

# Gradable predicates and antonyms in Kanien'kéha

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January 15, 2026

## 1 Background

### 1.1 Gradable predicates

- Not all predicates (e.g. adjectives and verbs) are interpreted in the same way.
  - GRADABLE PREDICATES describe properties that can vary in degree or scale. They can be modified by intensifiers like *very* and compared with *more/-er* or *less*.
  - NON-GRADABLE PREDICATES describe absolute qualities that can't really be modified or compared.
- (1) a. John is **smart**; in fact, he's very **smart**. (Gradable)  
b. ??My bag is **empty**; in fact, it's very **empty**. (Non-gradable)
- (2) a. John is **tall** but not that **tall**. (Gradable)  
b. ??Paul is **dead** but not that **dead**. (Non-gradable)
- (3) a. The elephant is more **famous** than the mouse. (Gradable)  
b. ??The elephant is more **enormous** than the mouse. (Non-gradable)
- A common approach to explaining this difference is to say that some predicates involve degrees and some don't.
  - GRADABLE PREDICATES:  $\llbracket \text{tall} \rrbracket = \lambda d \lambda x. x \text{ is } d\text{-tall}$   
'tall' means that an individual is tall *to some degree*
  - NON-GRADABLE PREDICATES:  $\llbracket \text{empty} \rrbracket = \lambda x. x \text{ is empty}$   
'empty' means that an individual is empty

### 1.2 Antonyms

- One topic of research related to gradable predicates is ANTONYMY. Antonyms are predicates with opposite meanings.
- (4) a. tall  $\leftrightarrow$  short  
b. big  $\leftrightarrow$  small  
c. hot  $\leftrightarrow$  cold  
d. easy  $\leftrightarrow$  difficult  
e. strong  $\leftrightarrow$  weak  
f. expensive  $\leftrightarrow$  cheap
- In an antonym pair, there is a typically 'positive' form and a 'negative' form. Cross-linguistically, the positive form is less marked than the negative form.
- Positive forms allow measure phrases but negative forms do not.
- (5) **Measure phrases**

- a. Peter is six feet tall.
- b. ??Mary is five feet short.

⇒ Note that not all positive forms allow this! One way to explain this is through dividing gradable predicates into two natural classes: dimensional and evaluative.

(6) **Dimensional**

- a. The chair is two feet wide.
- b. The river is three feet deep.

(7) **Evaluative**

- a. ??The soup is 10 degrees hot.
- b. ??Mary is three PhDs smart.

- Only positive forms can occur with factor phrases like *twice*.

(8) **Factor phrases**

- a. Kate is twice as old as Jeff.
- b. ??Jeff is twice as young as Kate.

- In wh-questions and equatives, the negative form gives rise to an added presupposition.

(9) **Wh-questions**

- a. How tall is Paul?  
→ *Paul can be any height*
- b. How short is Paul?  
→ *Paul must be short*

(10) **Equatives**

- a. Paul is as tall as Mary.  
→ *Paul can be any height*
- b. Paul is as short as Mary.  
→ *Paul must be short*

- A related phenomenon that occurs with antonym pairs is CROSS-POLAR ANOMALY. Comparatives with polar antonyms are not good.

(11) **Cross-polar anomaly**

- a. ??Paul is taller than Mary is short.
- b. ??The table is wider than the chair is narrow.
- c. ??Joe is younger than his mom is old.

- These types of sentences can be improved if one of the adjectives isn't the direct polar antonym but it's still a little funky when the negative antonym is in the *than* clause.

- (12)
- a. My chair is shorter than yours is wide.
  - b. ?My chair is wider than yours is short.

## 2 Gradable predicates and antonymy in Kanien'kéha

- In English, polar antonyms are typically lexically unique (good/bad) but some are derived morphologically (happy/unhappy, agreeable/disagreeable, polite/im-polite).

- Cross-linguistically, the morphology used in polar antonyms like this is often related to negation or reversal (like in English).
- Research questions:
  - What do polar antonyms in Kanien'kéha look like?
  - Are there different strategies for creating antonyms? (lexical vs morphological)
  - Are there different classes? (dimensional vs evaluative)
  - Does negation or reversal play a role?
- Takeaways:
  - There are (at least) three strategies for deriving antonyms in Kanien'kéha:
    1. lexical
    2. morphological (diminutive)
    3. morphological (negative)
  - The first two exactly exemplify evaluative vs dimensional predicates, respectively. The third seems to be a failsafe strategy used to fill a gap in the lexicon.
  - The three types differ in their properties, giving us a clue as to how they should be interpreted and how they are formed, with insight for cross-linguistic notions of degree and polarity.

