

# Degree constructions in Gitksan\*

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## 1 Introduction

This paper offers the first in-depth description of degree semantics in Gitksan and highlights notable properties to narrow down the hypothesis space towards a formal analysis. I demonstrate that comparative and superlative meanings share the same morphological forms and that the difference lies in the size of the comparison class. I then investigate the contributions of the morphemes involved in comparative/superlative constructions, *gay* ‘instead’, *k’aa* ‘exceedingly’, and the preposition *a*. These morphemes are optional, meaning that positive forms can be used in contexts in which both comparatives and superlatives would be used in English. I suggest that consideration of alternative(s) aids the comparative/superlative interpretations in the absence of *k’aa* ‘exceedingly’. One exception is the class of minimum-standard predicates, which require *k’aa* for comparative/superlative interpretations. Finally, I describe the interpretations of measure phrases (MPs) and the division of labour

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\* I was fortunate to take Hotze’s pragmatics and graduate semantics courses as an undergraduate student. The latter in particular gave me a glimpse of what it would be like to pursue semantic research, and my countless visits to his office hours always made me feel increasingly excited and supported to apply to graduate programs. I was delighted to have him on my MA thesis committee, and I am grateful for his engaging feedback on every chapter and conference abstract, as well as his advice and support beyond my thesis project, which continue to this day.

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between gradable adjectives and nominals, demonstrating that MPs receive differential readings with the former and absolute interpretations with the latter. I stay agnostic about the issue of whether Gitksan should receive a degreeful (Cresswell 1976; von Stechow 1984) or degreeless (Klein 1980) analysis (see Beck, Krasikova, Fleischer, Gergel, Hofstetter, Savelsberg, Vanderelst, and Villalta 2009; Hohaus and Bochnak 2020 for an overview of the cross-linguistic picture) and whether such a binary view of degreefulness is on the right track (Bochnak, Bowler, Hanink, and Koontz-Garboden 2020).

After a brief background on the language (Section 2), Section 3.1 describes the basic pattern of comparative/superlative constructions. Section 3.2 probes for the semantic contributions of the morphemes involved in these constructions. Section 3.3 demonstrates distinct distributions of *k'aa* 'exceedingly' in combination with minimum-standard predicates. Section 3.4 shows differential interpretations of measure phrases occurring with positive and *gay k'aa* constructions. Finally, Section 4 describes other degree constructions in the language, which are incompatible with adjectives and instead involve morphologically related gradable nominals.

## 2 Language background and previous literature

Gitksan is an Indigenous language spoken in northern British Columbia, Canada. It belongs to the Tsimshianic language family, constituting the Interior Tsimshianic branch along with a neighbouring language, Nisga'a. There are approximately 255 fluent speakers (Gessner, Herbert, and Parker 2022). Unless otherwise noted, the data are from fieldwork with two speakers, Vincent Gogag and Hector Hill.

There has been no formal work on degree constructions in the language family, although some of them have been previously documented. Bicevskis, Davis, and Matthewson (2017) describe amount comparatives and equatives (346–7); Rigsby's (1986) grammar includes degree questions (95–96); and Tarpent's (1987) grammar of Nisga'a documents gradable nominals (244–6) and some comparative sentences (232, 306).

### 3 Comparative and superlative constructions

#### 3.1 Basic pattern

Comparatives are constructed with the optional morphemes *gay* ‘instead’ and *k’aa* ‘exceedingly’ (1). The standard of comparison is optionally marked by a preposition *a* (1b).<sup>1</sup>

(1) Context: Two children, John and Mary, are standing back to back because they want you to decide who is taller of the two.

a. Naa=hl (gay) (k’aa) ’wii ’nagw-it?  
 who=CN instead exceedingly big long-SX  
 ‘Who is taller?’ (VG-v., HH-v.)<sup>2</sup>

b. (Gay) (k’aa) ’wii ’nakw=t<sup>3</sup> Mary a[-t]=s  
 instead exceedingly big long=PN Mary  
 John).  
 PREP[-3SG.II]=PN  
 ‘Mary is taller (than John).’ (VG, HH-v.)<sup>4</sup>

<sup>1</sup> Glosses follow the conventions in Rigsby (1986). ASSOC: associative; AX: agent extraction; ATTR: attributive; CCNJ: clausal conjunction; CN: common noun connective; COMP: complementizer; DEM: demonstrative; DIST: distal; LVB: light verb; OBL: oblique; PN: proper noun connective; PREP: preposition; PROX: proximal; SX: subject extraction; T: T-morpheme; TR: transitive; Q: question; QUDD: question under discussion downdate; WH: general purpose WH-word; I: series I clitic; II: series II suffix; III series III independent pronouns.

