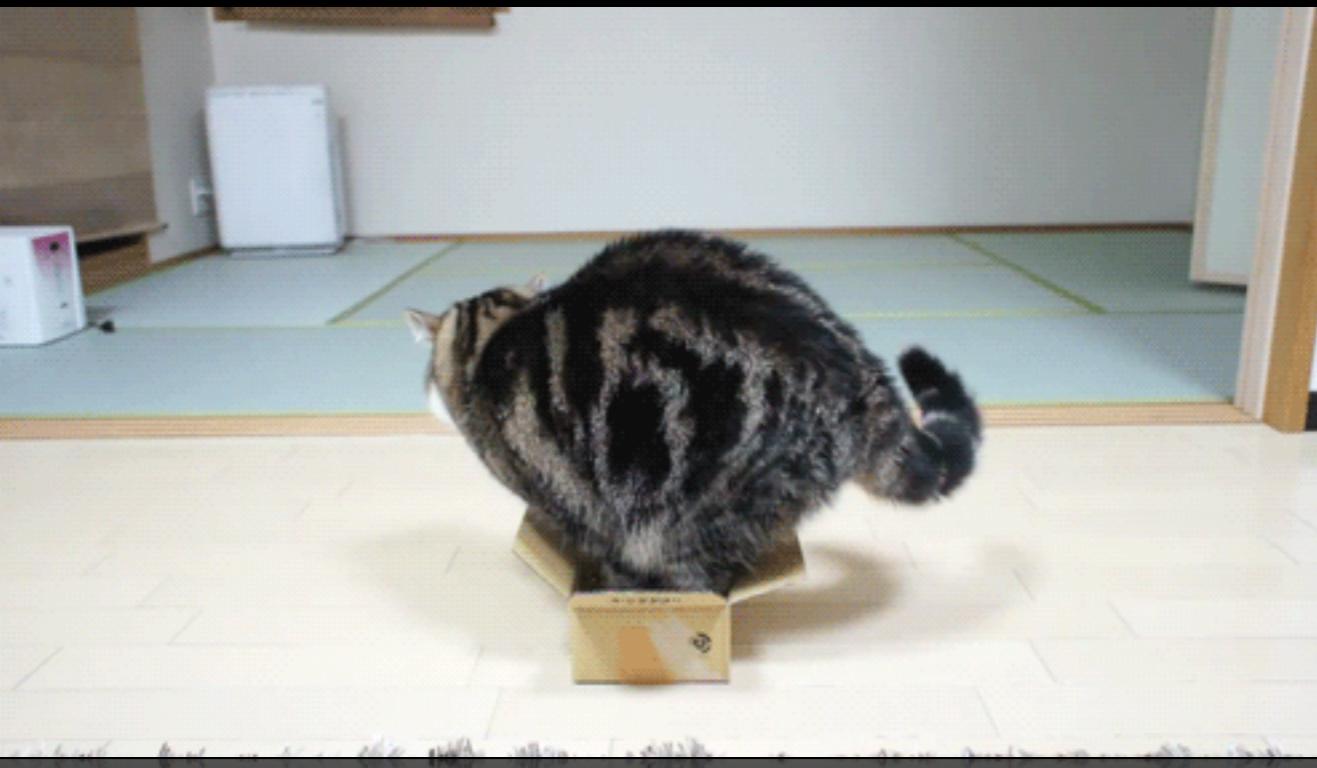
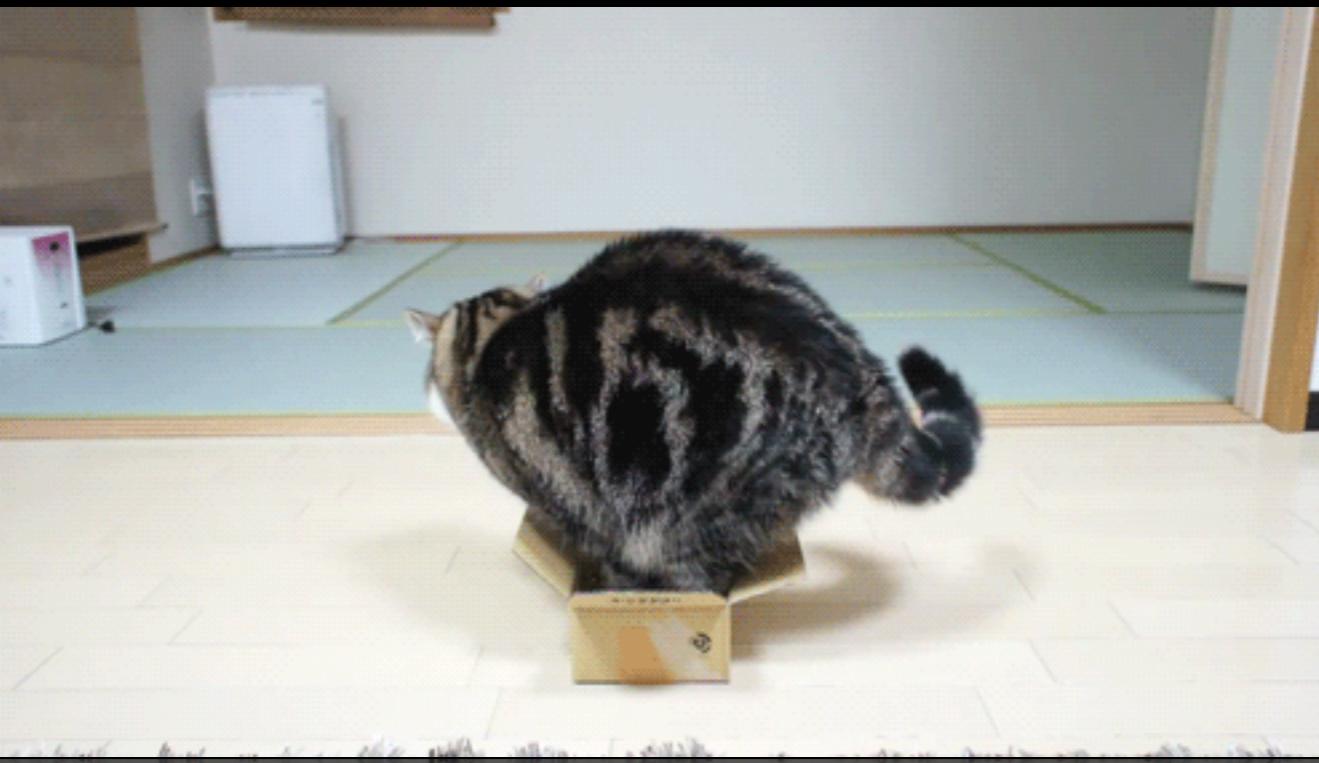