## 2.1 Type 1: Lexical antonyms

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|--|--|
| <p>(13) a. Io-iánere'.<br/>N.P-good<br/>'It is good.'</p> <p>b. Io-'tarihen.<br/>N.P-hot<br/>'It is hot.'</p> <p>c. Io-hskáts'.<br/>N.P-beautiful<br/>'It's beautiful.'</p> <p>d. Ra-shátste'.<br/>MsgA-strong<br/>'He is strong.'</p> <p>e. Io-hsnó:re'.<br/>N.P-fast<br/>'It is fast.'</p> <p>f. Io-hní:r-on'.<br/>N.P-hard-STAT<br/>'It is hard.'</p> <p>g. W-entó:re'.<br/>N.A-difficult<br/>'It is difficult.'</p> <p>h. Ró-re'sen.<br/>MsgP-fat<br/>'He is fat.'</p> | <p>i. Io-'táksen.<br/>N.A-bad<br/>'It is bad.'</p> <p>j. Io-wísto.<br/>N.P-cold<br/>'It is cold.'</p> <p>k. Ka-hétken.<br/>N.A-ugly<br/>'It is ugly.'</p> <p>l. Ro-tsi'ió:ha.<br/>MsgP-weak<br/>'He is weak.'</p> <p>m. Io-shá:ion.<br/>N.P-slow<br/>'It is slow.'</p> <p>n. Io-'nhétska.<br/>N.P-soft<br/>'It is soft.'</p> <p>o. W-at-ié:sen.<br/>N.P-SRFL-easy<br/>'It is easy.'</p> <p>p. Ro-tí:wen.<br/>MsgP-skinny<br/>'He is skinny.'</p> |
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## 2.2 Type 2: diminutive antonyms

- (14) a. Ra-hnén:ies.  
MsgA-tall  
'He is tall.'
- b. Io-hwá:r-es'.  
N.P-fur-long  
'The fur is long.'
- c. Ká:-tens.  
N.A-thick  
'It is thick.'
- d. Io-hnó:tes  
N.A-deep  
'It is deep.'
- e. Te-w-at-akà:ron.  
DUP-N.A-SRFL-wide  
'It is wide.'
- f. T-íó-tte'.  
CIS-N.P-be  
'It is high.'
- g. T-hó:-ien'.  
CIS-MsgP-have  
'He is old.'
- h. (Ken') ni-ha-hneniés-ha.  
this PART-MsgA-tall-DIM  
'He is short.'
- i. (Ken') ni-io-hwar-és-ha.  
this PART-N.P-fur-long-DIM  
'The fur is short.'
- j. (Ken') ni-ka-téns-ha.  
this PART-N.A-thick-DIM  
'It is thin.'
- k. (Ken') ni-io-hnotés-ha.  
this PART-N.P-deep-DIM  
'It is shallow.'
- l. (Ken') n-a'te-w-at-akahròn:-'a.  
this PART-DUP-N.A-SRFL-wide-DIM  
'It is narrow.'
- m. (Ken') ni-t-io-tè:-'a.  
this PART-N.P-be-DIM  
'It is low.'
- n. (Ken') ni-t-ho-ièn:-'a.  
this PART-MsgP-have-DIM  
'He is young.'
- (15) a. Tho ní:-w-a'.  
that PART-N.A-size  
'It is big.'
- b. Tho ní:-k-on.  
that PART-N.A-amount  
'It is a lot.'
- c. (Ken') ni-wà:-'a.  
this PART-N.A-size-DIM  
'It is small.'
- d. (Ken') ni-k-ón:-ha.  
this PART-N.A-amount-DIM  
'It is few.'

- *ken'* is not required in Akwesasne/western dialects (or in any other Haudenosaunee languages except Oneida).
- There *may* be an alternate way to make an antonym that is similar to this strategy but uses 'only' instead of a diminutive.

(16) Ken'-k ni-ha-hnén:ies.  
this-only PART-MsgA-tall  
'He's short.'

- Does this work with other predicates? Does it mean the same thing as the DIM version? A speaker said the DIM version sounds shorter.

### 2.3 Type 3: negation antonyms

- (17) a. Ka-nó:ron.  
N.A-expensive  
'It is expensive.'
- b. Ió-kste'.  
N.P-heavy  
'It is heavy.'
- c. Iah te-ka-nó:ron.  
no NEG-N.A-expensive  
'It is cheap.'
- d. Iah te-íó:-kste'.  
no NEG-N.P-heavy  
'It is light.'

- Are there other predicates that use this strategy?

- Is this for filling a gap? (for instance, in European French, 'cheap' is *bon marché* but in Quebec French, this word isn't used and instead people say *pas cher* 'not expensive')
- The DIM version of 'light' used to exist. It's in at least one old grammar and some speakers say that they've heard things like below. However, most say this is not good.

