Mandarin has subjectivity-based adjective ordering preferences in the presence of *de*

the meaning lab @UCI

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adjective ordering preferences

pre-nominal	post-nominal
big blue **car**	**car** blue big
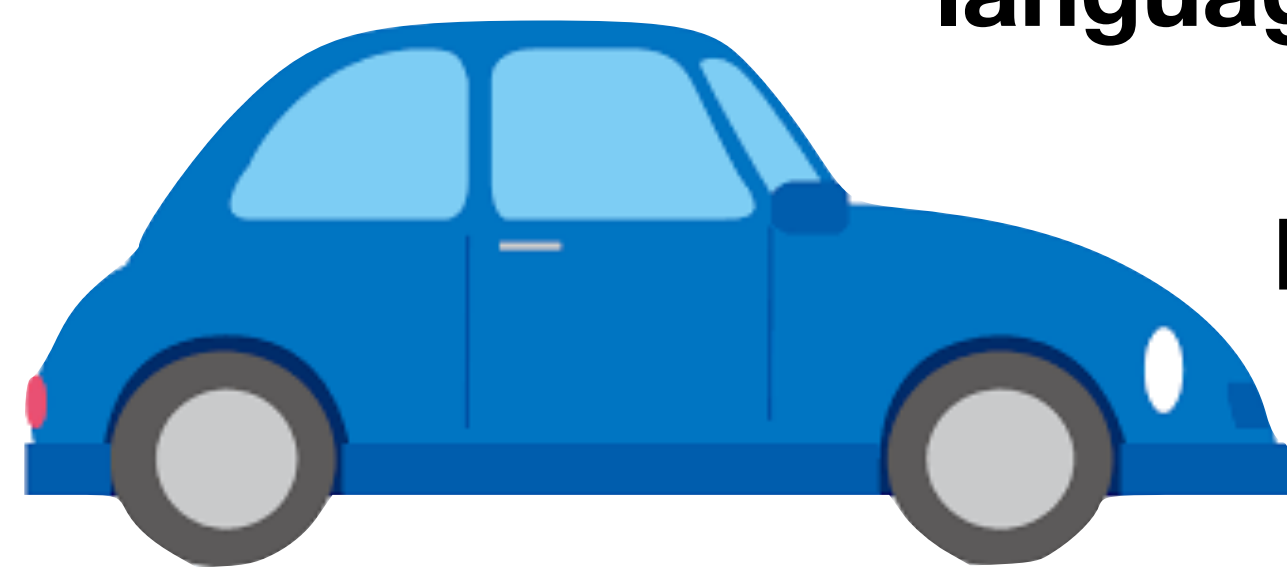
robustly attested in a host of **unrelated languages**, both with **pre-** and **post-nominal** adjectives

English	Arabic
Hungarian	Indonesian
Turkish	Basque
Hindi	Selepet
Telugu	Mokilese
Tagalog	Farsi
⋮	⋮

what about Mandarin?

previous work on Mandarin

- Multi-adjective strings in **Mandarin optionally feature the linking particle** 的 *de* (den Dikken, 2006; Scontras & Nicolae, 2014)
- Sproat & Shi (1991) claim that **when *de* is present, there are no restrictions** on adjective ordering

大的	蓝的	车	蓝的	大的	车
dà-de	lán-de	chē	lán-de	dà-de	chē
big-DE	blue-DE	car	blue-DE	big-DE	car

- **Without *de*, Mandarin has English-like preferences** that obey the class hierarchy below

大	蓝	车	*蓝	大	车
dà	lán	chē	lán	dà	chē
big	blue	car	blue	big	car

QUALITY > SIZE > SHAPE > COLOR > PROVENANCE

linker norming study

- We used a version of the ordering preferences experiment from Scontras et al. (2017) to assess the optionality of *de*
- **20 native speakers** of Mandarin participated
- *de* appeared on **both** adjectives, on only the **first** adjective, on only the **second**, or on **neither** adjective
- Participants indicated whether the options sounded **natural**

