradability in some contexts.

Gradable predicates reveal a large number of subtle differences in grammaticality and semantic acceptability, which allow us to organize predicates into groups associated with particular formal concepts. For instance, gradable predicates with a maximal value (like *full*) behave slightly differently than predicates without one (like *tall*); one can add the modifier *completely* to the former but not the latter. Consequently, a lot of the semantic fieldwork and investigation on gradable predicates involves trying to see how these groups fall out of the data in the target language. However, the groups and their diagnostics vary across languages, so first we have to look for differences among lexical items.

2.1.2 Background on Degrees

A large body of research has sought to formalize the meaning of gradability so that we can predict its effects. The most effective method has been to employ degrees. Kennedy (1999) makes a seminal case for degrees and argues against deriving gradability from mere vagueness. When a gradable predicate describes an object, it expresses where it sits on a particular scale of measurement, which extends along a particular dimension (Cresswell 1976). For instance, if you say that a bridge is *three meters long*, you have specified that it sits at the value of 3m on the scale of length.

(1)   *The bridge is three meters long.*
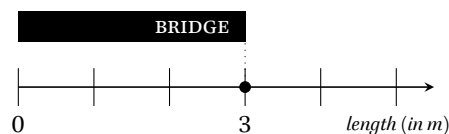
This might seem trivial at first, but it turns out to be quite powerful. From this we can derive the property of being three meters long as having a length of at least three meters. That is, the object's position on a scale of length

exceeds the position of three meters on the same scale. Different properties will work the same way, but on different scales.

(2)

predicate	property that its argument x has	formalization
three meters <u>long</u>	x's <u>length</u> is at least three meters	$\lambda x.\ \text{length}(x) \geq 3m$
three meters <u>tall</u>	x's <u>height</u> is at least three meters	$\lambda x.\ \text{height}(x) \geq 3m$
three meters <u>around</u>	x's <u>circumference</u> is at least three meters	$\lambda x.\ \text{circ}(x) \geq 3m$

Put another way, the overt predicate provides the scale, while the amount (*three meters*) tells us how far along that scale we are measuring. When we examine gradable predicates, we always want to ask: What is the scale at issue?

Gradable predicates are usually used without any explicit measure: *long, wide, tall, around...*, etc. This form can be called simply a **positive predicate.** However, it is fruitful to understand these as working just like *three meters long*, but with a silent contextual threshold instead of an explicit measure. If something is three meters long, its length at least reaches three meters. If it is just long, its length at least reaches some standard of length. It is like there a null contextual length included with these simple positive predicates. Typically that null measure is included in the syntax, and called POS for 'positive'.

(3)

predicate	property that its argument x has	formalization
<u>four meters long</u>	x's length is at least as much as <u>four meters</u>	$\lambda x.\ \text{length}(x) \geq 4m$
(<u>POS</u>) long	x's length is at least as much as <u>a contextual standard d_c</u>	$\lambda x.\ \text{length}(x) \geq d_c$

No matter how positive predicates are formalized in the grammar, we need to understand what the threshold of comparison is. The contextual standard is up to the speaker to choose, so there is a lot of vagueness and room for variation. A bridge might be long sometimes, and not long other times. Two people might look at the same bridge and if they disagree on whether it is long, they are actually disagreeing on where the threshold is or should be.

2.1.3 Gradability without degrees

While degrees have become the 'standard' prism for analyzing gradable predicates, it is not along. Bochnak (2015) argues that the California isolate Washo lacks degrees altogether, because Washo lacks the following key properties that are used as arguments for degrees.

(4)   ·   No comparative or superlative morphology (like *–er* or *–est*)

         ·   No measure phrases (like ***three feet*** *long*)

         ·   No degree-modifying adverbials (like *very*)

         ·   Gradable predicates are all norm-related

         ·   No comparisons of items that are close in measurement

Bochnak derives these properties simply, by removing degree variables from the predicate denotations in Washo. Instead they are simply tall for the utterance context.

(5)   In Washo: ⟦ *tall* ⟧^{c} = $\lambda x.$ x counts as tall with respect to context c

Deal & Hohaus (2019) point out that some languages (like the Sahatpian language Nez Perce) lack degrees but also have predicates whose vagueness shifts depending on a quantified over context, along the lines of Klein (1980). Instead of tying the predicate to the utterance context, it is interpreted with respect to a quantified-over one. For instance, with *Kareem is taller than Shaq*, there is a comparison context c' where Kareem is tall with respect to c' and Shaq is not. Klein had proposed this approach for English, but measure phrases ruled it out— here there is no asserted distance to measure.

Klein's vagueness approach only works in languages that do not have explicit measures but do have comparative morphology and allow close comparison (what are sometimes called 'crisp judgments').

· Has comparative morphology

· No requirement for norm-relatedness

· Allows comparison of items that are close in measurement

· No differential comparatives (*this bridge is **much** longer than that one*)

As we explore gradable expressions in Kiowa, we will be comparing among these three approaches to see first if Kiowa employs degrees, and if not, then to see what kind of vague predicates it employs. We will propose that Kiowa has degrees. It almost fits the Nez Perce mold by lacking measure phrases, not requiring norm-relatedness, and allowing close or crisp judgments, it also lacks comparative and superlative morphology, though it may have equative morphology, and it has a number of degree-modifying morphemes.

2.2 Gradable expressions in Kiowa

In languages with degrees, we can see gradable adjectives as relations between entities and degrees, and gradable adverbs as relations between events as degrees. The degrees are points on scales, and we can use the semantics of scales to find out how gradable predicates work in Kiowa.

Kiowa gradable expressions come in various categories. The most common by far are adjectival verbs like *cyǫ́i* [kjǫ́j] 'be long, tall', but there are also adverbs like *háiǫ̀dè* [hájǫ̀:dè] 'carefully', or locatives like *hâuigàu* [hɔ̂jgɔ̀] 'near'.

(6)

some gradable expressions		
scale	expression	gloss
bounty	/sémǫ́:/	'productive (area), bountiful'
proximity	/hɔ̂jgɔ̀/	'near'
fondness	+/háp/	'fond of'
painfulness	/kʰóp/	'painful'
thickness	/tsʼéː/	'thick'
whiteness	/tʼə́j/	'white'
blackness	/kʰǫ́/	'black'
depth	/zǫ́j/	'deep'
prodigality	/gúm/	'prodigal'
heaviness	/pʰíː/	'heavy'
energy	/pɔ́l/	'rousing'
odor	/sę́ː/	'odorous'
style	/sót/	'dressy'
fright	/zélbé/	'terrible, frightful'
skill	/zélbé/	'highly adept, impressive'
surprisingness	/tʼɔ́j/	'unexpected'

2.2.1 Contextual entailment of gradability

One of the most evident effects of gradable predicates can be seen with entailments. Non-gradable adjectives like *American* combine with nouns to create expressions that upward entail both the adjective and noun.[1] This fact works in Kiowa as well, as the unacceptable follow-ups to (8) show.

(7) *Tom is a Texan child* entails *Tom is Texan* and *Tom is a child.*

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[1]Recall that upward entailment occurs when being in one set/group automatically means being in a bigger set/group (so American children are necessarily Americans, and children).

(8)   Tom tèhá:nè$_*$+sàn ∅=dɔ́:
      Tom tèhá:nè$_*$+sân ∅=dɔ́:
      Tom Texan+child   3sGS=be

      'Tom is a Texan child...'

    a. #nę́ hɔ́n tèhá:nè+k'ì̀: ∅=dɔ́:–mɔ̂:
        né   NEG tèhá:nè$_*$+kí: ∅=dɔ́:–mɔ̂:
        but NEG Texan+male 3sGS=be–NEG

        'but he is not Texan.'

    b. #nę́ hɔ́n sận ∅=dɔ́:–mɔ̂:
        né   NEG sân ∅=dɔ́:–mɔ̂:
        but NEG child 3sGS=be–NEG

        'but he is not a child.'