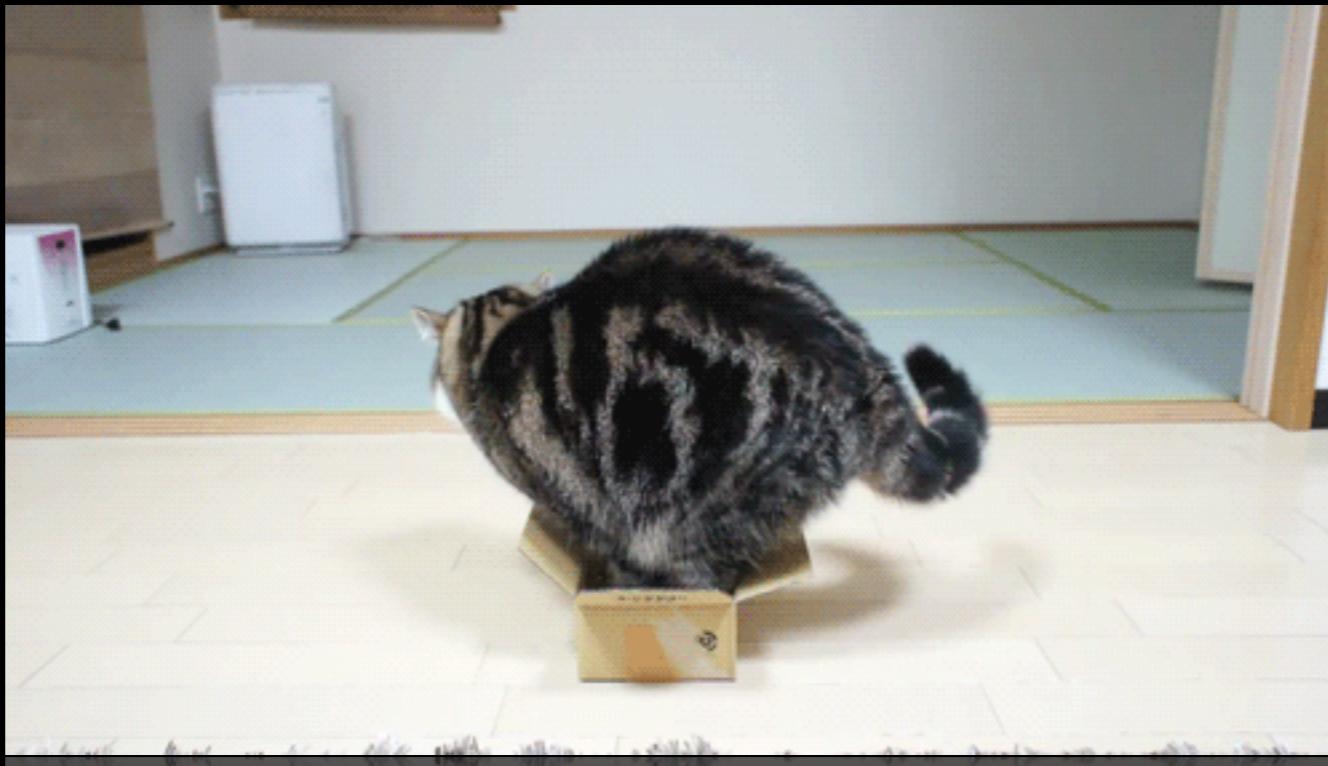
subjectivity predicts adjective ordering preferences

