Two levels of degree reinforcement

The case of A-*ge*-BB adjectives in Gaoping Jin

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De Clercq et al. (2023) list some crosslinguistic degrees of predicative comparison (extending the list in Ultan 1972), such as

(1)   a.   Positive: John is **tall**.

       b.   Comparative: John is **taller** than George.

       c.   Superlative: John is the **tallest** of the boys.

       d.   Excessive: Mount Everest is **too high** to climb without oxygen.

       e.   Augmentative: The outcome is **very/extremely/highly** uncertain.

These categories are semantically defined and may not have dedicated morphology. In Chinese, for instance, degrees are mainly expressed analytically.

(2)   *Ta* **hen** / **tebie** / **zui** *gao.*   [Standard Mandarin]
      he POS   particularly   most   tall
      'He is tall / particularly tall / the tallest.' (positive/augmentative/superlative)

But Chinese is not completely devoid of degree morphology either. A degree-related morphological device widely used in the Chinese language family is **reduplication**, which can be applied to various categories.

(3) a. Nouns: *mama* 'mother', *nainai* 'grandma', *xingxing* 'star'   [Standard Mandarin]

  b. Verbs: *kan-kan* 'take a look', *chang-chang* 'have a taste', *taolun-taolun* 'have a discussion'

  c. Adjectives: *hong-hong* 'very red', *gan-gan-jing-jing* 'very clean', *liang-jingjing* 'bright-glittering; very bright' (a final particle *de* is syntactically required for all these)

Our focus is on adjectival reduplication, more exactly on a special variant of the **ABB pattern**.

The ABB reduplication pattern widely exists in the Chinese language family.

(4)   a.   *hei-qiqi* 'dark-lacquer.RED; pitch-dark', *le-hehe* 'happy-BB; very happy'   [Standard Mandarin]

       b.   *hak-maamaa* 'dark-BB; pitch-dark', *leong-zamzam* 'cool-BB; very cool'   [HK Cantonese]

       c.   *am-soso* 'dark-BB; pitch-dark', *peh-siaksiak* 'white-BB; very white'   [Taiwan Southern Min]

       d.   *lak-huakhuak* 'spicy-BB; very spicy', *ku-jiji* 'bitter-BB; very bitter'   [Shanghai Wu]

       e.   *hua-biabia* 'slippery-BB; very slippery', *sou-kuakua* 'thin-BB; very thin'   [Sichuan Mandarin]

Many BBs are **ideophones** without clear meanings (Van Hoey 2023: They all are!). In general, BB contributes a sense of (idiosyncratically defined) **vividness** and **augments** the degree of A.

This study: A-*ge*-BB in Jin Chinese

Jin Chinese is a major non-Mandarin variety of Chinese spoken in northern China, mainly in Shanxi Province. Our data are from the subvariety spoken in **Gaoping** (Li 2024).

Basic pattern of A-*ge*-BB

A-*ge*-BB is a special variant of ABB in Jin Chinese. It is particularly productive in Gaoping Jin.

(5) a. *Vɛteu* **haʔ** *la.*
outside dark CRS
'It is dark outside.'

b. *Vɛteu* **haʔ-dongdong** *zhe.*
outside dark-cave.RED DE
'It is pitch-dark outside.'

c. *Vɛteu* **haʔ-ge-dongdong** *zhe.*
outside dark-GE-cave.RED DE
'It is so pitch-dark outside!! 😱'

(6) a. *Tian si* **nan** *zhe.* [Gaoping Jin]
sky is blue.POS DE
'The sky is blue.'

b. *Diou tian* **nan-yiengyieng** *zhe.*
the sky blue-BB DE
'The sky is brightly blue.'

c. *Diou tian* **nan-ge-yiengyieng** *zhe.*
the sky blue-GE-BB DE
'The sky is so brightly blue!! 😃'

Two levels of degree reinforcement

There are two levels of morphological degree reinforcement in Gaoping Jin.
Given a base component A, we can

- expand it to ABB
- further expand it to A-*ge*-BB

The A-*ge*-BB form is more expressive and emotional than the ABB form.

