Comparative morphemes are additive particles: English *-er*/*more* vs. Chinese *gèng*

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What are morphemes like English *-er*/*more* doing?

- Many languages (e.g., English, French) require the use of a comparative morpheme in the comparative use of gradable adjectives:

(1) a. Lucy is tall.   **Positive**: tall
     b. Lucy is taller than Mary is.   **Comparative**: taller

(2) a. Lucy has many books.   **Positive**: many
     b. Lucy has more books than Mary does.   **Comp.**: more

(3) **French data**

     a. Jean est   grand.
         John be.3sg tall
         'John is tall.'   **Positive**: grand 'tall'
     b. Jean est   plus grand que   Pierre.
         John be.3sg more tall   what Peter.
         'John is taller than Peter.'   **Comp.**: plus+grand 'taller'

What are morphemes like English *-er*/*more* doing?

- However, many other languages (e.g., Chinese, Japanese) don't make a distinction between the comparative vs. non-comparative use:

(4) **Chinese data**

    a.   Lèlè gāo ma?
           Lèlè tall Q
           'Is Lèlè tall?'   **Positive**: gāo 'tall'

    b.   Lèlè bǐ   Mǐmǐ gāo ma?
           Lèlè STDD Mǐmǐ taller Q
           'Is Lèlè taller than Mǐmǐ?'   **Comp.**: gāo 'taller'

(5) **Japanese data**

    a.   Rika-wa (se-ga)   taka-i.
           Rika-TOP back-NOM tall-PRES
           'Rika is tall.'   **Positive**: taka- 'tall'

    b.   Rika-wa Makoto-yori (se-ga)   taka-i.
           Rika-TOP Makoto-STDD back-NOM tall-PRES
           'Rika is taller than Makoto.'   **Comp.**: taka- 'taller'

Research questions

- Does the meaning of comparison hinge on morphemes like *-er*/*more*?
- If not,
  - What lexical items are responsible for comparison?
  - Then what does *-er*/*more* do?
- How about languages like Chinese and Japanese?

Take-home messages

- Does the meaning of comparison hinge on morphemes like *-er*/*more*?
  - No.
- What lexical items are responsible for comparison?
  - Gradable adjectives, which encode (strict or non-strict) inequalities
- What does *-er*/*more* do?
  - They are additive particles like *another*, denoting an increase anaphoric to a contextually salient base item.
- How about languages like Chinese and Japanese?
  - In these languages, gradable adjectives encode inequalities in a strict way, making the use of an *-er*-like morpheme unnecessary.
  - These languages have optional morphemes:
    Chinese *gèng* and Japanese *motto* work like additive particle *moreover*, indicating a threshold with enhanced positiveness for the positive use of gradable adjectives.

Overlap between this talk and my lectures today and tomorrow
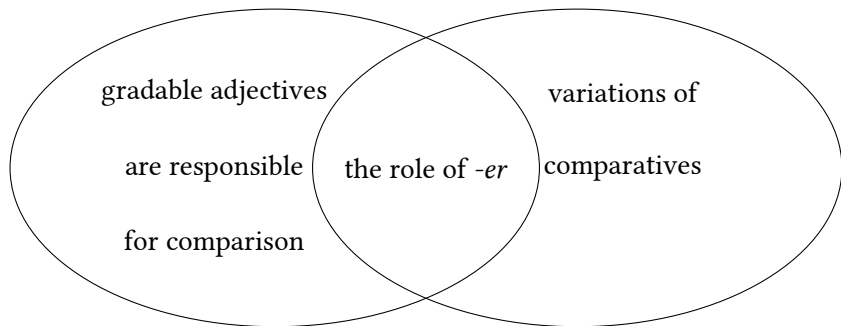
gradable adjectives

are responsible

for comparison

the role of *-er*

variations of

comparatives

Outline

Canonical analysis: *-er/more* performs comparison

- A **gradable adjective** relates a degree and an entity.

