Chinese *gèng*, English implicit comparison, and vagueness sharpening

Overview. We propose that Chinese *gèng* works in a way similar to English implicit comparison (see Kennedy 2007, Sawada 2009), manipulating the context in such a way that the positive form of a gradable adjective is true of the target under comparison and false of alternatives to the target. In this sense, Chinese *gèng* is a **vagueness sharpener** (see Barker 2002), introducing a new threshold for the positive use, sharpening what counts as, e.g., tall, in a local context.

Data. Chinese (and languages like Korean and Japanese) lacks an *-er*-like morpheme, and the positive and comparative use of gradable adjectives are morphologically the same (see 1).

(1) John hé Mary, shéi gāo?
and who tall(er) (Between) John and Mary, who is tall(er)?

Gèng optionally appears in a *bǐ*-sentence (see 2), but its semantic contribution is elusive. Liu (2010) and Chen (2024) analyze *gèng* as an *even*-like particle, claiming that with *gèng*, (2) means 'John is even taller than Mary' and has a positive inference (or evaluativity) for the comparison standard (i.e., Mary is already tall). Guo (2022) denies that the use of *gèng* necessarily leads to the evaluativity for the standard. With the use of *gèng*, (2) can still be felicitously followed by 'of course, Mary does not really count as tall'. The use of *gèng* gives the impression that the height difference is significant, making the sentence infelicitous in a Crisp-Judgment context.

(2) John bǐ Mary (gèng) gāo. STDD:=standard marker
STDD GENG tall(er) 'Compared to M, J is tall(er).' (*gèng* is **optional**.)

(3) and (4) are felicitous answers to questions like (1) and they contain explicit information on the evaluativity of the standard. If the standard is not tall, *gèng* is **optional** (see 3), but if the standard is already tall, *gèng* is **required** (see 4).

(3) John bù gāo. Mary (gèng) gāo.
NEG tall(er) John GENG tall(er)
'John is not tall. Mary is taller.'

(4) John hěn gāo. Mary *(gèng) gāo.
very tall(er) GENG tall(er)
'John is tall. Mary is taller.'

Based on (2–4), (i) a felicitous use of *gèng* does not require a positive inference for the standard, but (ii) if the positiveness of the standard is explicitly uttered, the use of *gèng* is required.

Additionally the use of *gèng* is never compatible with a numerical difference (Ma 2019). E.g. for (2–4), when *gèng* is present, including a numerical to specify the difference between John and Mary's height results in ungrammaticality: **gèng gāo 5cm* 'taller by 5cm'.

Analysis. We propose in *gèng gāo* (i) the use of gradable adjective *gāo* is not a comparative but a positive use; (ii) the use of *gèng* introduces a contextual threshold for this positive use. Thus with *gèng*, (2) is unambiguously an **implicit comparison** 'Compared to Mary, John is tall.'

We follow Baker (2002) and Zhang & Zhang (2024) and combine dynamic semantics and an interval-based analysis of gradable adjectives. The dynamic denotation of gradable adjective ⟦gāo⟧ 'tall(er)' in (5) takes two interval arguments and an individual argument and returns an update function, meaning that along a height scale, for world-assignment function pair $\langle w, g\rangle$, x is mapped to a position I s.t. I **exceeds** a reference position I_{STDD} by a **positive** difference I_{DIFF}. For measurement uses like (6), the reference I_{STDD} is the absolute zero point along a height scale $[0, 0]$ and a measure phrase like *1.7m* restricts the difference argument I_{DIFF}.

(5) $[\![\text{gāo}]\!] = \lambda I_{\text{DIFF}}.\lambda I_{\text{STDD}}.\lambda x.\lambda C.\{\langle w, g\rangle \in C \mid [\![\text{HT}(x)]\!]^{w,g} \subseteq \iota I[I - I_{\text{STDD}} = I_{\text{DIFF}}], I_{\text{DIFF}} \subseteq (0, +\infty)\}$

(6) $[\![\text{1.7m gāo}]\!] = \lambda x.\lambda C.\{\langle w, g\rangle \in C \mid [\![\text{HT}(x)]\!]^{w,g} \subseteq \iota I[I - [0, 0] = I_{\text{DIFF}}], I_{\text{DIFF}} = [\text{1.7m}, \text{1.7m}]\}$

In comparatives (7–8), the reference is the measurement of the standard, here HEIGHT(Mary). A numerical differential can be included (e.g., *5cm* in 8) to restrict I_{STDD}.

(7) $[\![\text{bǐ Mary gāo}]\!] = \lambda x.\lambda C.\{\langle w, g\rangle \in C \mid [\![\text{HT}(x)]\!]^{w,g} \subseteq \iota I[I - [\![\text{HT}(m)]\!]^{w,g} = I_{\text{DIFF}}], I_{\text{DIFF}} \subseteq (0, +\infty)\}$

(8) $[\![\text{bǐ Mary gāo 5cm}]\!] = \lambda x.\lambda C.\{\langle w, g\rangle \in C \mid [\![\text{HT}(x)]\!]^{w,g} \subseteq \iota I[I - [\![\text{HT}(m)]\!]^{w,g} = [\text{5cm}, +\infty)]\}$

We propose that inside the domain of assignment functions, there are variables that are mapped to positive thresholds of gradable adjectives: e.g. $i_{\text{tall}} \mapsto I_{\text{tall-pos}}$, $i_{\text{long}} \mapsto I_{\text{long-pos}}$.