However, gradable predicates in languages with degrees do not generally preserve this entailment.[2] *Tom is a tall child* does not entail that *Tom is tall*. This is also the case for Kiowa, so one can truthfully say (9). This tells us that gradable predicates are not necessarily norm-related.

(9)   Tom sận+èl   ∅=dɔ́:, nę́ hɔ́n ∅=ét–gɔ̂:
      Tom sân$_*$+êl   ∅=dɔ́: né hɔ́n ∅=ét–gɔ̂:
      Tom child+big\NPL$_C$ 3sGS=be but NEG 3sGS=big\NPL–NEG

      'Tom is a tall child, but he is not tall.'

2.2.2   Positive/negative pairs

Gradable predicates often come in positive/negative pairs, like *big* and *small* (Table **??**) The terms 'positive' and 'negative' in this context are not values of judgment, but rather descriptions of the direction the scale takes. For instance, on the scale of size, being big describes having a size higher on the scale than some standard, on an upward or positive scale. Being small describes having a size higher on the scale than some standard, on a downward or negative scale. The reason these properties work in pairs is that meeting one of the properties entails failing on the other; if you are big by a particular standard, you are not small by the same standard, or *vice versa*.

We often think of these pairs as antonyms, but truth-conditionally they are merely incompatible, not contradictory, because something can be neither large nor small, and so on. We can test for contradiction between two expressions if the truth of one entails the falsehood of the other and *vice versa*. With gradable pairs, there are contexts 'in between' where neither applies, so the expressions are not contradictory.

(10) á:–dɔ̀   hɔ́n è=kjɔ́j–gɔ̂:   gɔ̀   hɔ́n è=tsé:–gɔ̂:
      á:–dɔ̀   hɔ́n è=kjɔ́j–gɔ̂:   gɔ̀   hɔ́n è=tsé:–gɔ̂:
      pole–INV NEG 3INvS=long\SG–NEG and.SA NEG 3INvS=short\SG–NEG

      'The pole is not long and it is not short.'

2.3   Open/closed or absolute scales

Kennedy & McNally (2005) extensively summarize issues about how different kinds of scales in degree predicates can affect the entailment patterns and distribution of modifiers. Two of the key differences are whether scales are open or closed, and whether they are relative or absolute.

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[2]Bochnak finds that in degree-less languages like Washo, this kind of upward entailment does occur, and the equivalent of (9) is a contradiction.

[3]The stem /hót/ means 'crowded' by itself, but can apply to a passage that is narrow for a purpose or passing through. For instance with the stem /hó:/ 'travel', we get /hó:+hòt/ to describe a narrow passage, like a canyon.

scale	positive scale		negative scale	
height	/ét/$_{SG}$, /bîn/$_{NSG}$	'tall'	/tsé:/$_{NPL}$, /tsá:dò:/$_{PL}$	'short'
space	/ét/$_{SG}$, /bîn/$_{NSG}$	'roomy'	/hót/	'crowded'[3]
width	/ét/$_{SG}$, /bîn/$_{NSG}$	'wide'	/k'ájsján/$_{NPL}$, /k'ájsjón/$_{PL}$	'narrow'
size	/ét/$_{SG}$, /bîn/$_{NSG}$	'big'	/sjón/$_{NPL}$, /sján/$_{PL}$	'small'
age	/ét/$_{SG}$, /bîn/$_{NSG}$	'old'	/sjón/$_{NPL}$, /sján/$_{PL}$	'young'
length	/kjój/$_{SG}$, /kí:ní/$_{NSG}$	'long\\$_{NSG}$'	/tsé:/$_{NPL}$, /tsá:dò:/$_{PL}$	'short'
girth (living)	/tón/	'fat'	/k'ájsján/$_{NPL}$, /k'ájsjón/$_{PL}$	'slender'
wetness	/tʰáp/+	'wet'	/kʰál/+	'dry'
time	/kjój$_{*}$–dé/ *adv*	'a long time'	/sján$_{*}$–dé/ *adv*	'a short time'
amount (adv)	/ét$_{*}$–té/ *adv*	'a lot'	/sján$_{*}$–dé/ *adv*	'a little bit'
amount	/ój/	'be much'	/só:té/	'few, scarce'
strength	/kót/	'strong'	/pá:lé:/	'weak'
heat	/sál/	'hot'	/t'ó:/	'cold'
speed	/sôj/	'fast'	/sójbé/	'slow'
goodness	/t'ágà/	'good'	/k'ó:dè/	'bad'
weight	/pʰít/	'heavy'	/ó:kʰó:/	'light'
success	/sóó:/	'successful'	/bóó:/	'inept'
difficulty	/kót/	'hard, difficult'	/pó:/	'easy'
strength	/kót/	'strong'	/pá:lè:/	'weak'

ALL PREDICATES ARE ADJECTIVAL VERBS UNLESS NOTED

Table 2.1: Positive/negative pairs of gradable predicates

2.3.1 Open or closed scales

Open scales are infinite, and have no (realistic) endpoint. A scale of height starts at 0 and does not stop; there is no highest height. Closed scales have an endpoint. A scale of fullness cannot surpass the object being completely filled in. In English, the degree modifier *completely* only applies to the closed type.[4]

This distinction is not easy to discern in Kiowa with most gradable predicates. However, many locatives include degrees as they involve the distance between the ground and the figure (Ch. XX on locatives). These locatives can compound with the welcoming stem +/hî:/ 'genuine, real' to indicate a high degree on a scale, but whether the scale is open or closed triggers a difference.

If the locative has a closed scale,+/hî:/ indicates the maximal degree on the scale.

(11) a. /pâl$_{*}$+hî:/ → [pâl+hì:] 'all the way on this side', 'right here'
      b. /góm–gá$_{*}$+hî:/ → [góm–gⁱá+hì:] 'all the way in the back'
      c. /tʰáj$_{*}$+hî:/ → [tʰáj+hì:] 'at the highest point' (on the outside)

In contrast, with locatives that involve an open scale, +/hî:/ only describe a very strong degree, because there is no maximum.

(12) a. /tʰó:$_{*}$+hî:/ → [tʰó:+hì:] 'far/way on the other side'
      b. /gú:$_{*}$–j+hî:/ → [gú–j+hì:] 'way outside'
      c. /ó$_{*}$–p–hî:/ → [ó–p+hì:] 'a long ways away'

Some locatives can be used in both open or closed environments, for instance, in an open field versus a closed room.

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[4]The degree use of *completely* should not be confused with its part-whole use in cases like *The restaurant was completely blue.*, meaning 'all parts of the restaurant were blue'.

(13)

. underlying	→ surface	open scale	closed scale
a. /káp$_*$+hį̂ː/	→ [kʲáp+hį̀ː]	'well onward from the point in question'	'as far as possible from there'
c. /tsó$_*$+hį̂ː/	→ [tsó+hį̀ː]	'well over that way' (with gesture)	'as far over that way as possible' (with gesture)
d. /mâːₐ–pé+hį̂ː/	→ [mą̂–m+hį̀ː]	'at a very high level (outside)'	'along the uppermost/very top level (on the inside)'

The difference is well exemplified by /mâːₐ–pé+hį̂ː/ ([mą̂–m+hį̀ː]) above–*spread*+genuine. The stem /máː/ can indicate an internal part (the upper half) or an area external (above) to the ground. If it describes the inside of an area, for instance a tipi, there is a limit to the scale of height, so its meaning is up along the top interior of the tipi. If it describes the outside of an area, there is no limit, so its meaning is simply higher up or 'really high'.