👎 56% adj₁ adj₂ noun
🙂 70% adj₁-DE adj₂ noun
👎 55% adj₁ adj₂-DE noun
🙂 66% adj₁-DE adj₂-DE noun

previous work on English

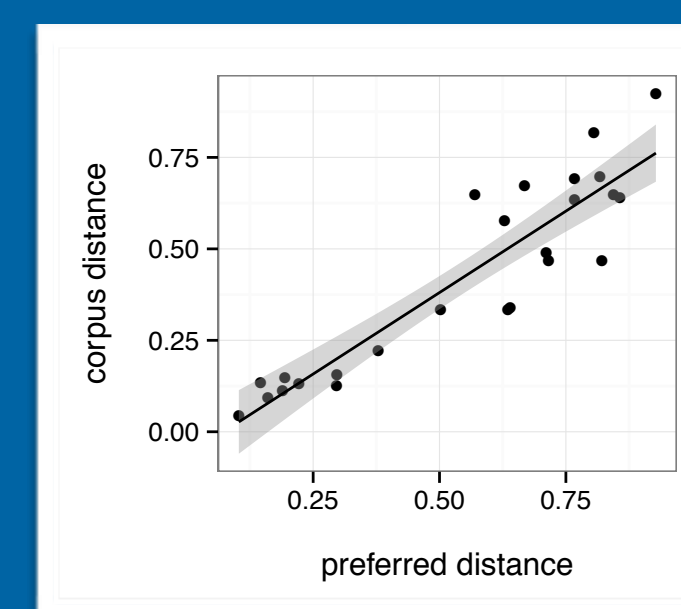### measuring preferences

Progress:
Which description of the chair sounds more natural?
"the small red chair" — "the red small chair"
Adjust the slider to indicate your preference.
Continue

corpus validation

measuring subjectivity

Progress:
Consider the following adjective:
brown
How subjective is the adjective "brown"?
completely objective — completely subjective
Continue

Scontras et al. (2017) showed adjective **subjectivity** to be a **robust predictor** of ordering preferences in English