Greg Scontras
Judith Degen
Noah Goodman

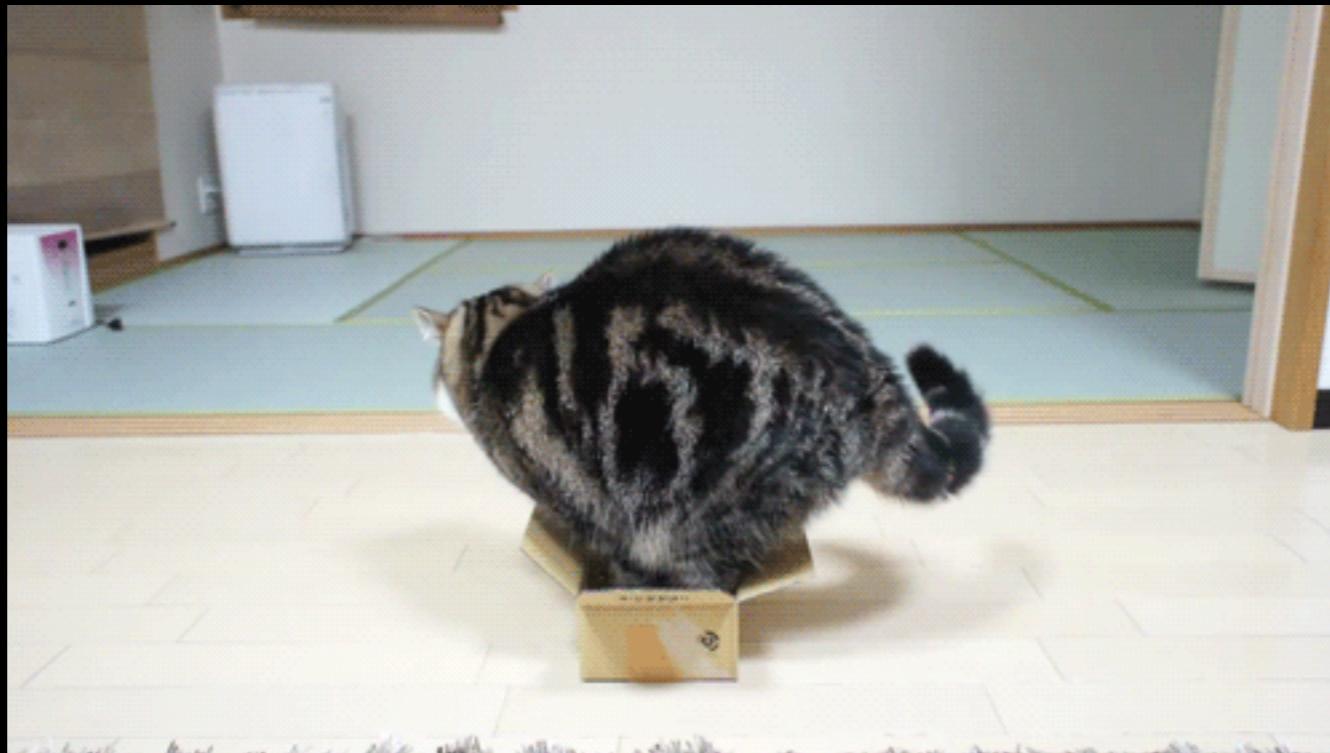




the small brown cardboard box



the small brown cardboard box



the cardboard brown small box

small brown cardboard box

English

small brown cardboard box

English
German
Hungarian
Polish
Turkish
Hindi
Telugu
Mandarin
Dutch
⋮

pre-nominal

post-nominal

small brown cardboard **box**

box cardboard brown small

English

German

Hungarian

Polish

Turkish

Hindi

Telugu

Mandarin

Dutch

:

Indonesian

Basque

Selepet

Mokilese

Farsi

:

pre-nominal

post-nominal

small brown cardboard **box**

box cardboard brown small

English

German

Hungarian

Polish

Turkish

Hindi

Telugu

Mandarin

Dutch

:

