On the role of conjunction in adjective ordering preferences

Adjective ordering preferences are robustly attested in English and many unrelated languages (Dixon, 1982; Sproat and Shih, 1991; Scontras et al., 2017). In nominals with multi-adjective strings (e.g., *big blue box*), chances are the order of the adjectives is non-arbitrary. However, ordering preferences are claimed to neutralize in cases where multi-adjective strings are formed via conjunction (e.g., *blue and big box*; Ford and Olson, 1975; Byrne, 1979). We provide empirical evidence in support of this claim, but with an important caveat: conjunction neurtralizes adjective ordering preferences *in languages where multi-adjective strings obligatorily feature conjunction.*

In Spanish, multi-adjective strings are post-nominal and formed via conjunction (e.g., *la caja grande y azul* 'the big blue box'). To investigate the status of adjective ordering preferences in Spanish, we replicated the methodology of Expt. 1: *Ordering preferences* from Scontras et al. (2017) using Spanish translations of the original English materials. 48 native speakers indicated their preferences for pairs of multi-adjective strings that differed in the relative order of the adjectives. Adjectives came from seven semantic classes and were paired with ten unique nouns. On the basis of the preference ratings, we calculated each adjective's preferred distance from the modified noun. Fig. 1 plots the preferred distance measures grouped by lexical semantic class for Spanish (blue bars), as well as the English baseline from Scontras et al. (red bars). Whereas English has stable ordering preferences, as evidenced by the significant deviation from chance level (i.e., from 0.5), Spanish does not: in all but one of the lexical classes (i.e., *quality*), participants fail to provide systematic ratings that would evidence stable ordering preferences; we find a similar pattern of responses at the level of individual adjectives. We then re-ran the English ordering preferences experiment from Scontras et al., this time using conjunction to form the multi-adjective strings. The results from 59 English speakers are plotted in Fig. 1 (green bars); the English conjunction ratings replicate both the qualitative and quantitative results from the Scontras et al. baseline.

Starting with Spanish, one might think that post-nominal adjectives were to blame for the absence of stable ordering preferences, but stable preferences have been documented in languages with post-nominal adjectives that do not require conjunction in multi-adjective strings (e.g., Indonesian; Martin, 1969). Rather, it would seem that conjunction does indeed neutralize ordering preferences. This effect makes sense if the pressure for ordering preferences comes from a desire to compose less subjective adjectives earlier with the modified noun (cf. Scontras et al., 2017); with conjunction (Fig. 2a), the adjectives make their semantic contribution together after they are conjoined, so pressures mediating the order in which adjectives compose cannot apply. But in English we find no measureable effect of conjunction. One way to understand this result is that in languages where multi-adjective strings optionally feature conjunction, the regularity introduced in conjunction-less strings can bleed over to strings with conjunction. English speakers seem to internalize the statistical ordering regularity from non-conjoined adjective strings and use that knowledge to inform preferences for conjoined strings.

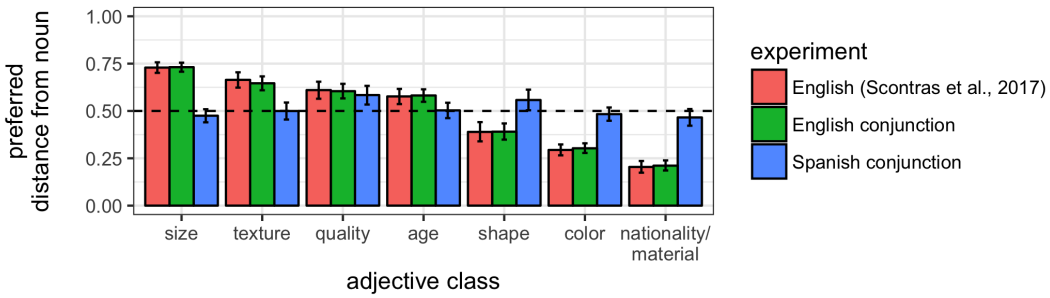

Fig. 1: Ordering preferences grouped by adjective semantic class. Higher values indicate that a class's adjectives are preferred farther from the modified noun; lower values indicate that a class's adjectives are preferred closer. The dashed line indicates chance level, or the absence of stable preferences. Error bars represent bootstrapped 95% confidence intervals drawn from 10,000 samples of the data. Stable preferences are observed in English, both with (green bars) and without (red bars) conjunction, but not in Spanish (blue bars).

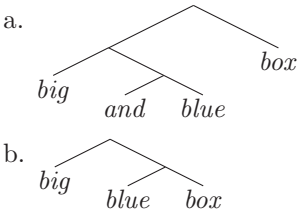

Fig. 2: Compositional structure for adjective strings formed with (a) and without (b) conjunction. Only in (b) do the adjectives incrementally compose with the resulting nominal; in (a), the adjectives first get conjoined, then jointly modify the noun.

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