big blue car ⟶ subjectivity decreases

faultless disagreement validation

Progress:
Consider the following situation:
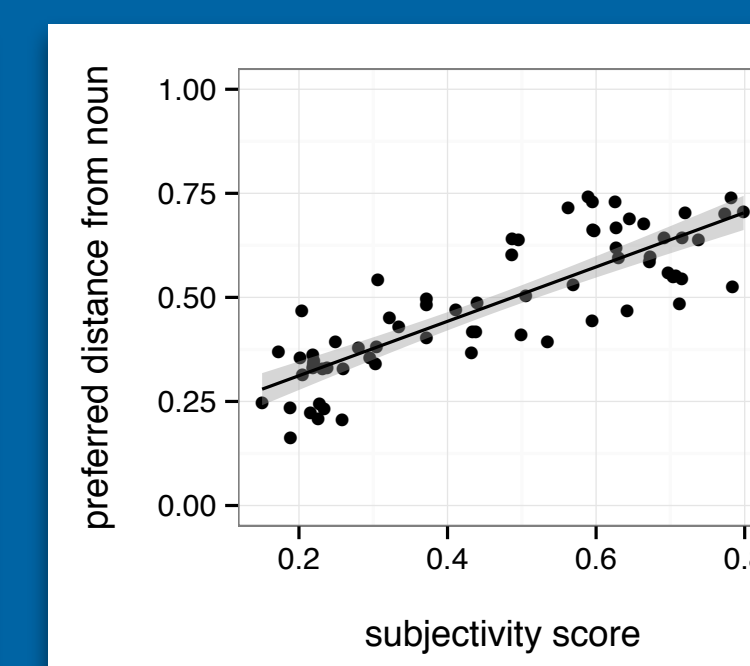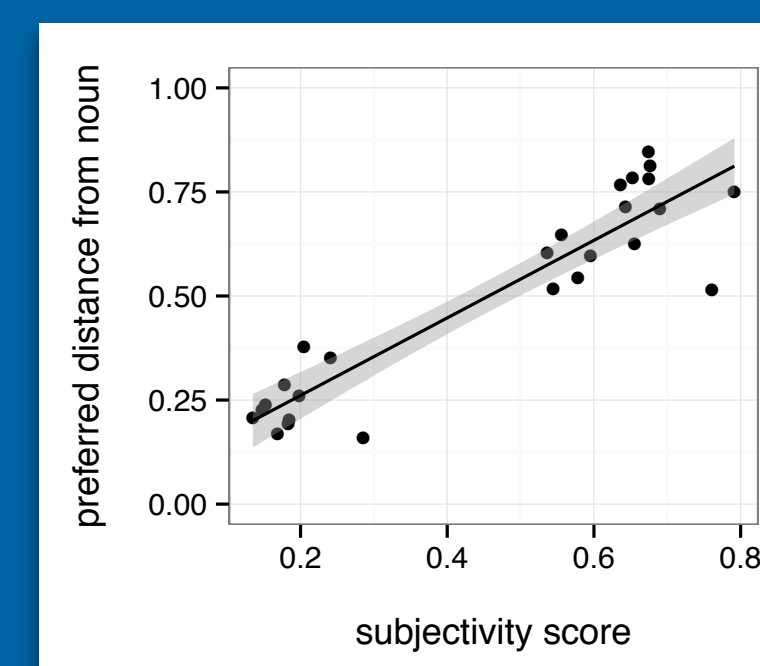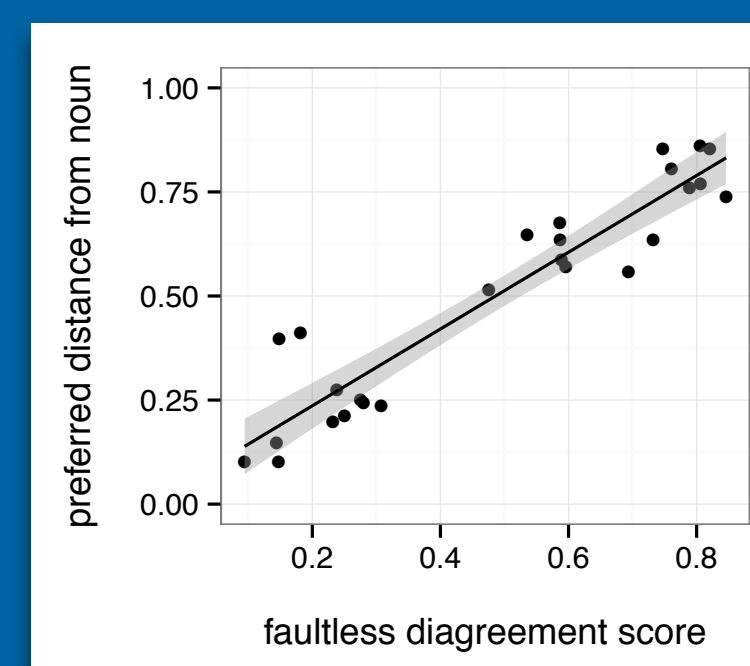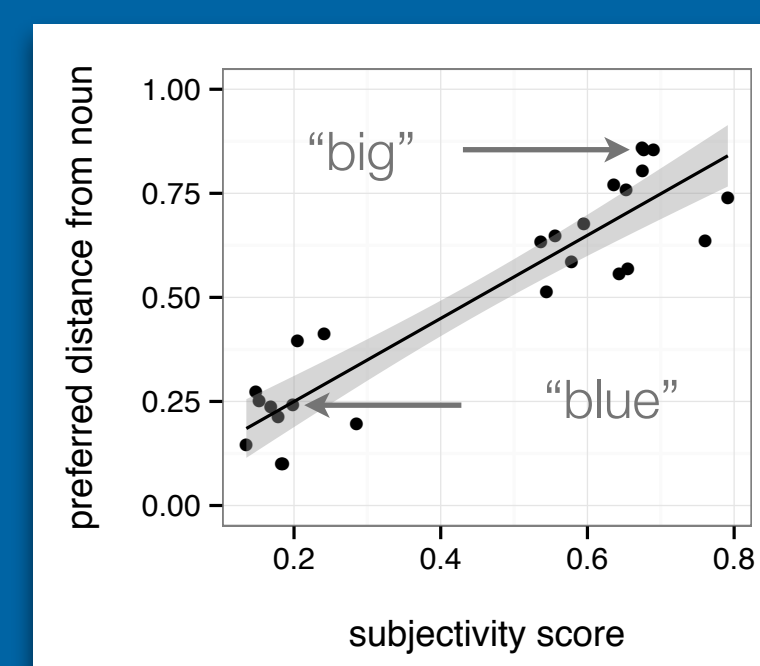Greg and Logan see the same carrot.
Greg says: **"That carrot is big."**
Logan responds: **"You're wrong. That carrot is not big."**
Can both Greg and Logan be right?
No, somebody must be wrong. — Yes, it's a matter of opinion.
Continue