(7)
haʔ 'dark'	*haʔ-dongdong* 'pitch-dark'	*haʔ-ge-dongdong* 'so pitch-dark!!'
nan 'blue'	*nan-yiengyieng* 'brightly blue'	*nan-ge-yiengyieng* 'so brightly blue!!'
tian 'sweet'	*tian-ziʔziʔ* 'pleasantly sweet'	*tian-ge-ziʔziʔ* 'so pleasantly sweet!!'
neng 'cold'	*neng-shoushou* 'quite cold and chilly'	*neng-ge-shoushou* 'so cold and chilly!!'

NB the ABB form is already (moderately) expressive and emotional.
Dong (2021): BB elements are evaluative.

Zhu (2003), Liu (2013): Adjectival reduplication in Chinese denotes the augmentative degree, but the augmentation is a **controlled** and **approximate** one—it stays within normal, average human perception and cannot take extreme or precise values.

(8) a. *hong* 'red' → *hong-hong* 'very red'   [Standard Mandarin]
         (but not the scientifically defined, standard red color)

     b. *yuan* 'round' → *yuan-yuan* 'very round'
         (but not a mathematically defined perfect circle)   (Zhu 2003)

So, the degree denoted by ABB is not the general augmentative degree on De Clercq et al.'s (2023) list but a particular subtype of it. We can call it "**controlled vivid augmentation**" (**CVA**).

Since Jin Chinese has both ABB and A-*ge*-BB, the CVA degree needs further refinement. We propose the more fine-grained levels "**low CVA**" and "**high CVA**" for them.

A-*ge*-BB adjectives can be used in all syntactic positions where ABB adjectives can be used.

(9) a. *Diou tian **nan-ge-yiengyieng** zhe.*   [Gaoping Jin]
        the sky blue-GE-BB   DE
        'The sky is so brightly blue!! 😃' (predicative)

   b. *Zheu ta niong **nan-ge-dueʔdueʔ** niong yer, neng gan-cheng ge shen?*
        just he that lazy-GE-BB   that look can do-accomplish CLF what
        'With his lazy-as-hell look, what can he ever accomplish?! 🥺' (attributive)

   c. *Ta **zeʔ-ge-huahua** zhe pou guolε la.*
        she hurry-GE-BB   DE run to here CRS
        'She ran here in such a hurry!! 👀' (adverbial)

   d. *Gerza diou fan   nong zhe **xi-ge-chacha** zhe, deʔ cheinmein haʔ liaʔ!*
        today this porridge make RES watery-GE-BB DE this how   drink SFP
        'The porridge today is so watery!! How can we drink it?! 🙄' (secondary predicate)

The A-*ge*-BB construction is highly colloquial, so **high-register ABBs** (usually Mandarin loanwords) normally don't have A-*ge*-BB forms.

(10)   *eʔ-heinhein* 'evil-cruel.RED; ferocious and relentless'   *eʔ-ge-heinhein   [Gaoping Jin]
        seng-chongchong 'mood-BB; excited and joyful'   ?*seng-ge-chongchong*

Fully onomatopoeic ABBs don't have A-*ge*-BB forms either (unless an item has been reanalyzed in a speaker's mind). Such ABBs are usually expanded from onomatopoeic ABs by reduplicating B (11), and they can keep expanding (12).

(11)   *huala* 'rain sound' → *hualala* 'heavy rain sound'   *hua-ge-lala   [Gaoping Jin]
        honglong 'thunder sound' → *honglonglong* 'heavy thunder sound'   *hong-ge-longlong

(12)   *hualalala* 'very heavy rain sound', *honglonglonglonglong* 'nonstopping thunder sound'

Incompatibility with degree adverbs

A-*ge*-BB items can't normally co-occur with degree adverbs.