Indonesian

Basque

Selepet

Mokilese

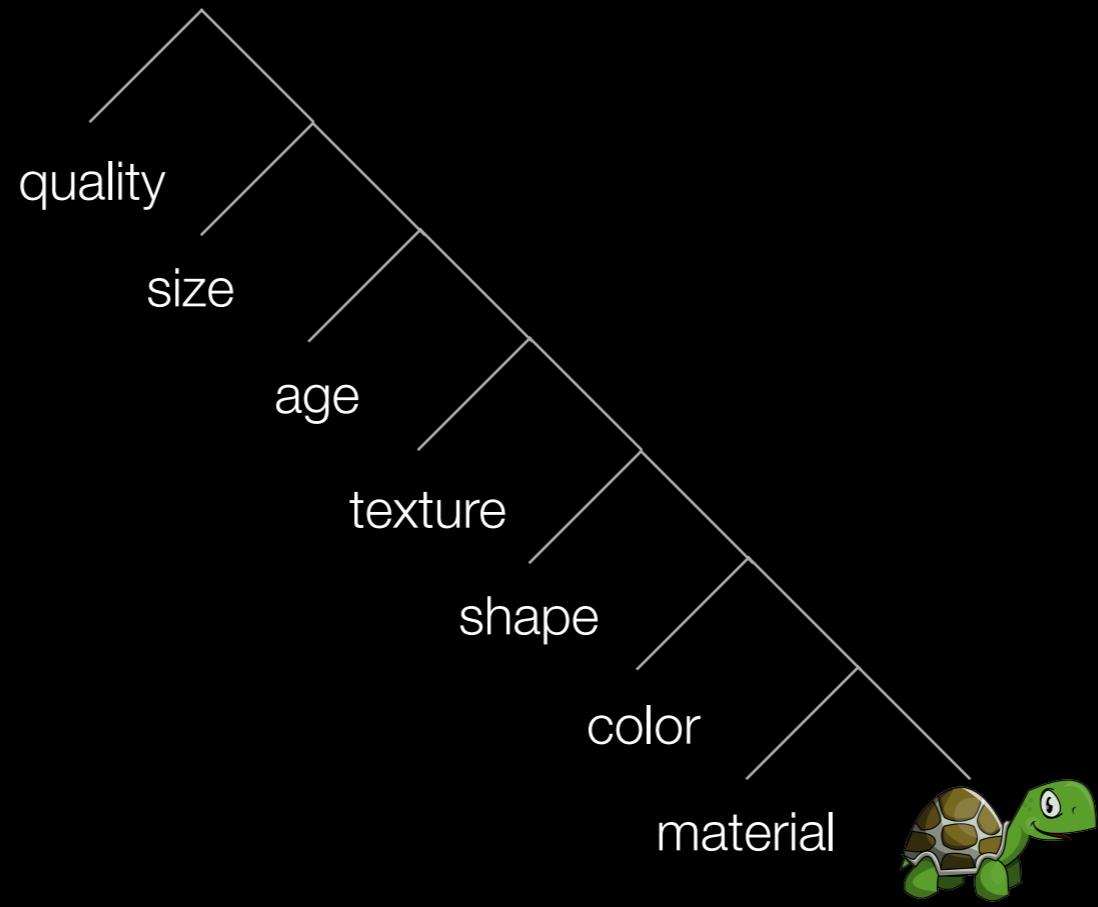
Farsi

:

WHY?

WHY?