adjectives and nouns

We translated the English materials from Scontras et al. (2017)

adjective	translation	class	adjective	translation	class	noun	translation	class
新 xīn	new	age	好 hǎo	good	quality	píng guǒ	apple	food
旧 jiù	old	age	圆 yuán	round	shape	xiāng jiāo	banana	food
蓝 lán	blue	color	方 fāng	square	shape	hú luó bo	carrot	food
棕 zōng	brown	color	大 dà	big	dimension	zhī shì	cheese	food
绿 lǜ	green	color	长 cháng	long	dimension	xī hóng shì	tomato	food
紫 zǐ	purple	color	窄 zhǎi	narrow*	dimension	yǐ zi	chair	furniture
红 hóng	red	color	短 duǎn	short	dimension	shā fā	sofa	furniture
黄 huáng	yellow	color	小 xiǎo	small	dimension	fēng shàn	fan	furniture
金属 jīn shǔ	metal	material	宽 kuān	wide*	dimension	zhuō zi	table*	furniture
塑料 sù liào	plastic	material	干 gān	dry*	texture	diàn shì	TV	furniture
木制 mù zhì	wooden	material	硬 yìng	hard	texture			
坏 huài	bad	quality	软 ruǎn	soft	texture			
美 měi	beautiful*	quality	湿 shī	wet*	texture			