(13) a. **Vεteu   hein **haʔ-ge-dongdong** zhe.*   [Gaoping Jin]
          outside very dark-GE-cave.RED DE
          Intended: 'It is very so pitch-dark outside!!'

     b. **Vεteu   tian xian   **haʔ-ge-dongdong** zhe la.*
          outside sky a little dark-GE-cave.RED DE CRS
          Intended: 'It is a little so pitch-dark outside now!!'

     c. ??*Deʔ lia-ge   sangzhe zheinsi **zhong-ge-huahua** zhe.*
          this two-CLF box   really heavy-GE-BB   DE
          Intended: 'These two boxes are really so heavy!!'

The augmentative degree is specialized and split in Jin Chinese:

- It is specialized as "controlled vivid augmentation" (CVA). ⇐ generally true for Chinese
- It is split into "low CVA" (ABB) and "high CVA" (A-*ge*-BB). ⇐ a special feature of Jin

The A-*ge*-BB reduplication pattern is highly productive in Gaoping Jin. It makes an ABB adjective more expressive and emotional, and its syntactic distribution is as free as that of ABB.

Overview

We begin with ABB adjectives, which are the basis of A-*ge*-BB adjectives.

- A has a lexical category (mostly Adj but also N/V) and a clear meaning.
  - e.g., Standard Mandarin *hei-qiqi* 'dark$_{Adj}$-lacquer.RED; pitch-dark', *lei-wangwang* 'tear$_N$-welling.up.state; tearful', *xiao-xixi* 'smile$_V$-giggling.sound; smiling broadly',
- BB often has no clear meaning but always has idiosyncratic content, so different BBs contribute different vivid effects, and the pairing of A and BB is a lexical matter.
  - e.g., Standard Mandarin *suan-liuliu* 'sour-BB; very sour (in a way that makes people drool)', *tian-sisi* 'sweet-BB; very sweet (in a way that makes people happy)', but **suan-sisi*, **tian-liuliu*

Wang (2010), Van Hoey (2023): ABBs are **compounds** (A + BB). Building on this view, we further propose that BB is derived by **root-level reduplication** (A + √BB). Our analysis is embedded in a root-based framework like Distributed Morphology (Halle & Marantz 1993 et seq.).

Main motivation: BBs are [−clear lexical meaning, +idiosyncratic content]

- No clear lexical meaning $\Rightarrow$ no lexical category
- With idiosyncratic content $\Rightarrow$ still lexical in nature

The only notion meeting both conditions in current generative syntax is the **root**.

Root-level reduplication

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The only notion meeting both conditions in current generative syntax is the **root**.

However, having no lexical category $\neq$ having no category.

Acedo-Matellán & Real-Puigdollers (2019), Song (2019), Cavirani-Pots (2020):
👉 Functional categories can also serve as categorizers, giving rise to "semilexical" items.

We propose that BBs are derived by $[_{\text{Deg}}$ Deg$_{/\text{RED}/}$ $\sqrt{B}$], where Deg is a degree-related functional head that carries a reduplication phonological instruction RED. Deg essentially categorizes $\sqrt{B}$ as a **semilexical degree marker**, which moreover is reduplicated at PF.

We have seen that the A component in an ABB adjective may be of multiple categories. However, we argue that this is an illusion due to the fluidity of categorial status in Chinese.

Consider *xiao-xixi* 'smile-giggling.sound; smiling broadly'.

1. How do we know that the *xiao* in *xiao-xixi* is verbal?
   - Because *xiao* is usually used as a verb in Chinese.
2. But does "usually" equal "necessarily"?
   - No. It could also be a noun (e.g., *tianmei-de xiao* 'sweet-MODI smile') or even an adjective (e.g., *xiao-xiao-de* 'smile-smile-DE; smiling', an adjectival reduplication pattern).

So, our initial identification of *xiao* in *xiao-xixi* as verbal is just impressionistic. Semantically, the A in ABB consistently denotes a **state** (Liu 2013). This is compatible with a syntactic analysis where the category of A is consistently adjectival: e.g., [_{Adj} *a* √XIAO].