(6) $[\![\text{tall}]\!]_{\langle d,et \rangle} \overset{\text{def}}{=} \lambda d.\lambda x.\textsc{height}(x) \geq d$ a relation between d and x
$\rightsquigarrow$ the height of x reaches the degree d, i.e., x is tall to degree d

- Major non-comparative uses of gradable adjectives:

(7) $[\![\text{Lucy is POS tall}]\!] \Leftrightarrow \textsc{height}(\text{Lucy}) \geq d^c_{\text{POS}}$ **Positive use**
(i.e., the height of Lucy reaches the contextual threshold of being tall.)

(8) $[\![\text{Lucy is 5 feet 8 inches tall}]\!] \Leftrightarrow \textsc{height}(\text{Lucy}) \geq 5'8''$ **Measure**

(9) $[\![\text{how tall is Lucy}]\!] \Leftrightarrow \lambda d.\textsc{height}(\text{Lucy}) \geq d$ **Degree question**

(e.g., Cresswell 1976, Hellan 1981, von Stechow 1984, Heim 1985, Kennedy 1999, Beck 2011)

Canonical analysis: *-er/more* performs comparison

- **Comparative morpheme** *-er/more* performs comparison by expressing the relation '>' between two degrees.

(10)   ⟦Lucy is tall**er** than Mary is t̶a̶l̶l̶ ⟧ ⇔ $\text{HEIGHT}(L) > \text{HEIGHT}(M)$

$\underbrace{\phantom{\text{than Mary is tall}}}_{\text{comparison standard}}$

LF: [-er [λd.Mary is d-tall]] [$\lambda d'$.Lucy is d'-tall]
(i.e., lambda abstraction happens at both the matrix and the *than*-clause, leading to two sets of degrees)

(11)   a. $\llbracket\text{-er}\rrbracket_{\langle\langle dt\rangle,\langle dt,t\rangle\rangle} \overset{\text{def}}{=} \lambda D_1.\lambda D_2.\text{MAX}(D_2) > \text{MAX}(D_1)$
($\text{MAX} \overset{\text{def}}{=} \lambda D.\iota d[d \in D \wedge \forall d'[d' \in D \to d' \leq d]]$)

(see e.g., Beck 2011)

b. $\llbracket\text{-er}\rrbracket_{\langle\langle dt\rangle,\langle dt,t\rangle\rangle} \overset{\text{def}}{=} \lambda D_1.\lambda D_2.\exists d[d \in D_2 \wedge d \notin D_1]$

(see e.g., Schwarzschild 2008)

- However, there are empirical challenges ...

The use of *-er*/*more* is not always required for comparison

- All uses of gradable adjectives involve comparison, but the use of *-er*/*more* is not always required.
  I.e., *-er*/*more* is not a necessary component of comparison.

(12) a. $\llbracket$Lucy is POS tall$\rrbracket \Leftrightarrow \text{HEIGHT}(\text{Lucy}) \geq d^c_{\text{POS}}$

  Positive use

  b. $\llbracket$Lucy is $5'8''$ inches tall$\rrbracket \Leftrightarrow \text{HEIGHT}(\text{Lucy}) \geq 5'8''$ **Measure**

  c. $\llbracket$how tall is Lucy$\rrbracket \Leftrightarrow \lambda d.\text{HEIGHT}(\text{Lucy}) \geq d$ **Degree Q**.

  d. $\llbracket$Lucy is as tall as Bill (is)$\rrbracket \Leftrightarrow \text{HEIGHT}(\text{Lucy}) \geq \text{HEIGHT}(\text{Bill})$

  Equative

  e. $\llbracket$Lucy is taller than Mary (is)$\rrbracket \Leftrightarrow \text{HEIGHT}(\text{L}) > \text{HEIGHT}(\text{M})$

  Comparative

Minimal pairs

- Minimal pairs indicate that the use of *-er*/*more* does not bring comparison, but rather affects (i) what constitutes the comparison standard and/or (ii) the size of the differential.