measuring ordering preferences

- We replicated the ordering preferences experiment from Scontras et al. (2017) using Mandarin translations
- **32 native speakers** of Mandarin participated
- Participants indicated their preferred order by adjusting a slider with endpoints labeled with multi-adjective nominals that differed in the relative order of the adjectives; all adjectives appeared with *de*
- We averaged naturalness ratings to arrive at a single preferred-distance measure for each adjective; values ranged from 0 (preferred closest to the noun) to 1 (preferred farthest from the noun)
- Mandarin does have **stable preferences with *de***, as is evident in the significant deviation from chance (i.e., from 0.5) in several of the class distance measures
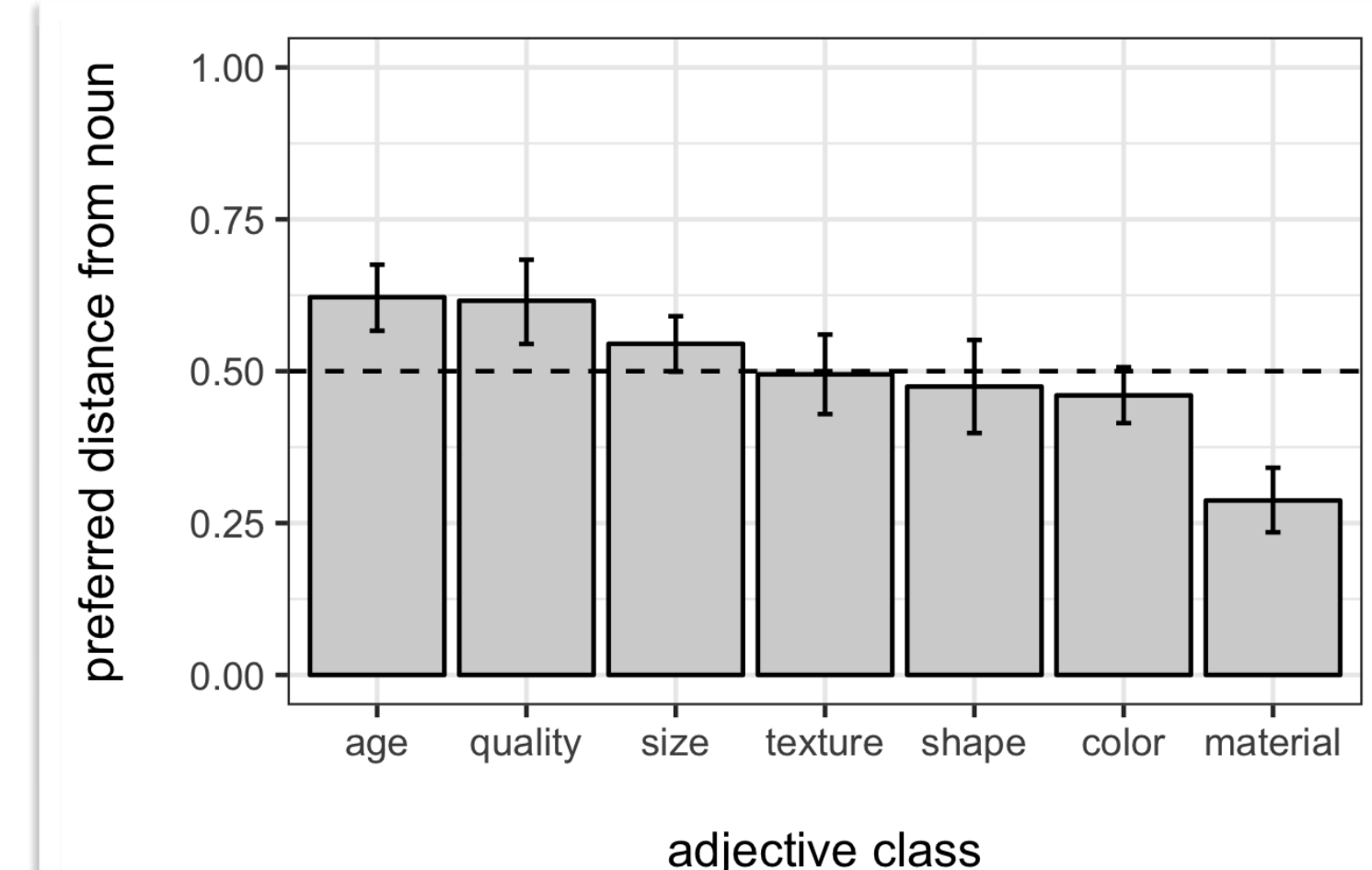
measuring subjectivity

- We replicated the faultless disagreement experiment from Scontras et al. (2017) using Mandarin transitions
- **35 native speakers** of Mandarin participated
- Comparing subjectivity with naturalness ratings, we see that in Mandarin, **subjectivity is a reliable predictor of ordering preferences** (r^2 = 0.48, 95% CI = [0.26, 0.67])