Compounding as labeling

We have adopted the compounding view on ABB adjectives, but compounding as a traditional morphological operation needs to be recast in syntactic terms in our framework. We recast it as **labeling** (Chomsky 2013, 2015).

Consider the A-BB merger on our conception:

$$[\ [_{\text{Adj}} \ a \ \sqrt{A} \ ] \ [_{\text{Deg}} \ \text{Deg} \ \sqrt{B} \ ] \ ]$$

Since the two components here are of equal complexity, neither can serve as the head. The only way to label the structure, therefore, is via some **shared feature**. Building on Liu (2013), we can take this to be [+STATE]. Hence, the overall A-BB ends up a stative construction.

Deriving A-*ge*-BB

Since *ge* further reinforces the degree of ABB, we assume that it is also a **Deg** head. But then its surface position can't be its underlying position, because that would lead to a stacked Deg-Deg situation (Tree 1), which violates syntactic OCP (Biberauer 2008, aka Distinctness, Richards 2010). We propose that *ge* is generated **above** ABB (Tree 2). This also gives the correct scoping.
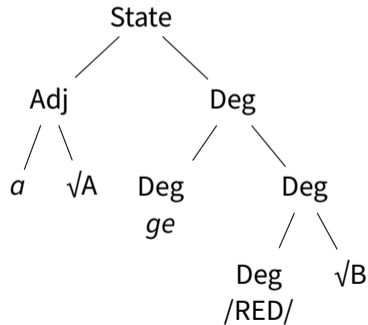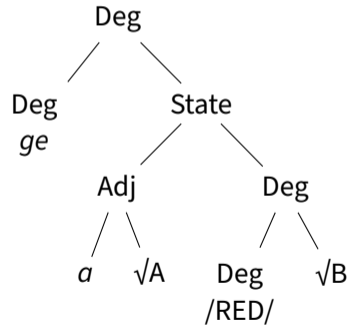

Tree 1 ❌   Tree 2 ✅

There is a long line of work splitting Deg (since Corver 1997). The main novelty in our theory is that one of the split-Deg heads is **semilexical** (aka root-supported, Song 2019).

We let A raise to the higher Deg to get the A-*ge* word order. This is just head movement in mainstream generative syntax, but in root-based frameworks, head movement in general is no longer straightforward. We need an extra assumption:

Categorizers are phase heads. (Marantz 2001)

We can now keep treating traditional lexical heads—now prederived in a separate derivational cycle (or layer, Zwart 2007 et seq.)—as heads in the main cycle.
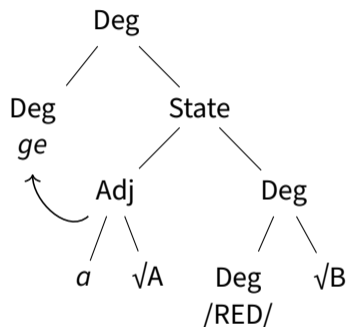
Head movement

Since Adj and the lower Deg have equal complexity, the upward movement of Adj instead of the lower Deg must be due to some kind of special relation between the higher Deg and Adj—such as **agreement** on a formal feature.

We can take this to be just the **categorial feature**, which is unvalued on Deg but valued on Adj. Head movement ensues as a result of this categorial agreement (Roberts 2019: 159–160).

This provides another way to label [Adj Deg] too (similar to the technique in Song 2019).