(13)   a.   Mary is not tall. Lucy is tall. $\leadsto$ HEIGHT(Lucy) $\geq d^c_{\text{POS}}$

       b.   Mary is not tall. Lucy is taller. $\leadsto$ HEIGHT(L) $\geq$ HEIGHT(M)

(14)   a.   Compared to Mary, Lucy is tall.   **Implicit comparison**

                                $\leadsto$ HEIGHT(Lucy) $\geq d^c_{\text{POS}}$

         (i)   Compared to 2-year-old toddlers, Lucy is tall.

         (ii)   (Even) compared to professional basketball players, Lucy is tall.

       b.   Compared to Mary, Lucy is taller.   **Explicit comparison**

                                $\leadsto$ HEIGHT(L) $\geq$ HEIGHT(M)

(See Kennedy 2007 on crisp judgment)

Antonyms

- The lexical meaning of gradable adjectives includes already inequalities, and antonyms encode inequalities of different directions.

(15)   a. $[\![\text{tall}]\!]_{\langle d,et \rangle} \overset{\text{def}}{=} \lambda d.\lambda x.\text{HEIGHT}(x) \geq d$

          b. $[\![\text{short}]\!]_{\langle d,et \rangle} \overset{\text{def}}{=} \lambda d.\lambda x.\text{HEIGHT}(x) \leq d$

Interim summary

- The essence of comparison is to establish inequalities.
- The lexical semantics of gradable adjectives already contains inequalities.
- Naturally, expressing the meaning of comparison should essentially be based on the meaning of gradable adjectives, not necessarily involving *-er*/*more*.

Outline

English comparatives vs. Chinese comparatives

(16) a. Lucy is taller than Mary is. $\textsc{height}(L) > \textsc{height}(M)$
  b. Lèlè bǐ   Mǐmǐ gāo.
      Lèlè STDD Mǐmǐ taller
   'Lèlè is taller than Mǐmǐ.' $\textsc{height}(L) > \textsc{height}(M)$

(12) a. ⟦Lucy is POS tall⟧ ⟺ $\textsc{height}(\text{Lucy}) \geq d^c_{\textsc{pos}}$
                                                          Positive use
  b. ⟦Lucy is 5′8″ inches tall⟧ ⟺ $\textsc{height}(\text{Lucy}) \geq 5'8''$ **Measure**
  c. ⟦how tall is Lucy⟧ ⟺ $\lambda d.\textsc{height}(\text{Lucy}) \geq d$ **Degree Q.**
  d. ⟦Lucy is as tall as Bill (is)⟧ ⟺ $\textsc{height}(\text{Lucy}) \geq \textsc{height}(\text{Bill})$
                                                          Equative
  e. ⟦Lucy is taller than Mary (is)⟧ ⟺ $\textsc{height}(L) > \textsc{height}(M)$
                                                          Comparative

- Our proposal on the meaning of gradable adjectives:
  ‣ English gradable adjectives encode a non-strict inequality, and with the use of *-er/more*, comparatives express a strict inequality.
  ‣ Chinese gradable adjectives directly encode a strict inequality.

Lexical semantics of gradable adjective *tall*/*gāo*
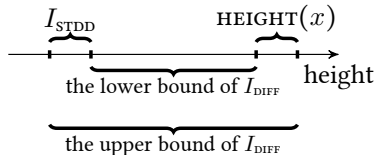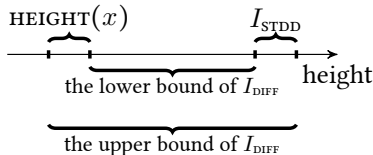
The meaning of *tall*/*gāo*   The meaning of *short*/*ǎi*

(17) $[\![\text{tall}]\!] \overset{\text{def}}{=} \lambda I_{\text{DIFF}}.\lambda I_{\text{STDD}}.\lambda x.\underbrace{I_{\text{DIFF}} \subseteq [0, +\infty)}_{\text{non-negative presup.}}. \text{HEIGHT}(x) \subseteq \iota I[I - I_{\text{STDD}} = I_{\text{DIFF}}]$ English