Initials on the right of each example identify the speaker(s) who provided the judgements. “-v.” indicates that the sentence was volunteered by the speaker.

<sup>2</sup> In (1b), HH volunteered (Gay) k’aa ’wii ’nakw=t Mary a=s John. The rest were checked and accepted by both speakers, except that the PP *a=s John* was sometimes omitted, and *Gay ’wii ’nakw=t Mary* was degraded for VG, with a comment that it is acceptable “only if you noted that they are both tall.”

<sup>3</sup> Readers may suspect that the combination of the two predicates *’wii* ‘big’ and *’nakw* ‘long’ may have the effect of intensification. That does not seem to be the case. In the context of describing height, neither *’wii* or *’nakw* can be used alone. HH rejects both #’*Wii=t Michael* and #’*Nakw=t Michael* as a translation of ‘Michael is tall’, remarking that the former is for being large both vertically and horizontally and only used for a baby or child and that the latter would be ‘He’s long.’

Superlatives are expressed by the exact same forms as comparatives (2).

- (2) Context: Trying to stack boxes, with the heaviest one at the bottom.  
 Nde=hl xbiist (gay) (k'aa) sdin-it?  
 WH=CN box instead exceedingly heavy-sx  
 'Which box is the heaviest?' (VG-v.)

In (3), the same, positive sentence is used in contexts in which both comparative and superlative forms would be used in English, respectively. VG's comment suggests that the felicity of a positive sentence in comparative and superlative contexts is aided by exhaustivity: whichever desk is chosen as the answer to (3), the other salient desk(s) do not count as long in the context. It seems that introduction of alternative(s) is also part of the semantic contribution of *gay* (see section 3.2.1).

- (3) Context: Choosing one desk out of {two, three} desks at a furniture store.  
 Guu=hl ha'niihahle'lst 'wii 'nagw-it?  
 what=CN desk big long-sx  
 'Which desk is long {-er, -est}?' (VG)  
 VG (on the comparative context): You're not making a comparison.  
 You just want the longest one.

### 3.2 Probing the contributions of *gay* 'instead', *k'aa* 'exceedingly', and the preposition *a*

In order to investigate the semantic contributions of the three morphemes involved in comparative/superlative constructions, *gay*, *k'aa*, and *a*, and the reasons for their optionality, this section discusses earlier descriptions of these morphemes and provides further data both from within and outside comparatives/superlatives.

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<sup>4</sup> In (1a), VG volunteered the version with *k'aa* only, and HH volunteered the version with *gay k'aa*. The rest were checked and accepted by both speakers.

### 3.2.1 Gay ‘instead’

Bicevskis et al. (2017) gloss *gay* in comparative constructions as a ‘contrastive’ marker. *Gay* can associate with any lexical element in the sentence and signal that there is a salient alternative to the referent of the associate that makes the proposition false (4).<sup>5</sup>

- (4) a. [Agent] Context: John was supposed to make a cake, but he was too busy, so Mary made it instead.

Gay=t      Mary an=t      jap[-t]=hl      ixsta-m      anaax.  
 instead=PN Mary AX=1.I make[-2.II]=CN sweet-ATTR bread  
 ‘Mary made a cake instead.’ (VG-v.)

- b. [Subject] Context: “Did John sing?”

Nee. Gay=t      Mary lim[x]-it.  
 no. instead=PN Mary sing-sX  
 ‘No, Mary sang instead.’ (VG)

- c. [Object] Context: “Did Mary make fried bread?”

Nee. Gay      jab-i-t=hl      ixsta-m      anaax.  
 no. instead make-TR-3.II=CN sweet-ATTR bread  
 ‘No, she made a cake instead.’ (HH-v.)

The associate of *gay* is optionally extracted to the sentence initial position following *gay* (4a, 4b). Transitive subject (4a) and intransitive subject (4b) extractions are marked with the overt extraction morphemes *an=* and *-it*, respectively. These extraction patterns are characteristic of A’-dependencies, including *wh*-questions, relative clauses, and focus marking, across the Ts’imshianic family (Aonuki 2022; Brown 2023; Davis

<sup>5</sup> Rigsby (1986) also documents use of *gay* in *wh*-questions (i).

- (i) Naa an=t      gay hlimoo[-t]=s      Bruce?  
 who AX=3.I      gay help[-3.II]=PN Bruce?  
 ‘Who (is the one who) helped Bruce?’ (adapted from Rigsby 1986:303)

In addition, Tarpent’s (1987) grammar of Nisga’a documents a morpheme *yagay/yaay/yay* ‘precisely, exactly, instead’, although I have not encountered a use of *gay* in Gitksan as ‘precisely, exactly’. I set aside the question of whether these uses of *gay* correspond to the same morpheme as the one encountered in comparative constructions.

and Brown 2011; Rigsby 1986).