(18) É:so tsi ken' ni-io-kstè:-'a.  
 very C this PART-N.P-heavy-DIM  
 'It's very light.'

### 3 Properties of polar antonyms

#### 3.1 Type 1: lexical antonyms

(19) Summary of properties

|                      | Positive | Negative |
|----------------------|----------|----------|
| Morphology           | V        | V        |
| Measure phrase       | ✗        | ✗        |
| Degree question      | ✓        | ✓*       |
| Comparative standard | ?        | ?        |
| Exclamative          | ✓        | ✓        |

##### 3.1.1 Measure phrase

- (20) a. ?Ahsen niwahren ni-io-'taríhen.  
 thirty PART-N.P-hot  
 Intended: 'It's thirty degrees (hot).'
- b. ?Ahsen ni-io-wisto.  
 three PART-N.P-cold  
 Intended: 'It's thirty degrees (cold).'
- (21) Ahsen niwahren ni-t-ió-tte' tsi ni-io-'taríhen.  
 thirty PART-CIS-N.P-high C PART-N.P-hot  
 'It's thirty degrees.' (lit: thirty degrees is the temperature)

##### 3.1.2 Degree question

- (22) a. Tó: ni-io-'taríhen?  
 how PART-N.P-hot  
 'How hot is it?'
- b. Tó: ni-io-wisto?  
 how PART-N.P-cold  
 'How cold is it?' (presupposes it is cold)

##### 3.1.3 Comparatives - to check

- (23) Cross-polar anomaly
- a. ?Sénha io-'taríhen tsi ni-ió-ht tsi io-wisto.  
 more N.P-hot C PART-N.P-way C N.P-cold  
 Intended: 'It's hotter than it is cold.'
- b. ?Sénha io-wisto tsi ni-ió-ht tsi io-'taríhen.  
 more N.P-cold C PART-N.P-way C N.P-hot  
 Intended: 'It's colder than it is hot.'
- (24) a. He's more handsome than he is strong.  
 b. He's fatter than he is ugly.

##### 3.1.4 Exclamative

- (25) a. Ni-io-'tarihen!  
PART-N.P-hot  
'How hot it is!'
- b. Ni-io-wísto!  
PART-N.P-cold  
'How cold it is!'

### 3.1.5 Summary

- Pattern like evaluative gradable predicates in English.
- Unlike dimensional predicates like 'be tall', these struggle to appear with measure phrases and comparatives.

## 3.2 Type 2: DIM antonyms

- (26) Summary of properties

|                      | Positive | Negative   |
|----------------------|----------|------------|
| Morphology           | V        | PART-V-DIM |
| Measure phrase       | ✓        | ✗          |
| Degree question      | ✓        | ✗          |
| Comparative standard | ✓        | ✗          |
| Exclamative          | ✓        | ✗          |

### 3.2.1 Measure phrase

- (27) a. Ià:ia'k ni-w-ahsi:t-ake  
six PART-N.A-foot-count  
ni-ha-hnén:ies.  
PART-MsgA-tall  
'He is six feet tall.'
- b. \*Áhsen ni-w-ahsi:t-ake  
three PART-N.A-foot-count  
ni-ha-hneniés-ha.  
PART-MsgA-tall-DIM  
Intended: 'He is three feet short.'

### 3.2.2 Degree question

- (28) a. Tó: ni-ha-hnén:ies?  
how PART-MsgA-tall  
'How tall is he?' (no presup)
- b. \*Tó: ni-ha-hneniés-ha?  
how PART-MsgA-tall-DIM  
Intended: 'How short is he?'
- (29) Tó: ni-ió:-re' ken' ni-ka-téns-ha?  
how PART-N.P-extent this PART-N.A-thick-DIM  
'How thin is it?' (lit: to what degree is it thin?)

### 3.2.3 Comparative standard

- (30) Cross-polar anomaly
- a. \*Kí:ken sénha ka-hiaton-hser-á:tens tsi ní:-io-ht tsi thí:ken ken' ni-ka-hiaton-hser-aténs-ha.  
this more N.A-book-NMLZ-thick C PART-N.P-way C that this PART-N.A-book-NMLZ-thick-DIM  
Intended: 'This book is thicker than that book is thin.'
- b. \*Kí:ken sénha ken' ni-ka-hiaton-hser-aténs-ha tsi ní:-io-ht tsi thí:ken ka-hiaton-hser-á:tens.  
this more this PART-N.A-book-NMLZ-thick-DIM C PART-N.P-way C that N.A-book-NMLZ-thick  
Intended: 'This book is thinner than that book is thick.'
- (31) Kó:r sénha ra-hnén:ies tsi ni-io-hnó:tes ne iontawenhstákhwa.  
Paul more MsgA-tall C PART-N.P-deep NE pool  
'Paul is taller than the pool is deep.'