      (i.e., the height of x reaches the comparison standard, I_{STDD}.
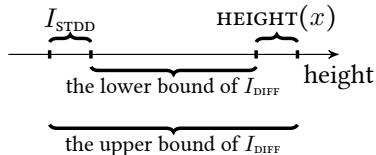 $\leadsto$ the difference between them, I_{DIFF}, is non-negative)

(18) $[\![\text{gāo}]\!] \overset{\text{def}}{=} \lambda I_{\text{DIFF}}.\lambda I_{\text{STDD}}.\lambda x.\underbrace{I_{\text{DIFF}} \subseteq (0, +\infty)}_{\text{positive presup.}}. \text{HEIGHT}(x) \subseteq \iota I[I - I_{\text{STDD}} = I_{\text{DIFF}}]$ Chinese

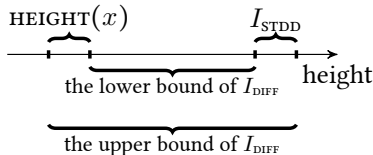   (i.e., the height of x exceeds the comparison standard, I_{STDD}.
      $\leadsto$ the difference between them, I_{DIFF}, is positive)

Lexical semantics of gradable adjective *short/ǎi*

The meaning of *tall/gāo*   The meaning of *short/ǎi*

(19) $[\![\text{short}]\!] \stackrel{\text{def}}{=} \lambda I_{\text{DIFF}}.\lambda I_{\text{STDD}}.\lambda x.\underbrace{I_{\text{DIFF}} \subseteq [0, +\infty)}_{\text{non-negative presup.}}.\ \textsc{hght}(x) \subseteq \iota I[I_{\text{STDD}} - I = I_{\text{DIFF}}]$ English

    (i.e., the height of x does not exceed the comparison standard, I_{STDD}.
    $\rightsquigarrow$ the difference between them, I_{DIFF}, is non-negative)

(20) $[\![\text{ǎi}]\!] \stackrel{\text{def}}{=} \lambda I_{\text{DIFF}}.\lambda I_{\text{STDD}}.\lambda x.\underbrace{I_{\text{DIFF}} \subseteq (0, +\infty)}_{\text{positive presup.}}.\ \textsc{height}(x) \subseteq \iota I[I_{\text{STDD}} - I = I_{\text{DIFF}}]$ Chinese

    (i.e., the height of x is below / does not reach the comparison standard, I_{STDD}.
    $\rightsquigarrow$ the difference between them, I_{DIFF}, is positive)

The positive use of gradable adjectives

- In the positive use,
  - the comparison standard is the contextual threshold
  - the difference cannot be specified by a numerical value, but can be modified by modifiers like *very*, *quite*, etc.

(21) $[\![$Lucy is POS tall$]\!]$ English

$\Leftrightarrow \text{HEIGHT}(\text{Lucy}) \subseteq \iota I[I - \underbrace{[d^c_{\text{POS}}, d^c_{\text{POS}}]}_{I_{\text{STDD}}} = \underbrace{[0, +\infty)}_{I_{\text{DIFF}}}]$

$\Leftrightarrow \text{HEIGHT}(\text{Lucy}) \subseteq [d^c_{\text{POS}}, +\infty)$

(i.e., the height of Lucy reaches the contextual threshold of being tall)

(22) $[\![$Lucy hěn POS gāo$]\!]$ Chinese

$\Leftrightarrow \text{HEIGHT}(\text{Lucy}) \subseteq \iota I[I - \underbrace{[d^c_{\text{POS}}, d^c_{\text{POS}}]}_{I_{\text{STDD}}} = \underbrace{(0, +\infty)}_{I_{\text{DIFF}}}]$

$\Leftrightarrow \text{HEIGHT}(\text{Lucy}) \subseteq (d^c_{\text{POS}}, +\infty)$

(i.e., the height of Lucy exceeds the contextual threshold of being tall)

Measurement sentences

- In measurement sentences,
  - the comparison standard is the absolute zero point, i.e., $[0,0]$
  - the difference is specified by a numerical value, e.g., $5'8''$, $1.7m$.