There are at least some indications that *gay* as used in comparative/superlative constructions is indeed the same lexical item as the one in (4). First, extraction is used in comparatives as well. Extraction analogous to (4b), with the associate of comparison immediately following *gay*, is at least sometimes accepted (5) although never volunteered.

- (5) *Gay=t Mary 'wii 'nagw-it.*  
 instead=PN Mary big long-SX  
 'Mary is taller.' (VG, HH)

Extraction of the associate of comparison to the sentence-initial position is often volunteered by VG and accepted by HH (6), regardless of whether *gay* is present (6a) or not (6b).

- (6) a. *Hi'niiluxw-da ii=t Mary=hl gay 'wii 'nagw-it.*  
 tall.PL-3PL.INDP CCNJ=PN Mary=CN instead big long-SX  
 'Both are tall, but Mary is taller.' (VG-v.)
- b. *Mary=hl 'wii 'nagw-it.*  
 Mary=CN big long-SX  
 'Mary is taller.' (VG-v., HH)

Second, HH spontaneously volunteered a *gay* 'instead' sentence with a salient alternative marked with a preposition just like the standard of comparison (7).

- (7) *Gay 'wii halay=t Mary a[-t]=s John=aa?*  
 instead big doctor=PN Mary PREP[-3.II]=PN John=Q  
 'Is Mary a doctor than John?' (volunteered gloss) (HH-v.)  
 Elicitor: Is it asking if Mary is more of a doctor than John?  
 HH: No, asking if Mary is a doctor and John is not.

### 3.2.2 *K'aa* 'exceedingly'

*K'aa* is documented in the grammars of both Gitksan and Nisga'a. Rigsby (1986) glosses *k'aa* in Gitksan as 'exceedingly' (155). Tarpent (1987) glosses *k'aa* in Nisga'a as 'most, excessively, extremely' and describes



(12) Context: Math question with an answer ‘5’. ...How many berries did she eat?

a. Gilbil[=hl] maa’y=hl gub-i[-t]=s Mary. Ii=t  
 two[=CN] berries=CN eat-TR[-3.II]=PN Mary CCNJ=3.I  
 hets’im(h)ux gup[-t]=hl gwila’l[=hl] maa’y.  
 again eat[-3.II]=CN three[=CN] berries  
 ‘Mary ate two berries. Then she ate three more berries.’  
 (VG-v.)

b. \*Gilbil[=hl] maa’y=hl gub-i[-t]=s Mary. Ii=t  
 two[=CN] berries-CN eat-TR[-3.II]=PN Mary CCNJ=3.I  
 (gay) k’aa gup[-t]=hl gwila’l[=hl] maa’y.  
 instead exceedingly eat[-3.II]=CN three[=CN] berries  
 intended: ‘Mary ate two berries. Then she ate three more berries.’  
 (VG)

**3.2.3 a is more than a standard marker**

I have described in Section 3.1 that the standard of comparison is optionally specified with a preposition *a* (which also surfaces as *e*). Rigsby describes *a~e* as a ‘general preposition’. Strictly speaking, some instances of *a-* in comparatives/superlatives do not mark the standard of comparison. (13) illustrates this.

(13) a. Naa=hl k’aa ’wii ’nagw-it a=hl  
 who=CN exceedingly big long PREP=CN  
 sgapdii[-t]=hl tk’ihlxw?  
 among[-3.II]=CN children?  
 ‘Who is the tallest among the children?’ (VG-v.)

b. Context: Looking at two people who are both sick.  
 Naa=hl k’aa siipxw-it a=hl dip=un?  
 who=CN exceedingly sick-SX PREP=CN ASSOC=DEM.PROX  
 ‘Who is sicker of these people?’ (HH-v.)



- c. Naa=hl k'aa am-a wil-it a=hl Japan?  
 who=CN exceedingly good-ATTR LVB-SX PREP=CN Japan  
 'Who is the richest in Japan?' (VG-v.)

The general role of the optional *a~e* phrase in comparatives and superlatives can then be thought of as, instead of only marking the standard of comparison, supplying contextual information that helps narrow down the comparison class, whether that is, e.g., specifying the comparison class directly (13a, 13b), supplying individual(s) that form a comparison class with the associate (i.e., the standard of comparison, (1b)), or specifying the location (13c).