### 3.2.4 Exclamative

- (32) a. Ni-ha-hnén:ies!  
PART-MsgA-tall  
'How tall he is!'
- b. \*Ni-ha-hneniés-ha!  
PART-MsgA-tall-DIM  
Intended: 'How short he is!'

### 3.2.5 Summary

- These positive forms pattern like dimensional gradable predicates but the negative forms do not.
- These are a different beast than the lexical antonyms: why don't these negative forms work with degree questions or measure phrases? (not shown here; they also don't work in constructions interpreted like free relatives 'how tall he is' vs 'how short he is').
- These properties do not fall out naturally from an analysis of polar antonyms based on negation or degree reversal → wider typology of polarity
- Initial theory: DIM saturates degree argument in a way that 'closes off' the derivation from additional degree modification.

### 3.3 Type 3: NEG antonyms

(33) Summary of properties

|                      | Positive | Negative |
|----------------------|----------|----------|
| Morphology           | V        | no NEG-V |
| Measure phrase       | ✓        | ✗        |
| Degree question      | ✓        | ✗        |
| Comparative standard | ✓        | ✗        |
| Exclamative          | ✓        | ✗        |

#### 3.3.1 Measure phrase

- (34) a. Wísk ni-ka-kontsher-á:ke  
five PART-N.A-pound-count  
ni-ió-kste'.  
PART-MsgA-heavy  
'It is five pounds heavy.'
- b. \*Iah áhsen ni-ka-kontsher-á:ke  
no three PART-N.A-pound-count  
te-ió-kste'.  
NEG-MsgA-heavy  
Intended: 'It is three pounds light.'

#### 3.3.2 Degree question

- (35) a. Tó: ni-ió-kste'.  
how PART-N.P-heavy  
'How heavy is it?'
- b. \*Iah tó: te-ió-kste'?.  
no how NEG-N.P-heavy  
Intended: 'How light is it?'

#### 3.3.3 Comparative standard - to collect

- (36) a. The book is heavier than it is not heavy.  
b. The book is more not heavy than it is heavy.
- (37) a. The book is more expensive than it is good.  
b. The book is prettier than it is cheap.

#### 3.3.4 Exclamative

- (38) a. Ni-ka-nó:ron!  
 PART-N.A-expensive  
 'How expensive it is!'
- b. \*Iah te-ka-nó:ron!  
 no PART-N.A-expensive  
 Intended: 'How cheap it is!'

### 3.3.5 Summary

- Pattern like DIM predicates in properties.
- Unlike DIM predicates, these can't appear with same clause negation, suggesting that this is just normal negation and not some lower negation (like in other languages with morphological negative antonyms).
- These are not "real" negative antonyms (can't find a range between positive and negative); no difference between cheap and not expensive.

### 3.4 Conclusion

- Kanien'kéha has three different types of polar antonymy.
  1. Lexical antonyms pattern like evaluative lexical predicates in English.
  2. DIM antonyms exhibit a unique pattern: positive forms pattern like evaluative predicates but negative forms do not
  3. NEG antonyms also pattern uniquely.
- The reason these two types pattern uniquely is likely due to different reasons.
  - DIM plays the role of a degree argument, closing off further degree modification. This is a typologically rare (unique?) strategy for creating this type of reading.
  - Clause-level NEG is not reversing degrees; it's just doing normal negation, giving rise to an ambiguity between average and negative readings. This feels like a lexical gap strategy.
- Random tidbits:
  - Equatives: the way Kanien'kéha does equatives is very different from languages like English – the degree has to be exactly the same – therefore, they can't be used to test the presupposition property of lexical antonyms in the same way that degree questions can. That being said, DIM negative forms prohibit equatives, in line with the wh-question diagnostic.

- (39) a. Sh-a'te-hni-hnén:ies.  
 COINC-DUP-MduA-tall  
 'They're tall to the same degree.'
- b. ??(Ken') sh-a'te-hni-hneniés-ha.  
 this COINC-DUP-MduA-tall-DIM  
 Intended: 'They're short to the same degree.'

- Ken'k negative forms: I am still trying to see how productive these are and whether they are truly negative forms. They seem to have derived from demonstrative uses with specific reference degrees marked by hand/context.

- (40) Ken'-k n-a'te-ka-hsì:ta-'s.  
 this-only PART-DUP-N.A-foot-DISTRIB  
 'My feet are so small/only this small.'