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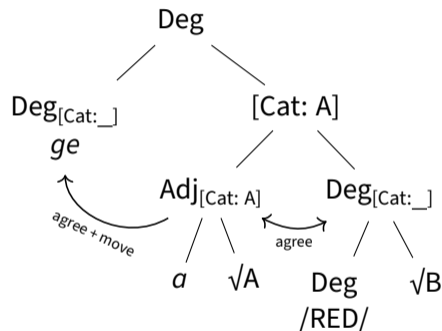
Predictions

Several observations about A-*ge*-BB adjectives are immediately borne out:

- A-*ge*-BBs can't co-occur with normal degree adverbs because Deg is already occupied.
- Fully onomatopoeic ABBs don't have A-*ge*-BB forms because they don't involve two separately categorized roots (unless reanalysis has happened).
- Since the low Deg lacks a valued categorial feature, BBs can't normally be used on their own.
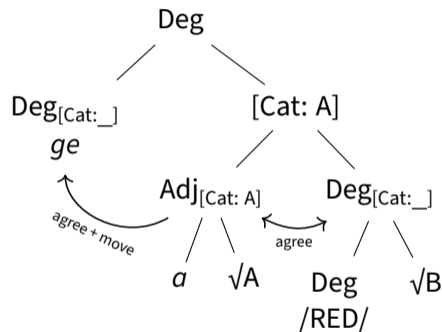
Also, since Adj and Deg are in a symmetric configuration, the **linearization** of ABB adjectives should (i) show more flexibility than other cases of linearization, and (ii) show cross-dialectal variation independently of the general word order variation.

The extra prediction is borne out:

(14) BBA adjectives:
  kuenkuen-yoe 'very round'   *lahlah-waon* 'very yellow'   Shanghai Wu
  binbin-lang 'very cold'   *punpun-song* 'very fragrant'   Nancheng Gan
  gungun-re 'very hot'   *ququ-hei* 'very dark'   Tancheng Mandarin

(15) ABB/BBA alternation:
  yuan-liuliu / liuliu-yuan   'very round'   Sichuan Mandarin
  jin-bangbang / bangbang-jin   'very tight'
  lan-binbin / binbin-lan   'very cold'   Shaoxing Wu
  yoen-kuenkuen / kuenkuen-yoen   'very round'
  phang-kongkong / kongkong-phang   'very fragrant'   Taiwan Southern Min
  sio-kunkun / kunkun-sio   'very hot'

Overview

Two levels of meaning representation

Our focus in this study is on syntax, but we can give a semantic interpretation to our proposed structure too. To do that, we distinguish **two** levels of meaning representation:

1. the conventional syntactic level (S-level), and
2. the root level (R-level)

These are respectively above and below the level of the conventionally defined "word" (which, in our framework, is the level of **categorization**).

In the case of A-*ge*-BB, since *ge* is productively added to ABB items, and its degree meaning is fixed (**subjective exaggeration**), we treat it as part of routine semantic composition. However, the ABB base, being a "compound" on our analysis, should be treated **as a whole** in semantic composition. From the perspective of the S-level, its compositional **type** is the same as that of a non-compound gradable adjective—e.g., $\langle e, d \rangle$ à la Kennedy (2013, 2016).

$e :=$ entity type, $d :=$ degree type

R-level semantics: *de facto* adjunction

On our analysis of ABB, the labeling-by-agreement step between Adj and the low Deg is essentially just passing the categorial label of Adj upward; the effect of this is the same as that of **adjoining** the lower Deg to Adj. That is, in an ABB adjective, **BB modifies A** in a formally definable way.

This **word-internal adjunction** situation is modeled in Song (2019, 2020) with a "**defective categorizer**" (Cat)—in the case of modifier-head compounding. The lower Deg here can be considered a more specific subtype of Cat.
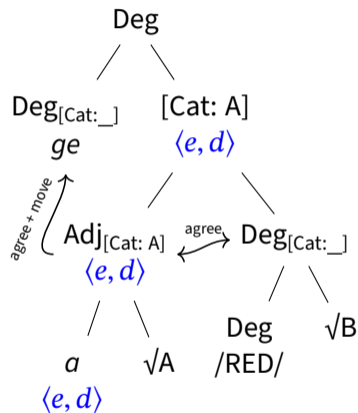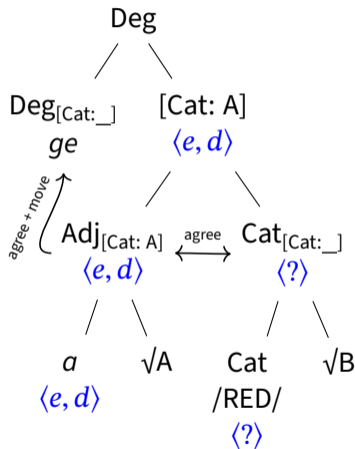
R-level semantics: *de facto* adjunction

We can go one step further and replace the lower Deg by Cat, thus pursuing a full-fledged compounding approach.