2.3.2   Absolute or relative scales

Closed scales can sometimes be subdivided by where their contextual standard generally lies along the scale. If the standard's placement is free like we saw in §2.2, the scale is a **relative scale**. On the other hand, some predicates have standards that are found around one end of the scale. For instance, for something to be *straight* it has to be nearly at the top of the scale of exact straightness. Meanwhile, *open* can start being true if the door is just barely open; practically anywhere past 0% open suffices. Such scales are called **absolute scales**.

Absolute scale predicates can be further divided by which end of the scale the standard lies at. **Minimal** scales have a standard at or near the bottom of the scale, and in English include *awake*, *visible*, *open*, and *bent*. If a stick is bent at all it is *bent*. **Maximal** scales have a standard at or near the top of the scale and in English include *full*, *flat*, *still*, *closed*, and *straight*. To be still, one must be fairly close to perfectly still.

Testing Kiowa gradable predicates do not seem to distinguish these scales very easily, because oftentimes the equivalent lexical items are not gradable. For instance, Kiowa describes doors or windows as 'lying/put' (/kʼɔ́ː/) or 'missing' (/hę́ː/) rather than as 'open' or 'closed'. Usually, absolute scales are provided by change-of-state predicates such as /pʰɔ́ː/ 'become still' or /pêː/ 'straighten'.

Absolute gradable predicates in many languages can be modified by degree modifiers that indicate portions, like English *completely* or *halfway*, while relative ones cannot (*halfway closed* vs. **halfway tall*). Kiowa lacks proportional words except /zájdè/ 'half', and this cannot be used for scales, only for half of the item. The modifier /mɔ́ː/ 'somewhat' has been elicited for expression portions of absolute predicates. For instance, in (14), which is from a text, the subject is a turkey who stood perfectly still to make like a burned-out tree and fool the hunter chasing him.

(14)   gɔ̀   ∅=**pêːdè**+pʰɔ̀ː–hèl   gɔ̀   ę̀m=**tóːbé**–hèl
       gɔ̀   ∅=**pêːdè**$_*$+pʰɔ́ː–hêl   gɔ̀   èm=**tóːbé**$_*$–hêl
       and.SA 3SGS=**straighten**$_{DETR}$+stop.PFV–HSY and.SA 3SGA:REFLO=**quieten.PFV**–HSY

       'He [stopped and] stood straight and still.' (Sende and the Turkey, SIL Bedtime)

In elicitation, the insertion of /mɔ́ː/ works if the subject stands kind of straight and kind of still.

(15)   **mɔ́ː**   ∅=pêːdè+pʰɔ̀ː–hèl   gɔ̀   **mɔ́ː**   ę̀m=tóːbé–hèl
       mɔ́ː   ∅=pêːdè$_*$+pʰɔ́ː–hêl   gɔ̀   **mɔ́ː**   èm=tóːbé$_*$–hêl
       somewhat 3SGS=straighten$_{DETR}$+stop.PFV–HSY and.SA **somewhat** 3SGA:REFLO=quieten.PFV–HSY

       'He [stopped and] stood kind of straight and still.'

The verb /hɔ́n/ 'exhaust' can be used with some change-of-state stems to indicate that the change reached its utmost degree.

a. /séː/	'wear out'	/séːₐ+hɔ́n/ → [séː+hɔ̀n]	'wear out totally'
b. /gúl/	'burn'	/gúl+hɔ́n/ → [gúːl+hɔ́n]	'burn through'
c. /sɔ̨́ː/	'hone'	/sɔ̨́ː+hɔ́n/ → [sɔ̨́ː+hɔ́n]	'blunt'

2.4 Degree modification

One of the hallmarks of gradable predicates with degrees is their ability to be modified in ways that indicate the degree to which they apply. For instance, *completely* modifies degree predicates to signal that the degree is all the way at the top or bottom of the scale.

(16) *The glass is completely full/empty.*

English has a long tradition of marshaling predicates to serve as degree modifiers that get bleached of their original meaning to an extent. That is why we can describe something as *mighty weak* or *pretty ugly*. The common use of *literally* in a 'non-literal' sense is also a degree modifier. When Mark Twain wrote of Tom Sawyer as "literally rolling in wealth" Twain (1876: ch 2) he was saying that his description was at the top of the scale of aptness in describing the situation: 'rolling in wealth' was the best way to say it. The fact that the description is figurative plays no role in the ranking.

Many other languages do not routinely rope predicates into this process, and Kiowa is one of them. Kiowa has a number of degree modifiers, but only a handful can be analyzed as derived from other predicates. Meanwhile, languages argued to lack degree arguments do not have degree modifiers. The presence and frequent use of degree modifiers is a signal that gradable predicates in Kiowa do involve degrees.

2.4.1 Degree intensifiers

Intensifiers combine with a positive or negative predicate (not a bare one), and indicate a precision that delivers a sense of intensity. If *tall* indicates being taller than a conextual standard (S_C), *very tall* indicates being taller than a second standard (S_V) that only considers objects that pass the first standard; being tall amongst the tall, if you will (Klein 1980). Other modifiers would work in similar ways, like *rather tall* (tall amongst the not-very-tall) or *extremely tall* (tall amongst the very tall).
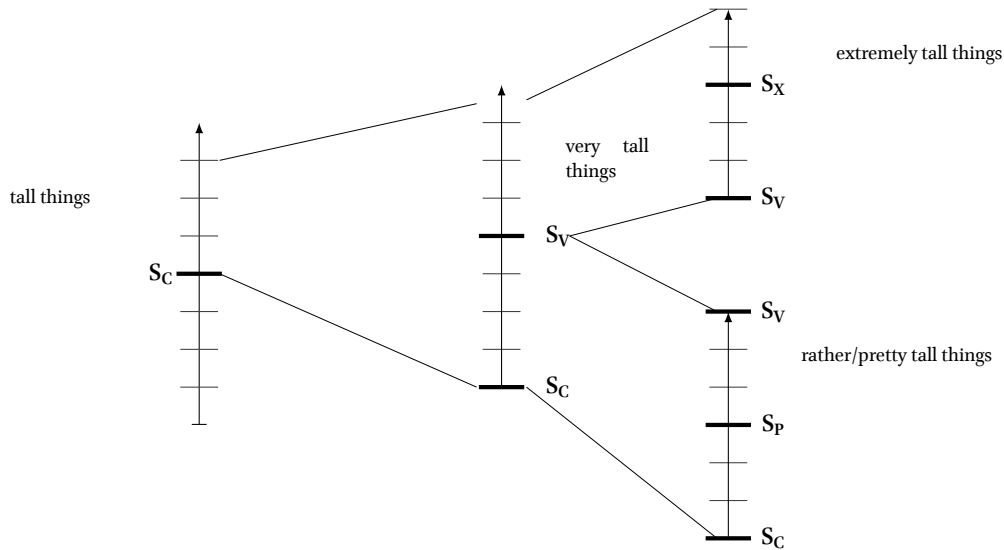
Kiowa expresses degree intensity with a number of intensifiers that can be classified the same way. The most common is the incorporated stem /kò:dó/+ 'a lot, very', which when applied to gradable predicates gives a 'good among the good' reading.

(17) jɔ́kɔ́j–gú   á=**kò:dó**+t'ɔ̀dèp
     jɔ́kɔ́j–gú   á=**kò:dó**$_*$+t'ɔ́dèp
     young woman–INV 3EMPA=**a lot**+generous

     'The young women were very generous.'