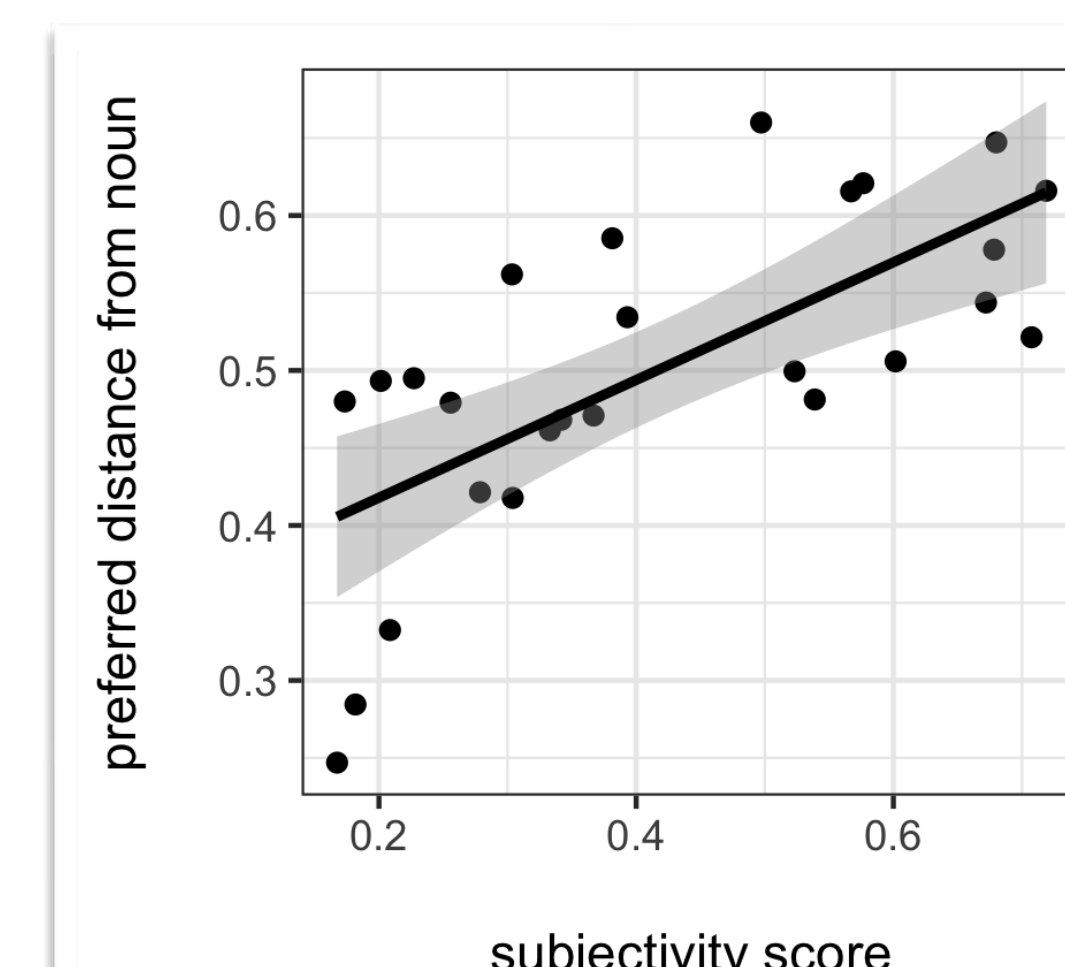## adding our results to the cross-linguistic picture

Mandarin is similar to Tagalog, another language with linking particles in the presence of adjectives (Samonte & Scontras, 2019). In Mandarin the linker is often optional; in Tagalog the linker is obligatory. **Both languages have subjectivity-based ordering preferences.**

References: **den Dikken (2006).** *Relators and Linkers*. MIT Press. **Samonte & Scontras (2019).** Adjective ordering in Tagalog: A cross-linguistic comparison of subjectivity-based preferences. In *Proceedings of the Linguistic Society of America*. **Scontras et al. (2017).** Subjectivity predicts adjective ordering preferences. *Open Mind: Discoveries in Cognitive Science 1*. **Scontras & Nicolae (2014).** Saturating syntax: Linkers and modification in Tagalog. *Lingua 149*. **Sproat & Shi (1991).** The cross-linguistic distribution of adjective ordering restrictions. In *Interdisciplinary Approaches to Language: Essays in honor of S.-Y. Kuroda*.

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