Cat has no complete type info due to its **underspecified** nature and only acquires a type (by acquiring a **category**) in the course of derivation (Song 2019: 58).

- Type(ABB) = Type(A-BB) = Type(A)

R-level semantics: *de facto* adjunction

Thus, from the S-level perspective (à la Kennedy 2016):

- $[\![\text{ABB}]\!] = \lambda x.\ \mathbf{ABB\text{-}Deg}(x) :: \langle e, d \rangle$
 (a function that maps an entity x to its ABB-degree)

ABB-Deg is defined by the effect of BB on the A-scale:

- General effect: CVA (by BB modification)
- Extra effect: idiosyncratic vividness (by choice of √B)

Example: Mandarin *yuan-gungun* 'round-roll.RED'

- General: CVA, regardless of what BB is
- Extra: vividness ideophonically evoked by √GUN-GUN

(We leave root denotations aside here; see Song 2021)
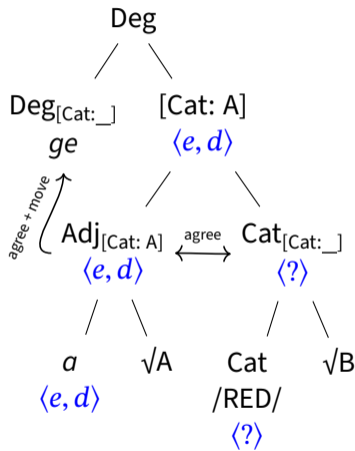
S-level semantics: subjective exaggeration

At the S-level, composition works by routine functional application. Again, we follow Kennedy's (2013, 2016) approach, letting *ge* introduce a **judge parameter** j bound to the speaker:

$$\llbracket ge \rrbracket = \lambda P \lambda j \lambda x.\ \mathbf{EXAG}_j[P(x), \mathbf{stnd}(P)]\ ::\ \langle\langle e, d\rangle, \langle e, \langle e, t\rangle\rangle\rangle$$

(a function that maps a gradable adjective's denotation $P_{\langle e,d\rangle}$, a judge $j_{\langle e\rangle}$, and an entity $x_{\langle e\rangle}$ to $1_{\langle t\rangle}$ iff the P-degree of x exceeds the standard P-degree $\mathbf{stnd}(P)$ of the context in an exaggerated way as assessed by the judge j)

Putting the denotation of *ge* and that of ABB together, we get (with α-conversion)

$$
\begin{aligned}
\llbracket \text{A-}ge\text{-BB} \rrbracket\ &=\ \llbracket ge \rrbracket(\llbracket \text{ABB} \rrbracket) \\
&=\ \lambda j \lambda x.\ \mathbf{EXAG}_j[(\lambda y.\ \mathbf{ABB\text{-}Deg}(y))(x), \mathbf{stnd}(\lambda y.\ \mathbf{ABB\text{-}Deg}(y))]\ ::\ \langle e, \langle e, t\rangle\rangle
\end{aligned}
$$

(**stnd** is a predefined ancillary function)   👉 the same approach is pursued in Cheng & Wang (2025)

Example: Gaoping Jin *nan-ge-yiengyieng* 'blue-GE-BB; so blue!!' (NYY = *nan-yiengyieng*)

$$\begin{aligned}
[\![\textit{nan-ge-yiengyieng}]\!] &= [\![\textit{ge}]\!]([\![\textit{nan-yiengyieng}]\!]) :: \langle e, \langle e, t \rangle \rangle \\
&= \lambda j \lambda x. \, \textbf{EXAG}_j[(\lambda y. \, \textbf{NYY-Deg}(y))(x), \textbf{stnd}(\lambda y. \, \textbf{NYY-Deg}(y))]
\end{aligned}$$