We can tell it has this reading, because negating an intensified sentence with /kò:dó/+ does not have to negate the ordinary positive predicate.

(18)   hɔ́n á=**kò:dó**+t'ɔ̀dèp–gɔ̀:,   nę́ á=t'ɔ́dèp
       hɔ́n á=**kò:dó**$_*$+t'ɔ́dèp–gɔ̂:   né á=t'ɔ́dèp
       NEG 3EMPA=**a lot**+generous–NEG but 3EMPA=generous

       'They were not very generous but they were generous.'

When added to a change of state modifier, the intensifier applies to the resulting state.

(19)   jɔ́kɔ́j–gú   á=**kò:dó**+sɔ̀ɔ̀:dè–hèl
       jɔ́kɔ́j–gú   á=**kò:dó**$_*$+sɔ́ɔ̀:dè–hêl
       young woman–INV 3EMPA=**a lot**+get angry.PFV–HSY

       'The young women got very angry.'
       ≠ 'The young women got angry a lot'

A slightly common intensifier is /ɔ́:/+ 'a lot, very', which can be applied only to a limited number of stative predicates.

(20)   dɔ́j   ∅=**ɔ́:**+kʰɔ̀p
       dɔ́j   ∅=**ɔ́:**$_*$+kʰɔ́p
       medicine 3SGS=**a lot**+painful

       'The medicine is very bitter.'

Another common intensifier construction is to use the indefinite /hɔ́ndé/ 'INDEF\thing' in an exclamative sense. The exclamation does not directly assert a high degree, but it generally is only used when a notably high degree is reached.

(21)   **hɔ́ndé**   gʲà=sép+dɔ̀:!
       hɔ́ndé   gà=sép$_*$+dɔ́:
       INDEF\thing 3PLS=rain+be

       'How rainy it was!'

The adverbial /mɔ́:/ 'somewhat' is commonly used to attenuate gradable predicates in the way that *fairly* or *rather* do in English.

(22)   ę́:–dè   kʲʲɑ́:hį̂: **mɔ́:**   ∅=sjɔ́n
       ę́:$_*$–dé   k'ɑ́:hį̂: **mɔ́:**   ∅=sjɔ́n
       PRX–BAS man   **somewhat** 3SGS=young\SG

       'This man is fairly young' (McKenzie et al. 2022: S92)

It can be incorporated or compounded (23), and gets translated variably as 'fairly', 'somewhat', 'tolerably', 'kind of', 'moderately', and so on. The bound form /mɔ̀hâ:/+ 'somewhat' indicates a similarly attenuated degree (24).

(23)   hájáʔtò **mɔ́**:+tɔ̀:dè   gʲà=t'ɔ́:+ɔ̀m–dè–t'ɔ̀:
       hájáttò **mɔ́:**$_*$+tɔ́:dè   gà=t'ɔ́:$_*$+ɔ́m–dé–t'ɔ́:
       perhaps **somewhat**+long time 3EMPD:3PLO=stay+make$_{DETR}$–DETR.PFV–MOD$_{VI}$
       'It is possible they may have to remain much longer.' (McKenzie et al. 2022: S185)

(24)   kí:+tsòj   ∅=**mɔ̀hâ:**+sàl
       kí:$_*$+tsój   ∅=**mɔ̀hâ:**$_*$+sál
       meat+liquid 3SGS=**somewhat**+hot

       'The soup is tolerably/moderately hot.'

The sense of 'barely' indicates being higher than the contextual standard S_C, but near to it. In Kiowa it can be expressed with the incorporated form /ójgɔ́/+ 'barely'.

(25) tò:+są̂n   ɔ́gɔ̀ gǫ́:m–ɔ̂: ∅=dɔ́:–ɛ̀:   gʲà=**ójgɔ́**+bǫ̀:+dɔ̀:
     tò:+sân   ɔ́gɔ̀ góm–ɔ̂: ∅=dɔ́:–ɛ̀:   gà=**ójgɔ́**ₓ+bǫ́:+dɔ́:
     room_C+small_C SBRD back–in 3SGS=be–at 3PLS=**barely**+lit+be

     'There was a faint light in the small back room.' (P. McKenzie, n.d. "Ghost Woman")

Another common method of intensifying degrees is non-linear: lengthening the first vowel of the predicate (glossed as HI-DEG for 'high degree'). The longer the vowel is held, the more intensely the predicate applies.

(26) á–ì:+tà:–dè   ę́n=**hí::tè**–hèl
     á*–í:+tá:–dé   én=**hí::tè**ₓ–hêl
     3.POSS–child+daughter–BAS 3SGD:3DUS=**beautiful**\HI-DEG–HSY

     'His two daughters were sooo beautiful.' (SIL, Sende and Senpit)

Notably, this lengthening can even apply to short vowels. For instance, in (27), the speaker lengthens the vowel of the distancing distal locative /ó–p/ which in this context means 'to a place far away', to signal 'far far away' or 'really far away'. His short vowels averaged 125ms, his long vowels 290ms. Most expressive lengthenings double that, but this phonemically short vowel is held for 900ms; a very long time that indicates a very long way.

(27) gʲàt=t'ǫ́m+àj   gɔ̀   **ó:::–p**   há–já–tsò
     gàt=t'óm*+âj   gɔ̀   **ó:::–p**   há–já–tsò
     1SGA:3PLO=furtive+start off.PFV and.SA DIST\HI-DEG–**onward** some\INDEF–to–CONTRAST

     gʲà?=ʔâj
     gàt=âj
     1SGA:3PLO=start off.PFV

     'I escaped and I ran really far away in a different direction' (McKenzie et al. 2022: S139)

Degree modifiers cannot be used with attributive predicates that are compounded onto nouns. Relative clauses must be used instead, with constructions like those we have seen.

(28) a. /sàné:*+êl/   → [sà̰nę́:+èl]   'big snake'
      b. */sàné:*+kò:dó+êl/ → [sà̰nę́:+kò:do+èl]   'very big snake'
      c. */sàné:*+mɔ́:+êl/   → [sà̰nę́:+mɔ̀:+èl]   'somewhat big snake'

In Kiowa, the verb /ǫ́:/ 'pleasant' can be used to indicate degrees, and it is bleached, so you can combine it with predicates like /k'ɔ́:dè/ 'bad'. The use of /ǫ́:/ 'pleasant' is used with states to indicate a significant degree ('quite', 'rather'), not as strong as /kò:dó/ 'very'.

(29) ę́–m–hɔ̀:   dɔ́m   è=dɔ̂:+ǫ̀:
     é–pé–hɔ̀:   dɔ́m   è=dɔ̂:*+ǫ́:
     PROX–SPRD–DEF ground\INV 3INVS=depressed+pleasant

     'The ground around here has a lot of depressions/wallows.'

(30) /k'ɔ́:dè/   'bad'   k'ɔ́:dè+ǫ̀:   'rather bad'
      /t'áj/   'white'   t'áj+ǫ̀:   'rather white'
      /k'óm/   'elderly' k'ǫ́m+ǫ̀:   'quite elderly'
      /k'áj/   'crispy'   kʲáj+ǫ́:   'quite crispy'

It is also used with nouns to create a derived predicate indicating having a good amount of that item, again in a bleached intensifier sense. It contrasts with the similar construction using /dɔ́:/ 'be' that simply indicates having an amount exceeding the contextual standard.