(23) ⟦Lucy is 5 feet 8 inches tall⟧   English
$\Leftrightarrow$ HEIGHT(Lucy) $\subseteq \iota I[I - [0,0] = [5'8'', +\infty) \cap [0, +\infty)]$
$\Leftrightarrow$ HEIGHT(Lucy) $\subseteq [5'8'', +\infty)$

(24) ⟦Lucy (yǒu) 1.7 m gāo⟧   Chinese
$\Leftrightarrow$ HEIGHT(Lucy) $\subseteq \iota I[I - [0,0] = [1.7m + \infty) \cap (0, +\infty)]$
$\Leftrightarrow$ HEIGHT(Lucy) $\subseteq [1.7m, +\infty)$

Comparatives

- In comparatives,
  - the comparison standard is from the meaning of the *than*-clause (or context)
  - the difference can by optionally specified by a numerical value, e.g., $3''$, $5cm$.

(25) $[\![\text{Lucy is tall} \underbrace{\text{er}}_{(0,+\infty)} \underbrace{\text{than Mary is}}_{I_{\text{STDD}}}]\!]$

$\Leftrightarrow \text{HEIGHT}(\text{Lucy}) \subseteq \iota I[I - \text{HEIGHT}(\text{Mary}) = \underbrace{(0,+\infty)}_{[\![\text{er}]\!]} \cap [0,+\infty)]$

$\Leftrightarrow \text{HEIGHT}(\text{Lucy}) \subseteq \iota I[I - \text{HEIGHT}(\text{Mary}) = (0,+\infty)]$

(26) $[\![\text{Lèlè bǐ Mǐmǐ gāo}]\!]$
$\Leftrightarrow \text{HEIGHT}(\text{Lèlè}) \subseteq \iota I[I - \text{HEIGHT}(\text{Mǐmǐ}) = (0,+\infty)]$

Comparison in English vs. Chinese

- Within our proposed view, comparison is universally conducted by gradable adjectives
  - For languages that require the use of *-er* in comparatives (e.g., English): gradable adjectives encode a non-strict inequality
    (In terms of degrees: '$\geq$'; in terms of intervals: '$[0, +\infty)$')
  - For languages that use the same form for the comparative and non-comparative uses (e.g., Chinese): gradable adjectives encode a strict inequality
    (In terms of degrees: '$>$'; in terms of intervals: '$(0, +\infty)$')

Outline

Parallelism between *-er*/*more* and *another*

- *-er*/*more* has an additive use similar to *another* (see also Greenberg 2010 and Thomas 2010):

(27)   **Increase in the domain of entities: Additive use**

    a.   I ate an^x apple. Then I ate **$another^y$** (apple).

                      base item   increase

    b. A^x girl, Sue, met **$another^y$** girl, Mary.

           base item   increase

    c.   I ate two^x bars of chocolate. Then I ate (a bit) **$more^y$**.

                    base item   increase

From the additive use to the comparative use of *-er*/*more*

- Additive use of *more*: in the domain of entities
- Comparative use of *-er*/*more*: in the domain of scalar values (i.e., degrees or intervals)

(27c) **Increase in the domain of entities: Additive use**
I ate two^x bars of chocolate. Then I ate (a bit) **more**^{y}.
base item — increase

(28) **Increase in the domain of scalar values: Comparative use**

a. Mary is tall. Sue is tall **er** . Across sentences
base item: HEIGHT(Mary) — increase

b. Sue is tall **er** than Mary is tall. Within the same sentence
increase — base item: HEIGHT(Mary)

More uses of *-er*/*more* and *another*

- *-er*/*more* and *another*
  - ‣ denotes an <u>increase</u> in the domain of entities or scalar values
  - ‣ presuppose there is a salient base that the increase is anaphoric to

(29) **Repetitive use of *-er*/*more* and *another***
  a. Lucy is becoming taller and taller and taller.
  b. Janice had a little lamb and another and another and another.

(30) **Accumulating increases along with a universal quantifier**
  a. Every year Mary wrote a more interesting book.
  b. Everyday there is another story to write.