### 3.3 Minimum-standard gradable adjectives

The data in Section 3.1 showed that *k'aa* 'exceedingly', along with *gay* 'instead', is optional in comparatives and superlatives involving what would be relative adjectives in English. This is not the case with what would be minimum-standard adjectives in English (see Kennedy and McNally 2005; Rotstein and Winter 2004 for classes of gradable adjectives).<sup>6</sup> While there is variation between speakers and lexical items, one generalization is that, in translations of English comparative sentences with a minimum-standard predicate, *k'aa* is obligatory (14).

(14) Context: Looking at two people who are both sick.

- a. Naa=hl gay k'aa siipxw-it?  
 who=CN instead exceedingly sick-SX  
 'Who is sicker?' (HH-v.)
- b. Naa=hl k'aa siipxw-it ?(a=hl dip=un)?  
 who=CN exceedingly sick-SX PREP=CN ASSOC=DEM.PROX  
 'Who is sicker of these people?' (HH)

<sup>6</sup> I have not found independent diagnostics for minimum-standard predicates. That is, I have not found modifiers like *slightly* and *partially* in English, which are argued to diagnose a minimum-standard predicate (Kennedy and McNally 2005; Rotstein and Winter 2004). For example, *slightly* is translated to Gitksan with *ts'uusxw* 'small'.

- c. Naa=hl (gay) siipxw-it?  
 who=CN instead sick-sx  
 intended: #‘Who is sicker?’  
 ‘Who is sick?’  
 HH: You know they’re sick, and you’re asking which one is sick. (HH)

The same pattern is observed in superlatives involving minimum-standard predicates (15).

- (15) Context: Looking at many doors that are all open.
- a. Nde=hl aats’ip (gay) k’aa k’ag-at?  
 WH=CN door instead exceedingly door-sx  
 ‘Which door is the most open?’ (VG-v.)
- b. Nde=hl aats’ip (gay) k’ag-at?  
 WH=CN door instead open-sx  
 intended: #‘Which door is the most open?’  
 ‘Which door is open?’  
 VG: All the rest are closed. (VG)

HH’s and VG’s comments for (14c) and (15b), respectively, are consistent with the view that these predicates have minimum standards that are context-independent (Kennedy 2007): having any degree of sickness or openness would satisfy these predicates regardless of the context.

### 3.4 Measure phrases

Measure Phrases (MPs) that have been volunteered or recognized by the speakers include *sa* ‘day’ and measurements of length originating from body parts, such as *t’im k’aax* ‘full arm span, fathom’, *hlek moos* ‘inch (lit. crook of thumb)’, and *se’e* ‘foot’.<sup>7</sup> Use of a whole arm as a measure of length is also reported in Sm’algyax, a.k.a. Coast Tsimshian, as Rigsby (1986:30) reports that *gipl’on* ‘two fathoms’ in Sm’algyax is documented by Dunn (1978). One difference between Sm’algyax and Gitksan is that in the former, MPs using the arm span seem to be suppletive, as in *k’üül k’aay* ‘half fathom’ and *k’ooldq’on* ‘six fathoms’ (First Voices

<sup>7</sup> See Bicevskis et al. (2017) for MPs used with mass nouns.

2000), while they are formed with a number followed by *t'im k'aax* in the latter. *Hlek moos* was volunteered by VG, and upon being asked whether it is used, HH remarked that the last time he had heard it was in his childhood.

MPs can be the complement of the preposition *a* (16) and serve as the standard.

- (16) Gay k'aa 'wii 'nakw 'nii'y a=hl k'i'y=hl t'im k'aax.  
 instead very big long 1SG.III PREP=CN one=CN whole arm  
 'I am taller than one arm length.' (VG-v., HH-v.)

MPs are also found sentence initially. Even in combination with morphologically positive constructions without *gay* 'instead' or *k'aa* 'exceedingly', they modify differential rather than absolute degrees (17, 18) (see also Section 4).

- (17) Context: This year is a leap year.  
 a. K'i'y=hl sa win 'wii 'nakw[=hl] k'uuhl t=un  
 one=CN day COMP big long[=CN] year PN=DEM.PROX  
 a=hl gi-k'uuhl.  
 PREP=CN last-year  
 'This year is one day longer than the last year.' (VG-v.)  
 b. (K'am) k'i'y=hl sa win 'wii 'nakw=hl k'uuhl gyuu'n  
 only one=CN day COMP big long=CN year now  
 a=hl gu-k'uuhl=gi.  
 PREP=CN last-year=PR.EVID  
 'This year is one day longer than the last year.' (HH-v.)