(31) /á:/   'smoke'   á:+dɔ́:   'be smoky'   á:+ǫ́:   'be smoke-filled'
      /góm/   'wind'   gǫ́m+dɔ́:   'be windy'   gǫ́m:+ǫ́: 'be very windy'
      /pʰáj/   'dust'   pʰà̰j+dɔ́: 'be dusty'   pʰà̰j+ǫ́: 'be dust-filled'
      /pʰít/   'foam, suds' pʰít+dɔ̀: 'be foamy, sudsy' pʰít+ǫ̀: 'be quite foamy, sudsy'

2.4.2 Expressive intensifiers

Many languages employ expressive intensifiers, which indicate the speaker's attitude at the time of saying it rather than applying their literally meaning. In English a signficant number of these expressions are vulgar in nature.

(32)   *This house is **fucking/bloody/stupid** huge!*

(33)   German (colloquial)

Das Ding is **sau/voll/total**   schnell
the thing is **sow/fully/totally** fast
'That thing is (expressive ≈ totally) fast' (Gutzmann & Turgay 2014: 187)

Kiowa does not have this kind of modification.

2.4.3 Adverbial degree modifiers

It is common in languages like English to use adverbs that indicate the degree directly, like *unbelievably hot* to describe a temperature that is hot to an unbelievable degree. Evaluation of a degree is not common in Kiowa; the only attested item is /tól/+ 'unexpectedly', which can be used with statives and adverbials to indicate that the degree to which the predicate applies was unexpected.

(34)   tę́:gʲà gʲà=**tól**+ts'è:
       tę́:gà gà=**tól**$_*$+ts'é:
       ice   3PLS=**unexpectedly**+thick
       'The ice was unexpectedly thick.'

2.4.4 Excessive degrees

Some degrees have a modal component, usually associated with excessive or sufficient degree. If I say it is 'too warm', I am essentially saying it is warmer than some maximum that it *should* be for whatever reason. Meanwhile, 'warm enough' indicates warmer than some minimum that it should be.

The Kiowa morpheme generally used for expressing an excessive degree is the bound stem /dôj/+ 'too much', which can be incorporated onto verbs or deverbal adverbs.

(35)   tsę̂:   ∅=**dôj**+tǫ̀n=k'ɔ̀t   ą́n=kɔ̂l+mɔ̀ɔ̀:dèp
       tsę̂:   ∅=**dôj**$_*$+tón=k'ɔ̀t   án=kɔ̂l$_*$+mɔ́ɔ́:dèp
       horse 3SGS=**too**+fat=as.UNEXP.DF 3SGD:3PLS=turn+be unable
       'As the horse is too fat, it cannot turn around.'

(36)   **dôj**+èʔ–tè   tsój   àn gʲà=tǫ́n–mɔ̀
       dôj$_*$+ét–té   tsój   àn gà=tón–mɔ̀
       too+big\SG–ADV coffee HAB 1SGA:3SGO=drink–IPFV
       'I drink too much coffee.'

A rarer adverbial is /ɔ́mgâj/ 'too much'.

(37)   **ɔ́mgʲâj**   tsój   ę́=óp
       ɔ́mgâj   tsój   ę́=óp
       too much coffee 2SGA:1SGD:3SGO=pour\PFV
       'You poured me too much coffee' (Notecards, McKenzie (n.d.))

To specify the kind of event or thing for which the predicate is 'too much', the positive predicate is often used with the activity incorporated onto it (38). This compounding forms what is sometimes called a 'tough-construction'.

(38)   /kɔ́t/   'cross'   /kɔ́t+ét/   '(too) big to cross'
       /tʰêm/ 'break'   /tʰêm$_*$+kót/   '(too) tough to break'
       /tsó:/ 'be lying down'   /tsó:$_*$+ǫ́:/   'pleasant to lie on'

These forms do not actually assert 'too much'. The excess is implicated, and can be cancelled.

(39)   p'ɔ́:   ∅=kɔ́t+ét   né̜ hɔ́n ∅=dôj+èt–gɔ̀:
       p'ɔ́:   ∅=kɔ́t+ét   né hɔ́n ∅=dôj∗+ét–gɔ̂:
       watercourse 3SG=cross+big\SG but NEG 3SG=too+big\SG–NEG

       'The river is wide to cross, but it is not too wide.'

For a complex tough-construction, incorporation is not an option because the syntax does not allow large structures to be incorporated. One way around this is to use /dôj/+ in one clause, and explain the reason in another clause.

(40)   p'ɔ́:   ∅=dôj+èt   nɔ̀   hóp   gʲà=kɔ́l+mɔ̀ɔ̀d–èp
       p'ɔ́:   ∅=dôj∗+ét   nɔ̀   hóp   gà=kɔ́l∗+mɔ́ɔ́:d–èp
       watercourse 3SG=cross+big\SG and.DF traveler.INV 3EMPD:3PLS=cross+be unable_{IPFV}–IPFV_{VI}

       'The river was too wide for the travelers to cross.' (Lit. The river was too wide and the travelers could not cross it.')

2.4.5 Sufficient degree

Another modal degree expresses sufficient degree ('enough') for some purpose. In Kiowa, sufficience is expressed in a number of ways but not directly. Elicitation finds that when a gradable predicate P is part of a positive/negative pair, 'P enough' is translated with the positive half of the pair, and 'not P enough' returns the negative form, often accompanied by /dôj/+ 'too much'. For instance, 'too small' expresses 'not big enough'.

    Eliciting 'not enough' by itself usually returns the word /sɔ́:té/ 'be scarce' or /dónmè/ 'not plentiful'. These are often used with /dôj/ 'too much'.

(41)   tsè̜nbô:–gɔ̀ sɔ́n béʔ=dôj+sò:tè
       tsènbô:∗–gɔ́ són bét=dôj∗+sɔ́:té
       cow–INV   grass 3INVD:3PLS=too+scarce

       'The cows do not have enough grass.' (Lit. the grass is too scarce for the cows)

Some predicates allude to being enough or not enough, like the stative amount predicates /hém/+ 'have insufficient food' or its contrary /pé:dà/ 'have enough food', or the active verbs /sémdép/ 'get more than enough' or /ból/ 'have one's fill'. The verb /ból/ can be used metaphorically to signal having done enough of an activity, and is productively used as a welcoming verb for a verb describing that activity.

(42)   /sɔ́m/   'watch with enjoyment'   /sɔ́m∗+ból/   'see enough, watch enough'
       /bép/   'bark'   /bép∗+ból/   'bark enough'
       /dè̜:/   'sleep'   /dè̜:+ból/   'get enough sleep'
       /kún/   'dance_C'   /kún∗+ból/   'get enough dancing'
       /sép/   'rain'   /sép∗+ból/   'have enough rain'

Kiowa commonly use a series of interjections to tell others that they have said or done enough. Storytellers use them to indicate the end of the story.[5]

(43)   a. /óbàhɔ̀:/ 'enough'   b. /ótèhɔ̀:/ 'enough'   c. /ódèhɔ̀:/   'enough'

    Another degree with modal flavor is 'the right amount' for some purpose, which indicates being above some minimal preferred amount but below some maximal preferred amount on the relevant scale. For instance, the adverbial stem /tâm/– 'right (amount)', which obligatorily takes measure suffixes like –/ót/ 'right up to' or –/óbà/ 'as much as'.

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[5]It is plain to see that these are composed historically from various amount markers plus /hɔ̀:/ 'definite'. However, speakers treat these words as monomorphemic.