Speaker A: *Diou tian nan-ge-yiengyieng zhe* 'The sky is so brightly blue!! 😃'

$[\![\textit{nan-ge-yiengyieng}]\!]([\![\textit{diou tian}]\!])(A) = [\![\textit{ge}]\!]([\![\textit{nan-yiengyieng}]\!])([\![\textit{diou tian}]\!])(A) :: t$

$= (\lambda j \lambda x. \, \textbf{EXAG}_j[(\lambda y. \, \textbf{NYY-Deg}(y))(x), \textbf{stnd}(\lambda y. \, \textbf{NYY-Deg}(y))])(s)(A)$

$= \textbf{EXAG}_A[(\textbf{NYY-Deg}(s), \textbf{stnd}(\lambda y. \, \textbf{NYY-Deg}(y))]$

$= 1$ iff the NYY-degree of the sky (s) exceeds the standard NYY-degree of the context in an exaggerated way assessed by A

Overview

Conclusion

We studied the special adjectival reduplication pattern A-*ge*-BB in Gaoping Jin.

Main empirical points:

- "Controlled vivid augmentation" (CVA) degree in Chinese
- Low CVA (ABB) vs. high CVA (A-*ge*-BB) in Jin Chinese
- A-*ge*-BB: more expressive and emotional

Main theoretical points:

- ABB adjectives are compounds: $[\ [_{Adj}\ a\ \sqrt{A}\ ]\ [_{Deg}\ Deg_{/RED/}\ \sqrt{B}\ ]\ ]$
- A-*ge*-BB structure: $[_{DegP}\ A_i\text{-}Deg_{/ge/}\ [_{Adj}\ t_i\ [_{Deg}\ Deg_{/RED/}\ \sqrt{B}\ ]]]$
- The low Deg can be identified as a "defective categorizer" (Song 2019)
- *ge* denotes subjective exaggeration via ABB and a judge parameter (Kennedy 2016)

Thank you!

Selected references I

📄 Cheng, A. C. & V. J. Wang
Split reduplicant and subjectivity on tetrasyllabic reduplicated adjectives in Taiwan Southern Min
To appear in *Chinese Lexical Semantics (CLSW 2024)*, 2025

📄 De Clercq, K, P. Caha, M. Starke, & G. V. Wyngaerd
Degree morphology
The Wiley Blackwell companion to morphology, 1–42, 2023

📄 Dong, X.
Reduplication in Old Chinese and its change 上古漢語中的重疊及其演變
Lingnan Journal of Chinese Studies 15, 269–290, 2021

📄 Kennedy, C.
Two kinds of subjectivity
Subjective meaning: Alternatives to relativism, 105–126, 2016

📄 Li, S.
Cross-categorial multifunctionality from a Distributed Morphological perspective
Zhejiang University MA thesis, 2024

📄 Liu, C.-S. L.
Reduplication of adjectives in Chinese
Journal of East Asian Linguistics 22, 101–132, 2013

📄 Marantz, A.
Words
Paper at WCCFL 20, Feb. 2001

📕 Richards, N.
Uttering trees
MIT Press, 2010

📄 Song, C.
On the formal flexibility of syntactic categories
University of Cambridge dissertation, 2019

📄 Song, C.
On the semantics of root syntax
Proceedings of LENLS18, 61–74, 2021

📄 Van Hoey, T.
ABB, a salient prototype of collocate–ideophone constructions in Mandarin Chinese
Cognitive Linguistics 34(1), 133–163, 2023

📄 Wang, Z.
The Head of the Chinese Adjectives and ABB Reduplication
Proceedings of NACCL22 & IACL18, vol. 1, 232–245, 2010