- (18) K'i'y=hl t'im k'aax win (gay) (k'aa) 'wii  
 one=CN whole arm COMP instead exceedingly big  
 'nakw[=hl] ha'niitookxw t=un e=s=ust.  
 long[=CN] table PN=DEM.PROX PREP=PN=DEM.DIST  
 'This table is one arm length longer than that one.' (VG)

It is not clear to me whether the MPs are base-generated in this position and acting as a predicate, taking the clause marked with *win* as

their argument, or they are extracted out of that clause. The morphology is consistent with that of adjunct extraction, which is accompanied by a complementizer and no other morphological marking (Davis and Brown 2011), but there is no instance of a differential MP appearing in its potential base position under such an analysis.

This pattern of MPs receiving differential interpretations in positive constrictions is shared with Japanese (e.g., Aonuki 2023; Kubota 2008; Oda 2008; Sawada and Grano 2011). Moreover, the existence of differential MPs has been argued to be a reliable diagnostic of degreefulness (Deal and Hohaus 2019; von Stechow 1984; cf. Bochnak et al. 2020).

#### 4 Other degree constructions and use of gradable nominals

This section describes some constructions that require gradable nominals rather than adjectives, namely absolute MPs, degree questions, degree demonstratives, and equatives. One exception is that absolute MP readings are possible with minimum-standard adjectives.

Translation of an absolute MP sentence with a relative adjective in English seems to require the prefix *ga-*, at least for VG (19).<sup>8</sup> Rigsby (1986) describes that *ga-* in Gitksan “forms abstract nominals that signify some attribute or entity” (95), and Tarpent (1987) similarly describes that *ga-* in Nisga’a attaches to an adjectival predicate and forms “an abstract noun” (244).<sup>9</sup> The entity always follows the *ga-*nominal, intervened by a connective.

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<sup>8</sup> HH pluralizes ‘foot’ to *se-se’e* when the measure is over 1 foot.

<sup>9</sup> I will refer to *ga-* forms as ‘nominals’, and while there isn’t independent evidence to confirm their nominal category, its distribution described in this section suggests that this assumption is correct.



(21) a. Nde=hl \*(ga)-'nagw-i-n?  
 WH=CN ga-long-?-2SG.II  
 'How tall are you?' (HH-v.)  
 (Lit. Where is your height?)

b. \*Nde=hl 'nakw 'nit?  
 WH=CN long 3SG.III  
 'How tall is she?' (VG)

Translations of degree demonstratives (22) and equatives (23) similarly involve a *ga-* nominal.<sup>11</sup>

(22) a. T=un=hl ga-'nagw-i-t.  
 PN=DEM.PROX=CN ga-long-?-3.II  
 'She is this tall.' (VG-v., HH-v.)

b. \*T=un=hl ('wii) 'nakw 'nit.  
 PN=DEM.PROX=CN (big) long 3SG.III  
 intended: 'She is this tall.' (VG)

(23) Sagay k'i'y=hl ga-hi'niiluxw-si'm.  
 together one=CN ga-tall.PL-1PL.II  
 lit. 'Our heights are the same.' (VG-v.)

## 5 Conclusion

This paper offered the first in-depth descriptions of comparative/superlative constructions and other degree constructions in Gitksan. Comparative/superlative interpretations are available for positive constructions as well as with the optional morphemes *gay* 'instead', *k'aa* 'exceedingly', and

<sup>11</sup> The status of the vowel *i* in (21a) and (22a) is unclear at this point. Tarpent (1987) treats its counterpart in Nisga'a as a suffix that occurs with *ga-* (244-246). While in (21a) alone, it could be an epenthetic vowel to break up the sequence of the consonantal sequence in \*'nakw-n, that hypothesis would not hold against (22a), where 'nakw-t would be phonologically licit (Henry Davis, Michael Schwan, p.c.).

the preposition *a*. Demonstrating the behaviours of *gay* as an alternative-sensitive morpheme outside comparatives/superlatives, I suggested that positive and *gay* constructions achieve comparative/superlative meanings by consideration of alternative(s), which is contributed pragmatically in the former and semantically in the latter. MPs receive obligatory differential interpretations with gradable adjectives, with the exception of minimum-standard adjectives. Absolute MPs, as well as degree questions, demonstratives, and equatives, require gradable nominals. Questions towards a formal analysis include 1) what the semantic contribution of *k'aa* is such that it is obligatory for comparatives/superlatives with minimum-standard adjectives but not relative adjectives; 2) why MPs receive differential interpretations with relative adjectives; 3) what the source(s) of the distinct behaviours of minimum-standard adjectives is formally; and 4) what explains the division of labour between gradable adjectives and nominals across degree constructions.

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