(44) ú: ɔ̀nk'î: gʰà=dɔ́: dé–ȩ̀: tsȩ̂:+bɪ̀:–dɔ̀   ∼n éʔ=pɔ̀dô:=gɔ̀   mɔ́:
      ú: ɔ̀nk'î: gà=dɔ́:   dé–ȩ̀: tsȩ̂:₊+bɪ̂:–dɔ́   àn ét=pɔ̀dô:₊=gɔ́   mɔ́:
      DIST long ago 3PLS=be BAS–at horse+big\NSG_INV–INV HAB 3EMPA:3INVO=care for=INV somewhat
      tậm–òt   è=pít
      tâm₊–ót   è=pít
      right–up to 3INVS=sized\PL
      'Way back then, the horses that people took care of were just the right size.' (Kiowa Culture Program 1979: 21:35)

(45) jájpɔ̀–tò   ę́m=t'ɔ̀mɔ̂n–mɔ̀   gɔ̀ **tậm–òt**   té+hɔ̀ndè
      jájpɔ̀–tò   ém=t'ɔ̀mɔ̂n–mɔ̀   gɔ̀ **tâm₊–ót** té₊+hɔ́ndé
      string–with 3EMPA:REFLO=measure_IPFV–IPFV and.SA **right–up to** all+thing\BAS
      gʲà=ɔ́:m–à
      gà=ɔ́m–à
      3EMPD:3PLS=make.DETR–IPFV_VI
      they measured with a string and were able to do everything 'just right' (Kiowa Culture Program 1979: 22:00)

2.5   Measure phrases

Many languages allow explicit measures to specify exactly how far up the scale the predicate applies. *The bench was two meters long* indicates that the length of the bench is two meters. *The festival was two days long* indicates that the duration of the festival is two days. This kind of measure is a strong sign of the presence of degrees in the semantics, because they explicitly denote a degree and cannot be accounted for without degrees.

Nonetheless, Kiowa does not allow this type of measurement. It is not merely a cultural question of not making precise measurements. While there were no precise traditional measures of distance besides a pace (/ɔ́n/ 'step'), there were many precise units of time (chapter XX: Location in time and space). Still, this construction is not allowed now, and was not attested in texts by previous generations of speakers.

Instead of saying one was seven years old, for instance, one would say they had seven winters (46), using a possessive construction (chapter XX: argument structure). No matter how many winters have passed, the agreement on the verb is singular, suggesting it is a single interval.

(46) pậnsę́ ę́=sá:+dɔ́:
      pânsę́ ę́=sá:+dɔ́:
      seven 1sGD:3sGS=winter+be
      'I am seven years old' (Lit. 'I have a seven-winter interval')

Generally, distances and intervals are expressed with an existential construction.

(47) jí:+ɔ̀n   gʲà=dɔ́:
      jí:₊+ɔ́n   gà=dɔ́:
      two+mile 3PLS=be
      'It's two miles (away)' (Lit. 'there are two miles')

2.6   Causing a change in degree

Expressing changes of a gradable state also leads to interesting entailments. With open-scale predicates, a change of state only entails a comparative. For instance, if you *widen* a road, the road becomes wider, but not necessarily wide. The same applies in Kiowa:

(48) hɔ́ɔ̀n á=èl+ɔ̀m–hèl,   né hɔ́n hétɔ́ ∅=ét–gɔ̂:
      hɔ́ɔ̀n á₊=êl+ɔ́m–hêl   né hɔ́n hétɔ́ ∅=ét–gɔ̂:
      road 3EMPA:3sGO=big\SG_C+make.PFV–HSY but NEG still 3sGS=big\SG–NEG
      'They widened the road, but it still isn't big.'

There is no appreciable difference between lexical causatives like /bôn/ 'bend' and composite ones like /tsé:∗+ɔ́m/ 'short+make = shorten' built out of a predicate with causative /ɔ́m/ 'make'.

With closed-scale predicates, the implicature of a result is stronger to the point of nearly being entailed. With the modified positive predicate, speakers do not like to cancel it, but grudgingly accept the result (49). With an attenuating modifier, such as /mɔ́:/ 'somewhat', the implied result is easily cancelled.

(49) ??hɔ̰́:g–ɔ̀t   dé=pê: nę́ hɔ́n hétɔ́ è=pê:+dɔ̰̀:–mɔ̀:
    ??hɔ̰́:g∗–ɔ́t dé=pê: nę́ hɔ́n hétɔ́ è=pê:+dɔ̰̀:–mɔ̀:
    wire–INV 1SGA:3INVO=**straighten.PFV** but NEG still 3INV=straighten+be–NEG
    '??I straightened the wire, but it still isn't straight.'

(50) hɔ̰́:g–ɔ̀t mɔ̰́:   dé=pê: nę́ hɔ́n hétɔ́ è=pê:+dɔ̰̀:–mɔ̀:
    hɔ̰́:g∗–ɔ́t mɔ́:   dé=pê: nę́ hɔ́n hétɔ́ è=pê:+dɔ̰̀:–mɔ̀:
    wire–INV somewhat 1SGA:3INVO=**straighten.PFV** but NEG still 3INV=straighten+be–NEG
    'I straightened the wire some, but it still isn't straight.'

(51) ʃɔ̰́n–dé   hɔ̰́:g–ɔ̀t è=pé:gʲ–áj   nę́ hɔ́n hétɔ́ è=pê:+dɔ̰̀:–mɔ̀:
    sjɔ́n–dé   hɔ̰́:g∗–ɔ́t è=pé:g–áj   nę́ hɔ́n hétɔ́ è=pê:+dɔ̰̀:–mɔ̀
    small\SG–ADV wire–INV 1SGA:3INVO=**straighten.DETR**–PFV but NEG still 3INV=straighten+be–NEG
    'The wire straightened a little bit, but it still isn't straight.'

Kiowa has a wide variety of degree modifying morphemes and constructions. These provide the surest evidence that Kiowa does rely on degrees at least some of the time, which entails that degrees form part of the semantic ontology of the language.

2.7 Comparison

A major feature of gradable predicates is their role in comparison. Unlike categorical predicates like *free* or *priceless*, gradable predicates are easily comparable. For instance, I can point you to a 13-foot/4-meter long bridge, and that still is not a long bridge. But if we compare its length to that of the pole from the previous context, it is true that *the bridge is longer than the pole*. Many languages have specific morphemes to describe elements of comparison. Kiowa does not, for the most part, but still it offers means of expressing these meanings.

2.7.1 Comparatives

Comparative morphemes like English *–er* or *more* are used with predicates to indicate being on the predicate's scale at a higher degree than some argument introduced by a preposition *than*: *Tom is taller than Bill*. Many languages allow just that preposition (or an equivalent), without the morpheme indicating 'more'. Still other languages lack comparative morphology altogether, and Kiowa is one of them. Instead, Kiowa uses three indirect means, which can be classified as P-very P, P-notP, and beyond P.

2.7.1.1 P-very P comparison

P-very P comparison occurs when both compared objects meet the standard for the simple positive predicate. It involves using the simple predicate for the lower one, and an intensified predicate for the higher one (§2.4.1).

(52) ę́:–gɔ̀   á:–dɔ̀   è=**kjɔ́j**,   nɔ̀   ó–j–gɔ̀   á:–dɔ̀   è=**kò:dó+kjɔ̀j**
    ę́:∗–gɔ́ á:∗–dɔ́ è=**kjɔ́j**,   nɔ̀   ó∗–j–gɔ́ á:∗–dɔ́ è=**kò:dó∗+kjɔ́j**
    PROX–INV tree–INV 3INVS=**tall\SG** and.DF DIST–VAGUE–INV tree–INV 3INVS=**very+tall\SG**
    'That tree is taller than this one' (Lit. 'this tree is tall, that tree is very tall')

(53) nɔ̰̀: **k'óp+tʰɔ́:–j**   à=kíl   nɔ̀   nɔ̰́:∗+p'í: **k'óp+tʰɔ́:+hḭ̀:**
    nɔ̀: **k'óp+tʰɔ́:–j**   à=kíl   nɔ̀   nɔ́:∗+p'í: **k'óp+tʰɔ́:∗+hį̂:**
    1   **mountain+beyond**–VAGUE 1SGS=dwell and.DF 1+female's sister **mountain+beyond+genuine**
    ∅=kíl
    ∅=kíl
    3SGS=dwell

'I live on the other side of the mountains, and my sister lives further away.'