The anaphoricity of *-er*/*more*

- **Additivity** should be considered a phenomenon of **QUD-based anaphoricity**, indicating an extension of a previous salient answer in addressing the QUD
  - For the **additive use** in the domain of entities, *more* / *another* indicates an **increase from a part to a whole**.
  - For the **comparative use** in the domain of scalar values, *-er*/*more* indicates an **increase from a lower to a higher scalar value**.

(31) **Additive use of *more***
   Current question (CQ): What did you eat?

   a.   I ate <u>two bars of chocolate</u>. Then I ate <u>(a bit) more</u>.

   <div align="center">base item:
a partial answer to the CQ   increase</div>

   b.   #I didn't eat a bar of chocolate. Then I ate more.

   (e.g., Roberts 1996/2012, Zeevat 2004, Zeevat and Jasinskaja 2007, Beaver and Clark 2009, Thomas 2011, Zhang and Ling 2021)

The anaphoricity of *-er*/*more*

- Additivity should be considered a phenomenon of QUD-based anaphoricity, indicating an extension of a previous salient answer in addressing the QUD
  - ‣ For the additive use in the domain of entities, *more* / *another* indicates an increase from a part to a whole.
  - ‣ For the comparative use in the domain of scalar values, *-er*/*more* indicates an increase from a lower to a higher scalar value.

(32) **Comparative use of *-er*/*more***
Current question (CQ): How tall is Sue?
Mary is not tall. Sue is tall ⸺er⸺ .

base item – a partial answer
to the CQ: HEIGHT(Mary)

increase

(e.g., Roberts 1996/2012, Zeevat 2004, Zeevat and Jasinskaja 2007, Beaver and Clark 2009, Thomas 2011, Zhang and Ling 2021)

The semantics of English *-er/more*

- The semantics of English *-er/more* is not responsible for comparison.
- English *-er/more* is similar to *another* in being an additive particle, denoting an increase on a discourse-salient base.

The distribution of *-er/more* and *another*

- English comparatives require the use of *-er/more*.
- English also requires the use of *another* when *another* can be used.
- *-er*-less languages like Chinese and Korean do not have these requirements.

(33)　**English: (an)other is obligatorily required; *also* is optional**
　　a.　*A girl came. A girl also came.
　　b.　 A girl came. Another girl (also) came.　　　　　　(*also*: optional)

The distribution of *-er/more* and *another*

- English comparatives require the use of *-er/more*.
- English also requires the use of *another* when *another* can be used.
- *-er*-less languages like Chinese and Korean do not have these requirements.

(34)   **Chinese: (an)other is optional; *again* is obligatory**

    lái-le   yí-gè   rén,   yòu lái-le   (lìng)-yí-gè   rén.
    come-ASP one-CL person again come-ASP (other)-one-CL person

    'A person came. Another person also came.'

(35)   **Korean: (an)other is optional**

    han salam-kwa (tto)   han salam-i   manna-ss-ta
    one person-and (again) one person-NOM meet-PST-DECL

    'A person met another person.'

Outline

The optional presence of *gèng* in Chinese comparatives

(36) Lèlè bǐ   Mǐmǐ (**gèng**)   gāo.
      Lèlè STDD Mǐmǐ MOREOVER tall
      'Lèlè is taller than Mǐmǐ.'

- The presence of *gèng* is optional.
  - ‣ Some scholars (Liu 2010, Chen 2023) claim that the semantic contribution of *gèng* is similar to English *even*, and the above sentence means that Lèlè is even taller than Mǐmǐ, indicating that Mǐmǐ is already tall.
  - ‣ Others (e.g., Guo 2022) claim that there is no obvious meaning distinction between the sentence with vs. without *gèng*.

What is special about *gèng*

- The use of *gèng* is incompatible with numerical differentials (see Ma 2019, Zhang 2023).

(37) * Lèlè bǐ   Mǐmǐ **gèng**   gāo wǔ límǐ.
       Lèlè STDD Mǐmǐ MOREOVER taller five cm
       Intended: 'Lèlè is 5 cm taller than Mǐmǐ.'