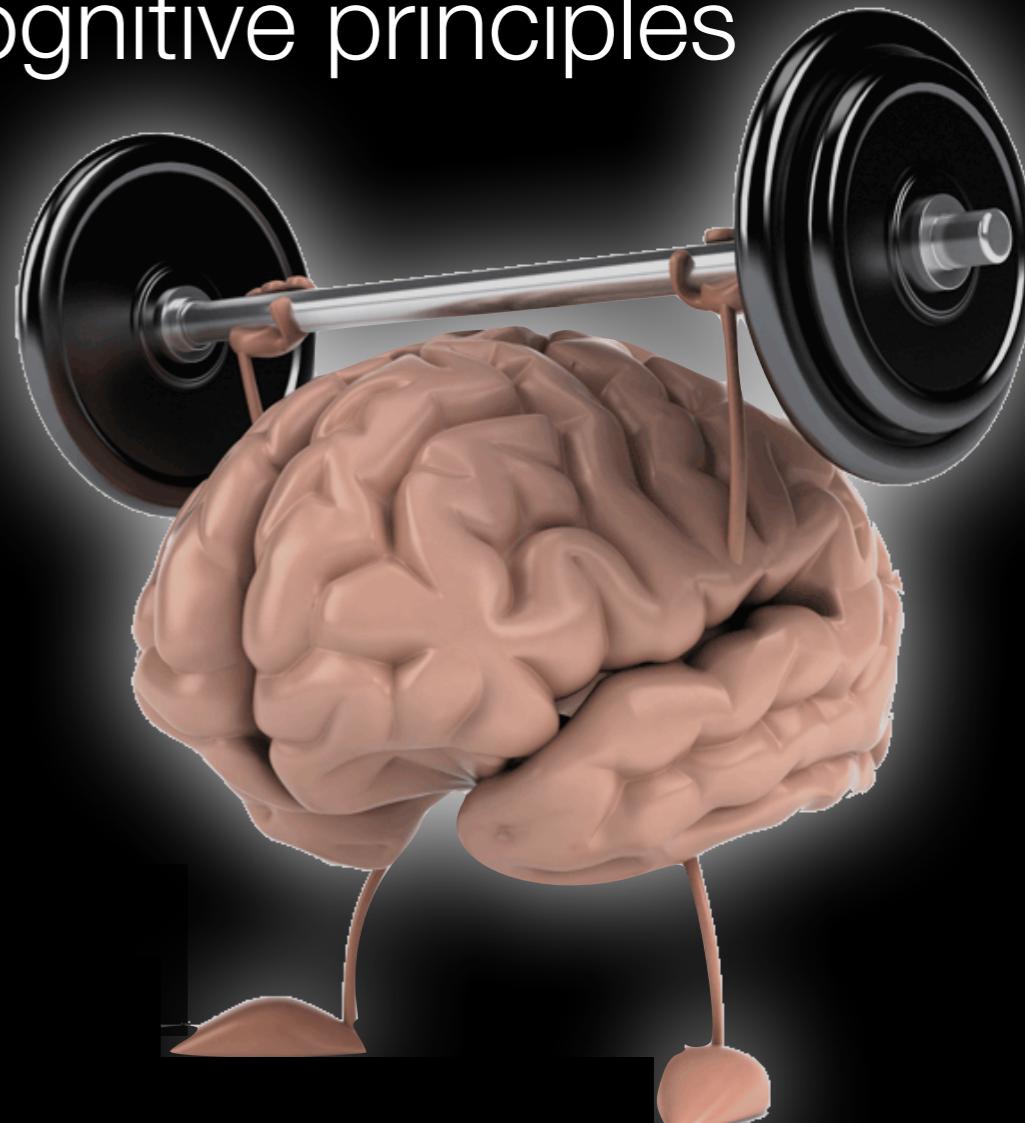
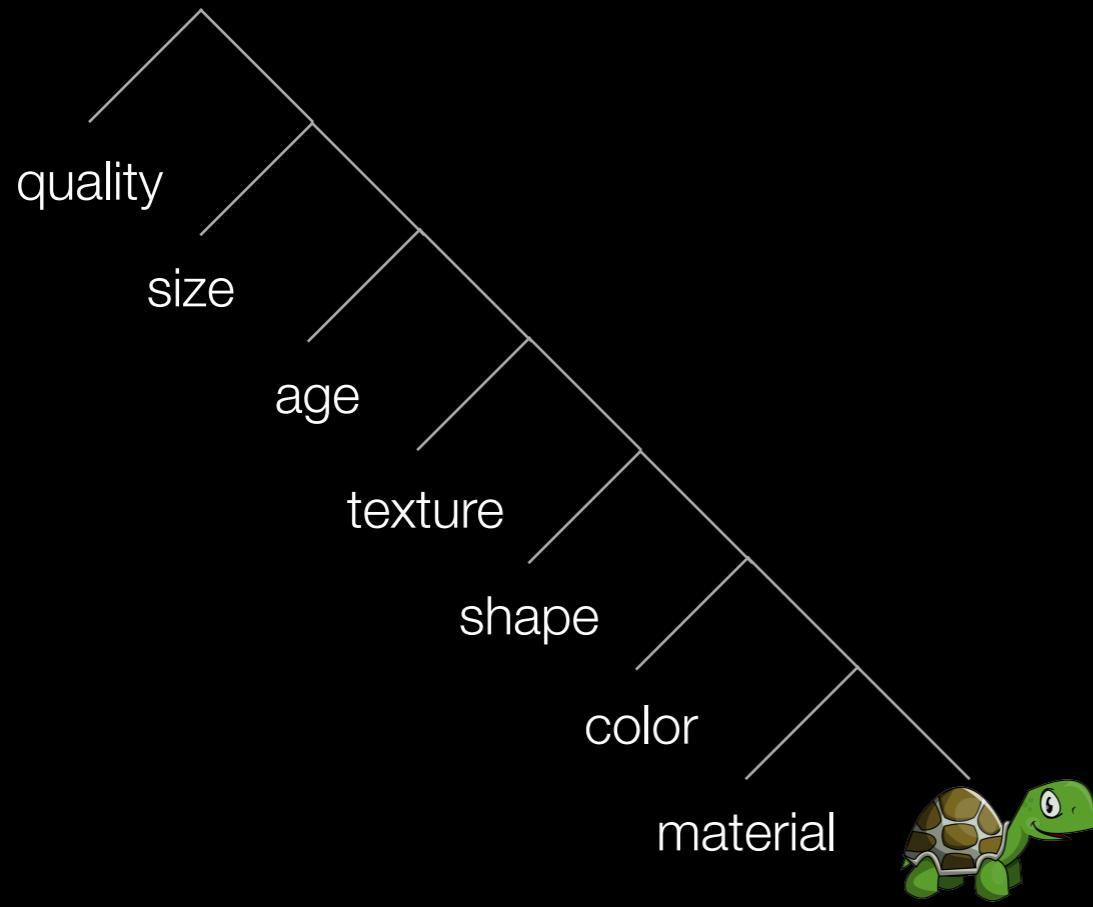
hard-coded
syntax-specific
universal grammar