2.7.1.2 P not P comparison

P not P comparison occurs when one of the compared objects does not meet the standard for the simple positive predicate. Sometimes the comparison has the positive and negative predicate.

(54) ę́ː–gɔ̀   áː–dɔ̀   è=**kjǫ́j**,   nǫ̀   ó–j–gɔ̀   áː–dɔ̀   hǫ́n è=**kjǫ́j–gɔ̂ː**
      ę́ː∗–gɔ́   áː∗–dɔ́   è=**kjǫ́j**,   nɔ̀   ó∗–j–gɔ́   áː∗–dɔ́   hɔ́n è=**kjǫ́j–gɔ̂ː**
      PROX–INV tree–INV 3INVS=**tall**\SG and.DF DIST–VAGUE–INV tree–INV NEG 3INVS=**tall**\SG–NEG

      'This tree is taller than that one' (Lit. 'this tree is tall and that tree is not tall')

Other times, if there is a positive/negative pair, the comparison involves the opposing pairs.

(55) ę́ː–gɔ̀   áː–dɔ̀   è=**kjǫ́j**,   nǫ̀   ó–j–gɔ̀   áː–dɔ̀   è=**tséː**
      ę́ː∗–gɔ́   áː∗–dɔ́   è=**kjǫ́j**,   nɔ̀   ó∗–j–gɔ́   áː∗–dɔ́   è=**tséː**
      PROX–INV tree–INV 3INVS=**tall**\SG and.DF DIST–VAGUE–INV tree–INV 3INVS=**short**\SG

      'This tree is taller than that one' (Lit. 'this tree is tall and that tree is short')

Parker McKenzie wrote down a humorous scenario that demonstrates this method of comparison well, and also highlights the contextual variability of scales with gradable predicates.

Context:
Another Indian asks a couple of brothers which one is the older one.

(56) nǫ́ː à=ét   gɔ̀   à=sjǫ́n,   nǫ̀   ę́ː–dè   ∅=sjǫ́n   gɔ̀   ∅=ét
      nóː à=ét   gɔ̀   à=sjón,   nɔ̀   ę́ː∗–dé   ∅=sjón   gɔ̀   ∅=ét
      1   1SGS=big\SG and.SA 1SGS=small\NPL and.DF PROX–BAS 3SGS=small\NPL and.SA 3SGS=big\SG

      'I am taller but younger, and he is shorter but older.' ("Kiowa Humor" McKenzie (n.d.))

This example also illustrates how with comparative use, the simple positive predicate is not entailed. In technical terms it is not necessarily norm-related. Deal & Hohaus (2019) point out that this fact does not necessarily indicate the presence of degrees, but it is certainly compatible with the presence which we established with degree modifiers.

2.7.1.3 Beyond P comparison

A less used sense of comparison, but one more frequent with abilities, is the use of the locative /tʰɔ́–j/ 'beyond–VAGUE' to mean 'better than'.

(57) a. /nɔ́ː/   1st person   /nɔ́ː∗+tʰɔ́–j/ → /nǫ́ː+tʰɔ̀–j/   'better than me/us'
      b. /ám/   2nd person   /ám∗+tʰɔ́–j/ → /ą́m+tʰɔ̀–j/   'better than you'

(58) hǫ́n hǫ́ndé   **tʰɔ́–j**   já=ǫ́ːm–ɔ̂ː–tɔ̀ː
      hɔ́n hɔ́ndé   **tʰɔ́–j**   já=óm–ɔ̂ː∗–tɔ́ː
      NEG thing\INDEF **beyond–VAGUE** 3SGA:1SGD:3PLS=do–NEG–MOD_VT

      'I wouldn't be able to do any better than him' (McKenzie et al. 2022: S117)

It is also used with doing something more than previously.

(59) hègɔ́ ą́n=háj–gʲá+dɔ̀ː   gɔ̀ mǫ́n **tʰɔ́–j**
      hègɔ́ án=háj–gá∗+dɔ́ː   gɔ̀ mɔ́n **tʰɔ́–j**
      then 3SGD:3PLS=inform_DETR–DETR_C+be and EPIS **beyond–VAGUE**

      'She has studied [these languages] and probably more besides.' (Crowell 1960)

2.7.2 Equatives

Equative expressions assert that two items are at the same degree on a scale. Kiowa employs various indirect expressions for this kind of meaning.

(60) –/tsò/ 'like'

  hɔ́n ɑ́m–tsò à=ʃɔ́n–gɔ̂ː
  hɔ́n ám–tsò à=sʲɔ́n–gɔ̂ː
  NEG you–like 1SG=young\SG–NEG

  'I'm not as young as you.' (lit. I am not young like you)

(61) –/òbà/ 'at the level of'

A correlative structure is used on occasion to indicate that the extent of one event correlates to the extent of another, giving an 'as much as' reading.

(62) mɔ́n há–òbà   gʲá=pèl+dòː,   dé–òbà   ę́ː–gɔ̀ː   gʲá=sôː–gú
  mɔ́n há–òbà   gá*=pél+dóː   dé–òbà   ę́ː*–gɔ́ː gá=sôː–gú
  EPIS INDEF–level of 3EMPA:3PLO=thought+hold REF–level of PROX–PRS 3EMPA:3PLO=sew_{IPFV}–IPFV

  'They must have sewn them [moccasins] as long as they had in mind' (Kiowa Culture Program 1979)

2.7.3 Superlatives

Describing superlatives in Kiowa is simple: They are not marked. Instead, the plain positive predicate is used inside a relative clause, sometimes with the additional morpheme /háː/ that indicates a characteristic of some sort, but which is not restricted to superlative environments.

(63) ɔ́gɔ̀ á̀ː–dɔ̀   è=tséː(=hàː)=gɔ̀   bé=kɔ̂n
  ɔ́gɔ̀ á̀ː–dɔ̀   è=tséː*(=háː)=gɔ́   bé=kɔ̂n
  SBRD stick–INV 3INVS=short\NPL(=CHAR)=INV 2SGA:3INVO=bring.PFV\IMP

  'Bring me the shortest stick.' (lit. bring me the stick that is short)

Even though the plain predicate is used, it does not entail that the positive predicate is true on its own. Instead, the superlative sets a standard on the scale such that the other members of the comparison set are below the standard. For instance, (64) describes a case where three young boys ran away from a boarding school. The English superlative 'oldest', provided by the teller in his own translation, corresponds to a relative clause containing a simple positive predicate /ét/ 'big\SG, old\SG'. The child is 'old' despite being only fourteen.

(64) pʰá̰ːὸ̰ː è=dɔ́ːmę̂ː | ∅=**é:tʰêl**=dè   kɔ́ːkʰı̰̀ː+já?kʲá+tʰὰ̰ː á=sáː+dɔ́ːmę̂ː
  pʰá̰ːὸ̰ː è=dɔ́ːmêː | ∅=**ét–hêl***=dé   kɔ́ːkʰı̰̀ː+játká*+tʰá̰ː á=sáː+dɔ́ːmêː
  three 3INVS=be.HSY 3SGS=**old**\SG–HSY–BAS ten+four+teen   3SGD:3SGS=winter+be.HSY

  'There were three of them. The oldest one was 14 year old.' (McKenzie et al. 2022: S135–136)

2.8   Questions about degrees

For questions about degrees with locatives, the wh-word /háòj/ 'where, when' is used. It does not necessarily form a constituent with the gradable predicate. This wh-word is derived from the indeterminate stem /há/ with the suffix /ôj/ 'exactly at'.