- *gèng* also has an additive use (see also Chen 2023):

(38) Jīnqián mǎi-bú-dào yǒu-yì,   **gèng**   mǎi-bú-dào àiqíng
      money buy-NEG-get friendship MOREOVER buy-NEG-get love
      'Money cannot buy friendship. Moreover, it cannot buy love.' ⤳
      Love exceeds friendship in being unable to be bought with money.

More observations on Chinese *gèng*

- The use of *gèng* is reminiscent of implicit comparison and the use of *moreover*.

(39) a. Lèlè bǐ   Mǐmǐ **gèng**   gāo.
        Lèlè STDD Mǐmǐ MOREOVER tall
        'Lèlè is taller than Mǐmǐ.'

   b. Compared to Mǐmǐ, Lèlè is tall.   **Implicit comparison**
        ↝ Lèlè's height reaches a threshold that Mǐmǐ's height doesn't.

(40) a. Jīnqián mǎi-bú-dào yǒu-yì,   **gèng**   mǎi-bú-dào àiqíng
        money buy-NEG-get friendship MOREOVER buy-NEG-get love
        'Money cannot buy friendship. Moreover, it cannot buy love.'

   b. Money cannot buy friendship. **Moreover**, it cannot buy love.
        ↝ The preciousness of love reaches a threshold that the preciousness of friendship doesn't.

Chinese *gèng* is also an additive particle

- Our proposal:
  - With the use of *gèng*, the use of a gradable adjective is essentially a positive use (like the one in implicit comparison).
    - ★ Thus the use of *gèng* is never compatible with numerical differentials.
- $[\![$gèng / moreover$]\!](p)$
  - asserts the prejacent p
  - presupposes that the prejacent p and alternatives are associated with scalar values on a scale, and compared with alternatives, p exceeds a positive level that alternatives don't.

(36)　a.　Lèlè bǐ　　Mǐmǐ **gèng**　　gāo.
　　　　　Lèlè STDD Mǐmǐ MOREOVER tall
　　　　　'Lèlè is taller than Mǐmǐ.'

　　　b.　Compared to Mǐmǐ, Lèlè is tall.　　　　**Implicit comparison**
　　　　　⤳ Lèlè's height reaches a threshold that Mǐmǐ's height doesn't.

(37b)　Money cannot buy friendship. **Moreover**, it cannot buy love.

Comparison can be compatible with various additive particles

- The use of *-er*/*more* in English comparatives is similar to the use of *another*.
- The use of Chinese *gèng* is similar to English *moreover*, making the positive use of a gradable adjective like implicit comparison.
- How about other particles?

Chinese *gèng* vs. Chinese *hái*
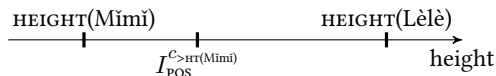
⟦Lèlè bǐ Mǐmǐ gèng gāo⟧: Compared to Mǐmǐ, Lèlè is tall.
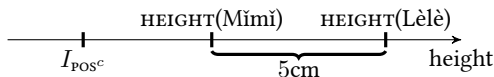
⟦Lèlè bǐ Mǐmǐ hái gāo (5cm)⟧: Lèlè is even (5 cm) taller than Mǐmǐ.

- Presumably, the semantics of Chinese *hái* is similar to English *even* (see Greenberg 2018, Zhang 2022 for a scalarity-based view on *even*).

Outline

Concluding remarks

- Comparison / inequality is universally conducted by gradable adjectives, which encode (strict or non-strict) inequalities.
  - ‣ English gradable adjectives encode a non-strict inequality.
  - ‣ Chinese gradable adjectives encode a strict inequality, making it unnecessary to use an *-er*-like morpheme in comparatives.

- English morpheme *-er*/*more* is an additive particle like *another*, denoting an increase anaphoric to a contextually salient base item.

- Languages like Chinese also have optional morphemes in comparatives.
  - ‣ In particular, Chinese *gèng* works like additive particle *moreover*, indicating a threshold with enhanced positiveness for the positive use of gradable adjectives.

Thank you!

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For the manuscript of this project, please see
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