For the positive use (9), the reference I_{STDD} is $[\![i_{\text{tall}}]\!]^{w,g}$, the threshold of being tall in w:

(9) $[\![\text{POS}^{i_{\text{tall}}}\text{gāo}]\!] = \lambda x.\lambda C.\{\langle w, g\rangle \in C \mid [\![\text{HT}(x)]\!]^{w,g} \subseteq \iota I[I - I_{\text{tall-pos}} = I_{\text{DIFF}}], I_{\text{DIFF}} \subseteq (0, +\infty)\}$

We propose that a *gèng*-sentence is an implicit comparison i.e. a positive use of gradable adjectives. A *gèng*-sentence is different from a regular positive use (see 10 vs. 9) in two aspects: (i) presupposing there are alternatives under measurement (here Mary) and (ii) introducing a new threshold (here $I_{\text{tall-pos-c}}$) and restricting it to a value exceeding the measurement of alternatives.

The use of *gèng* does not affect the value of the regular threshold. Thus with *gèng*, (2/3) can still be felicitously followed by 'of course, both of them are short.'

(10) $[\![\text{gèng}^{i}\text{gāo}]\!] = \lambda x.\lambda C.\underline{\exists y \in \text{ALT}(x)}.\{\langle w, g^{i/I_{\text{tall-pos-c}}}\rangle \in C \mid [\![\text{HT}(x)]\!]^{w,g} \subseteq \iota I[I - I_{\text{tall-pos-c}} = I_{\text{DIFF}}], I_{\text{DIFF}} \subseteq (0, +\infty), I_{\text{tall-pos-c}} - [\![\text{HT}(y)]\!]^{w,g} \subseteq (0, +\infty)\}$

Consequences. (I) *Gèng* is incompatible with numerical differences. A *gèng*-sentence works like an English implicit comparison (e.g., *Compared to Mary, John is tall*) and involves a positive use of gradable adjectives. Thus the vagueness of a context-dependent threshold value is at odds with a numerical specification of I_{DIFF} (cf. 6 and 8).

(II) *Gèng* is optional in a *bǐ*-sentece like (2). If the information of a regular threshold is not involved in common ground, there is no truth-conditional difference between (7) and (10): as far as John is taller than Mary, a threshold value between their heights can be trivially accommodated. However, with the presence of *gèng* and the introduction of a new contextual threshold value $I_{\text{tall-pos-c}}$, the heights of the target (John) and the standard (Mary) are on the two sides of this threshold, giving the impression that their heights are qualitatively/significantly different.

(III) *Gèng* in (3) does not bring a stronger meaning and is optional. Without *gèng*, (3) is ambiguous between two readings i.e. 'John's height is compared to either the regular threshold or Mary's height.' With *gèng*, (3) involves alternatives (see the presupposition in 10) and expresses an implicit comparison: 'compared to Mary, John is tall', i.e., John's height exceeds a positive threshold $I_{\text{tall-pos-c}}$ which exceeds Mary's height, and this threshold $I_{\text{tall-pos-c}}$ can be lower than the regular threshold. Thus, using *gèng* in (3) does not guarantee a stronger meaning than 'John is tall' and even implies a weaker meaning (see SAWADA 2009).

(IV) *Gèng* is required in (4). For (4), where Mary's height is already above the regular threshold, the use of *gèng* introduces a contextual threshold above Mary's height. According to Heim's (1991) 'Maximize presupposition!', if the use of *gèng* guarantees a stronger presupposition about the currently relevant threshold of being tall, using *gèng* is obligatory. This is parallel to the obligatory use of *even* in *Even compared to a basketball player, John is tall*.

(V) The current analysis explains why *gèng* sounds weird in metaphorical/hyperbolic comparisons. (see MA 2019) The positive inference of the standard cannot hold locally w.r.t the newly-introduced threshold. In (11) if lions are not brave, no metaphorical reading could arise.

(11#John bǐ shīzi gèng yǒnggǎn.
STDD lion GENG brave Intended: 'Compared with lions, John is braver.'

(VI) The current analysis explains why negation is incompatible with a *gèng*-sentence. The proposal in (10) basically analyzes *gèng* as an additive particle similar to *moreover* or *also*. Negating a *gèng*-sentence yields an unacceptable sentence similar to **He didn't also come*.

Summary. Cross-linguistically, in a Chinese *gèng*-sentence and an English implicit comparison, a gradable adjective has a positive use, but there is a comparison between the target and alternatives to the target. This crucially hinges on the dynamics of sharpening vagueness and the introduction of a threshold in a local context.

References. BARKER C. 2002. *L&P* 25. CHEN Z., GREENBERG Y. 2024. In *LENLS*, vol. 20. GUO R. 2022. *J. of ShanxiU (Phil & SS)* 45(5). HEIM I. 1991. In de Gruyter. KENNEDY C. 2007. In *CLS*, vol. 43. LIU C.-S. L. 2010. *Lingua* 120(6). MA Z. 2019. The Commercial Press. SAWADA O. 2009. *J. Pragmat.* 41(6). ZHANG L., ZHANG F. 2024. Lingbuzz Ms.