(65)   Colorado Springs+tʰɔ̀:   **há–òj**   mɑ̀=kíl?
       Colorado Springs+tʰɔ̀:   **há$_*$–ôj**   mà=kíl
       Colorado Springs+beyond **wh–exactly at** 2DUS=dwell
       'How far past Colorado Springs do you live?' (lit. 'Exactly where beyond C.S. do you two live?') (P. McKenzie
       Collection Box 23 Folder 2 Pg 51)

   For questions about degrees with other predicates, speakers use /háòtè/ 'how many', which derived from the indeterminate stem /há/ with the suffix /ótè/ 'as much/many as'. It does not form a constituent with the predicate.

(66)   há–òtè   èm=kjɔ́j?
       há$_*$–ótè   èm=kjɔ́j
       wh–as many as 2sGS=tall\NPL
       'How tall are you?

2.9   Other phenomena

This section features phenomena that occur in some languages, but do not occur in Kiowa.

2.9.1   Cross-polar grading

In English and many other languages, you can make comparisons across distinct scales.

(67)   *Your house is taller than my house is wide*

This is not a possible construction in Kiowa.

2.9.2   External degrees

Some ambiguous strings can be interpreted as an ellipsis structure, in what is called an external comparison. In (68), the missing phrase is *can jump*, which leads to the 'external' reading: jumping higher than Bill can. Interpreting the NP *Bill* directly gives the 'internal' reading: jumping higher than Bill is.

(68)   *My dog can jump higher than Bill.*
       a. external reading: the point on a scale of height to which my dog can jump is higher than the point on a
          scale of height that Bill can jump.
       b. internal reading: the point on a scale of height to which my dog can jump is higher than the point on a
          scale of height that Bill reaches (on his own)

Kiowa does not have this ambiguity. Only an internal reading can be attained with the comparative and equative forms (§2.7.1).

2.10   Summary

Kiowa is full of gradable predicates and adverbials. Using scales built on degrees, we can analyze the behavior of these expressions in various domains. The language lacks clear morphology that denotes comparatives and superlatives, but employs various strategies to express these concepts.

Bibliography

Abusch, Dorit. 2012. Circumstantial and temporal dependence in counterfactual modals. *Natural Language Semantics* 20(3). 273–297.

Bochnak, M. Ryan. 2015. The degree semantics parameter and cross-linguistic variation. *Semantics and Pragmatics* 8(6). 1–48. doi:10.3765/sp.8.6.

Copley, Bridget. 2008. The plan's the thing: Deconstructing futurate meanings. *Linguistic Inquiry* 39(2). 261–274.

Cresswell, M.J. 1976. The semantics of degree. In Barbara H. Partee (ed.), *Montague grammar*, 261–292. New York: Academic Press.

Crowell, Edith. 1960. *The Kiowa language: A grammatical study*. Philadelphia, PA: University of Pennsylvania dissertation.

Deal, Amy Rose & Vera Hohaus. 2019. Vague predicates, crisp judgments. In M. Teresa Espinal, Elena Castroviejo, Manuel Leonetti, Louise McNally & Cristina Real-Puigdollers (eds.), *Proceedings of Sinn und Bedeutung 23*, 347–364. Universitat Autònoma de Barcelona, Bellaterra.

Deo, Ashwini. 2009. Unifying the imperfective and the progressive: Partitions as quantificational domains. *Linguistics and Philosophy* 32. 475–521.

Donoghue, John F. 2016. The multiverse and particle physics. *Annual Review of Nuclear and Particle Science* 66(1). 1–21. doi:10.1146/annurev-nucl-102115-044644.

von Fintel, Kai & Sabine Iatridou. 2003. Epistemic containment. *Linguistic Inquiry* 34(2). 173–198.

Gatschet, Albert A. n.d. Unpublished notebook. National Museum of Natural History, National Anthropological Archives.

Gutzmann, Daniel & Katharina Turgay. 2014. Expressive intensifiers and external degree modification. *The Journal of Comparative Germanic Linguistics* 17(3). 185–228.

Harrington, John Peabody. 1928. *Vocabulary of the Kiowa Language*. Washington, D.C.: Bureau of American Ethnology.

Hohaus, Vera & M. Ryan Bochnak. 2020. The grammar of degree: Gradability across languages. *Annual Review of Linguistics* 6. 235–259. doi:10.1146/annurev-linguistics-011718-012009.

Hokeah, Jasper. 1946. Christmas song. *Indians for Indians Hour* December 10, 1946.

Kennedy, Christopher. 1999. *Projecting the adjective: The syntax and semantics of gradability and comparison*. New York: Garland.

Kennedy, Christopher & Louise McNally. 2005. Scale structure and the semantic typology of gradable predicates. *Language* 81(2). 345–381.

Kiowa Culture Program. 1978. Love songs and serenades. KCP recording no. 31. January 9, 1978. Kiowa Language and Culture Revitalization Program.

Kiowa Culture Program. 1979. Ways of measuring. Unpublished recording: KCP recording no. 229. December 14, 1979. Kiowa Language and Culture Revitalization Program.

Klein, Ewan. 1980. A semantics for positive and comparative adjectives. *Linguistics and Philosophy* 4. 1–45.

Kratzer, Angelika. 2012. *Modals and conditionals*. Oxford: Oxford U. Press.

McKenzie, Andrew, Daniel Harbour & Laurel J. Watkins. 2022. *Plains life in Kiowa: Stories from a tribe in transition* (Texts in the Indigenous Languages of the Americas). Chicago, IL: University of Chicago Press. International Journal of American Linguistics 88(S1).

McKenzie, Parker. n.d. Parker McKenzie collection. Oklahoma Historical Society Research Division.

Menzel, Christopher. 2021. Possible worlds. In Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*, Metaphysics Research Lab, Stanford University Fall 2021 edn.

Mooney, James. 1896. *Calendar History of the Kiowa Indians* (17th Annual Report of the Bureau of American Ethnology). Washington, D.C.: Smithsonian Institution.

Palmer, Jr., Gus Pàntháidè. 2013. How Thébôl got his name. In David L. Kozak (ed.), *Inside dazzling mountains: Southwest Native verbal arts*, 411–417. Lincoln, NE: University of Nebraska Press.

Poolaw, Dane. 2022. *g̵áui̵dòn:gyà-t'áukáui̵dón:gyá: / Kiowa-English Student Glossary*. University of Oklahoma.

Portner, Paul. 1998. The progressive in modal semantics. *Language* 74(4). 760–787.

Portner, Paul. 2007. Imperatives and modals. *Natural Language Semantics* 15(4). 351–383.

Portner, Paul. 2009. *Modality*. Oxford: Oxford U. Press.

Redbird, Charles, Carrie Redbird, William Wolfe, Louis Toyebo & Lorna Gibson. 1962. *Kawy-Dawkhyah Dawgyah:* (*Kiowa Christian Songs*). Norman, OK: SIL International.

Rullmann, Hotze, Lisa Matthewson & Henry Davis. 2008. Modals as distributive indefinites. *Natural Language Semantics* 16. 317–357.

Schwarzschild, Roger. 2008. The semantics of comparatives and other degree constructions. *Language and Linguistics Compass* 2(2). 308–331.

Toyebo, Louis. 1962. *Kiowa bedtime stories*. Dallas, TX: SIL International.

Twain, Mark. 1876. *The adventures of Tom Sawyer*. Hartford, CT: American Publishing Company.

Watkins, Laurel. 1984. *A Grammar of Kiowa*. Lincoln, NE: U of Nebraska Press.

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