WHY?

hard-coded
syntax-specific
universal grammar

emergent
from general
cognitive principles



small brown cardboard box



subjectivity
decreases

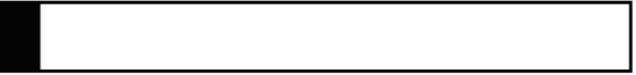


small brown cardboard box

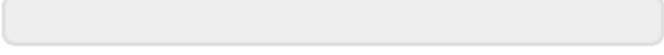


subjectivity
decreases

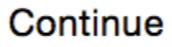
step 1: measure the ordering preferences

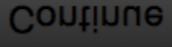
Progress: 

Which description of the chair sounds more natural?

"the small red chair"  "the red small chair"

Adjust the slider to indicate your preference.





26 adjectives from 7 semantic classes

© 2014 THE AUTHOR. PUBLISHED BY EDUCATIONAL PUBLISHING SERVICE

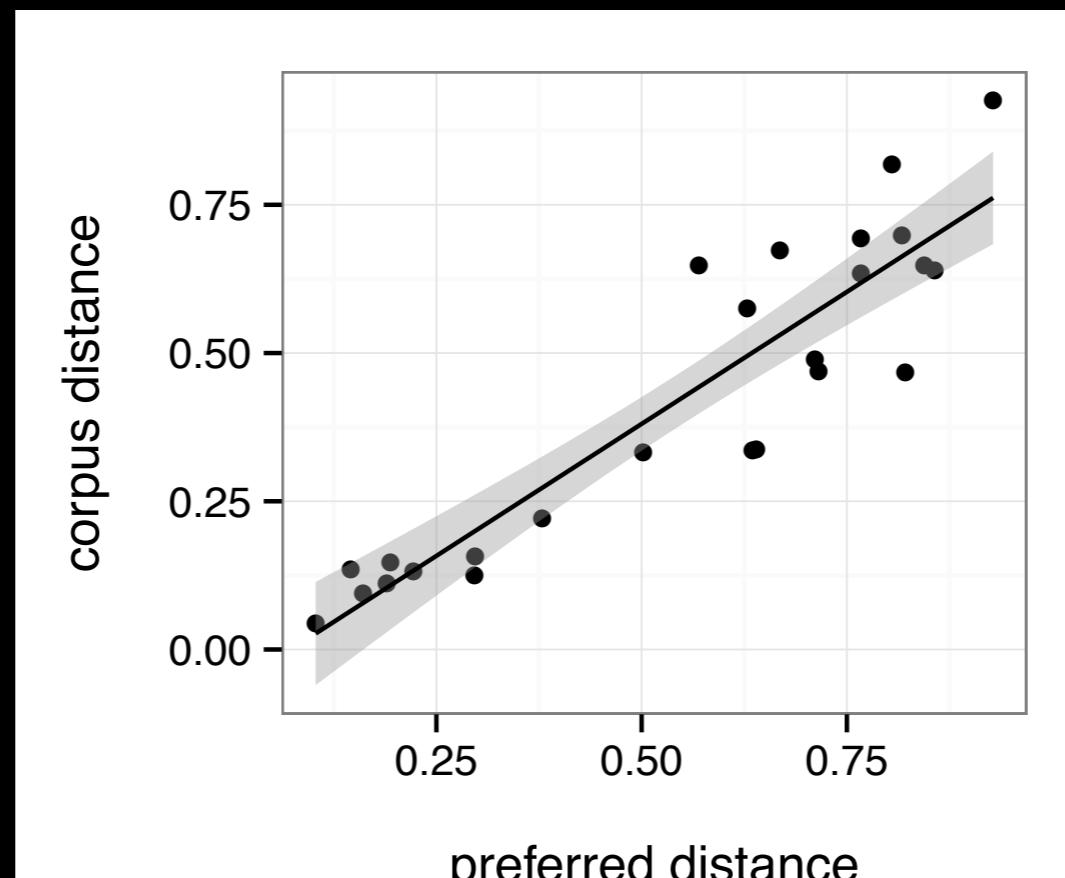
step 2: validate the preference measure with corpora

