The Predictive Function of Prenominal Adjectives
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Introduction
Prenominal adjectives are supposed to add to or modify the meanings of head nouns, but this idea is often problematic (Kamp & Partee, 1995; Ramscar et al., 2010). For example, the most frequent adjectives before puppy are all redundant:

Before puppy: cute little new ...

We propose that prenominal adjectives are used to lower the entropy of informative nouns in context (see Figs. 1 and 2). If this is the case, then we should find that more infrequent nouns are more likely to be preceded by adjectives.

If adjectives are only used to convey meaning, then we expect the opposite: since more infrequent nouns are often more specific, they need to be preceded by fewer modifying adjectives.

Study 1: Nouns
Using in COCA (Davies, 2009), we examined the probability of adjectival modification for 20 high-frequency nouns paired with 20 low-frequency nouns of similar semantics.

Results
19 of the 20 lower frequency nouns were more likely to be preceded by an adjective than the corresponding high-frequency noun, χ²(19)=4.1312, p<0.001.

Study 2: Adjectives
We examined the 300 most frequent adjectives in COCA and the distribution of nouns after them. For each adjective A, we found the 200 most frequent following nouns. We correlated the log frequency of those nouns with their probability of being modified by the adjective A.

Further, we calculated the probability of those nouns being preceded by the (i.e. not preceded by any adjective).

Results
For all adjectives examined, there was a negative correlation between pf(following noun) and pf(prenominal noun). The results for thin are shown below.

Conclusions
More informative nouns are more likely to appear with adjectives. This doesn’t make sense if the function of adjectives is to add detail to meaning. Yet it is perfectly understandable if the function of adjectives is entropy reduction in context (Jaeger, 2010).

Further work should examine the distribution of adjectives in a variety of languages and syntactic positions. Searching for information-theoretic functions has the potential to give a unified description of disparate phenomena (gender, adjectives, noun classifiers, order in naming practices).

Literature cited

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