calculate mean distance from noun

adjective-adjective-noun

38,418 cases from Switchboard and BNC

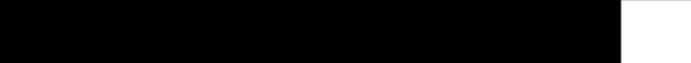
step 2: validate the preference measure with corpora



ordering preferences track corpus measure

$$r^2 = .83; \text{ 95\% CI } [.63, .90]$$

step 3: measure adjective subjectivity

Progress:  [A horizontal progress bar consisting of a black rectangle with a white square at the end.]

Consider the following adjective:

brown

How subjective is the adjective "brown"?

completely objective

completely subjective

[Continue](#)

[Continue](#)

completely objective

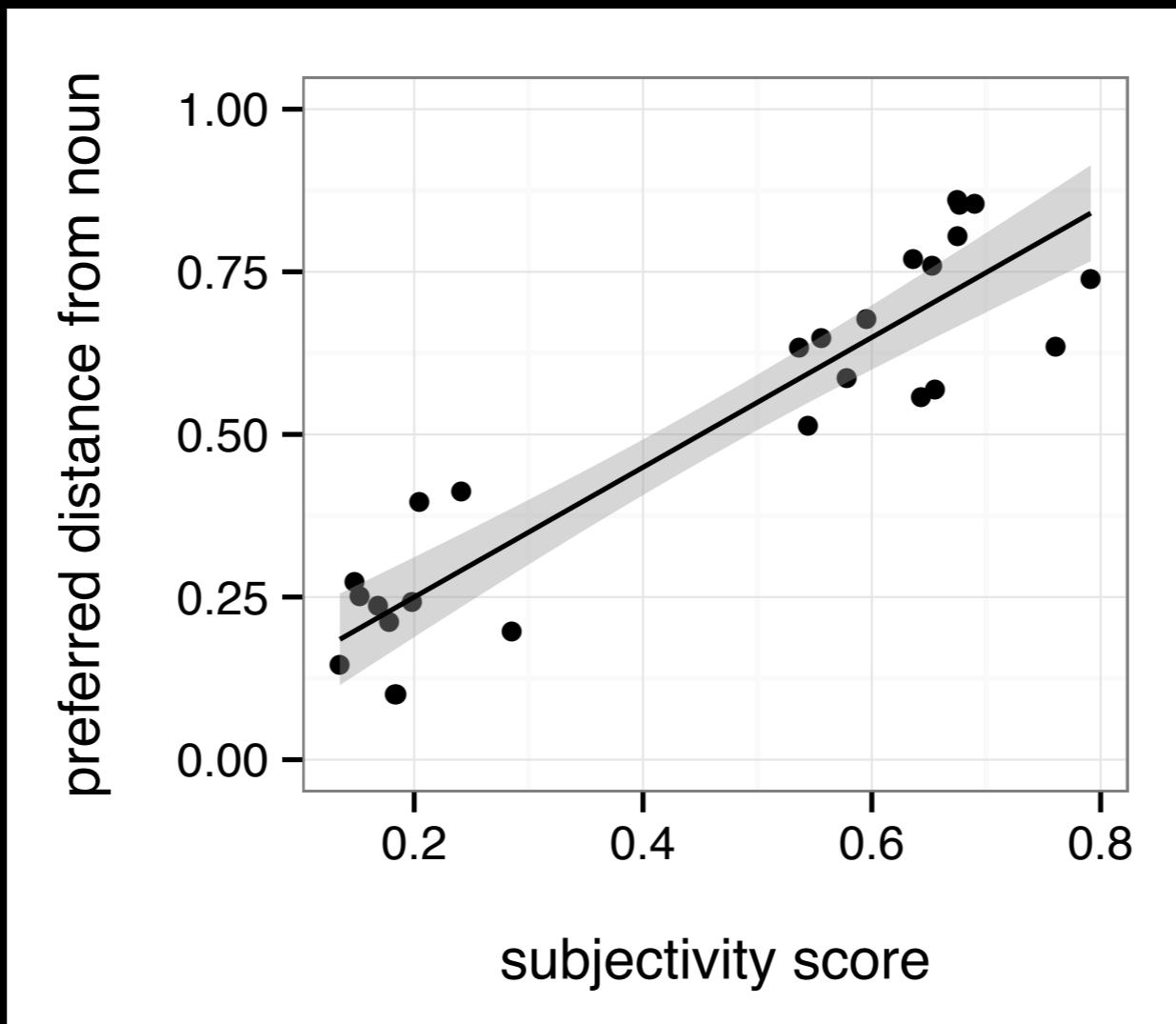
completely subjective

small brown cardboard box



subjectivity
decreases

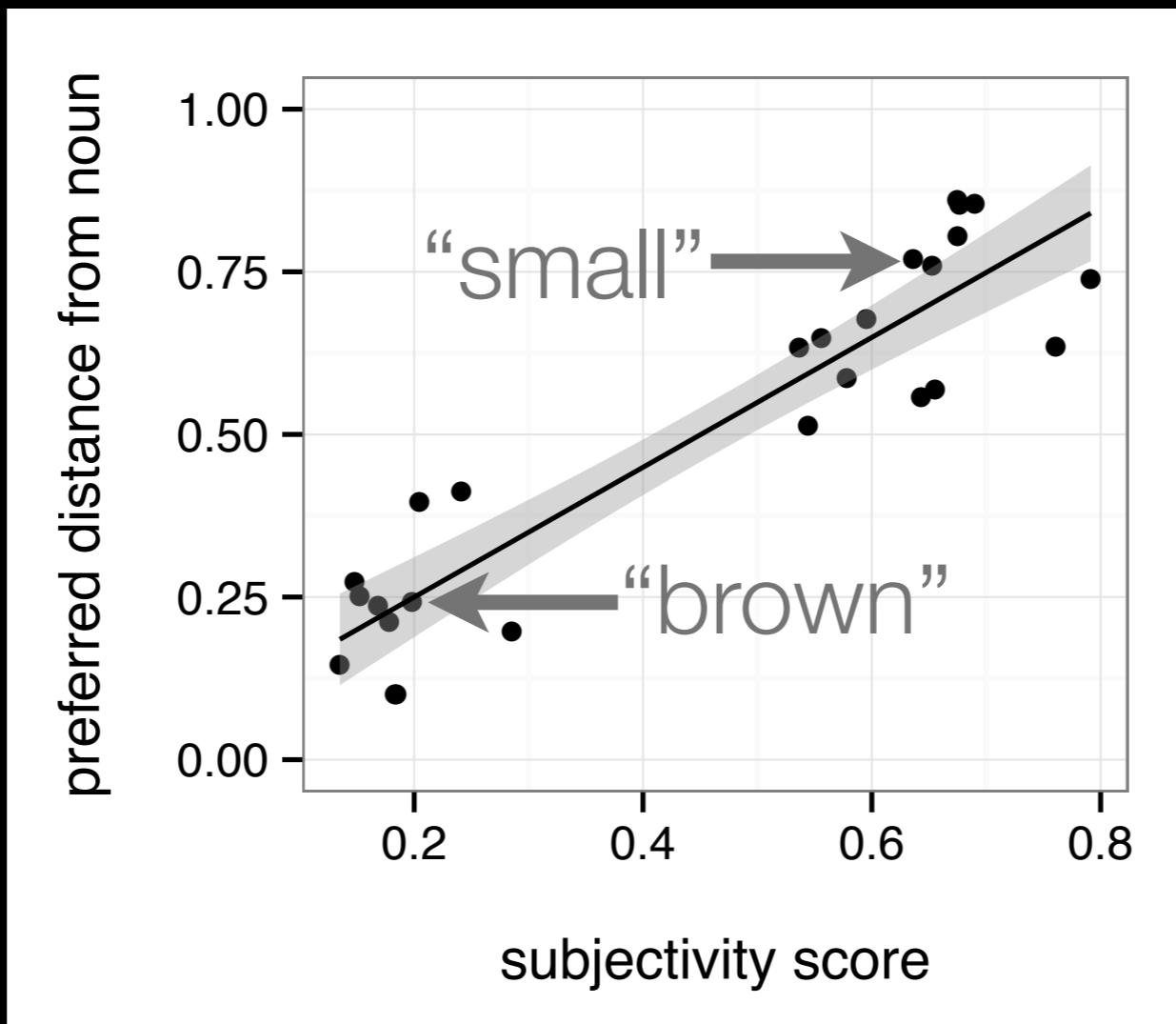
predicting adjective order with subjectivity



subjectivity increases with preferred distance

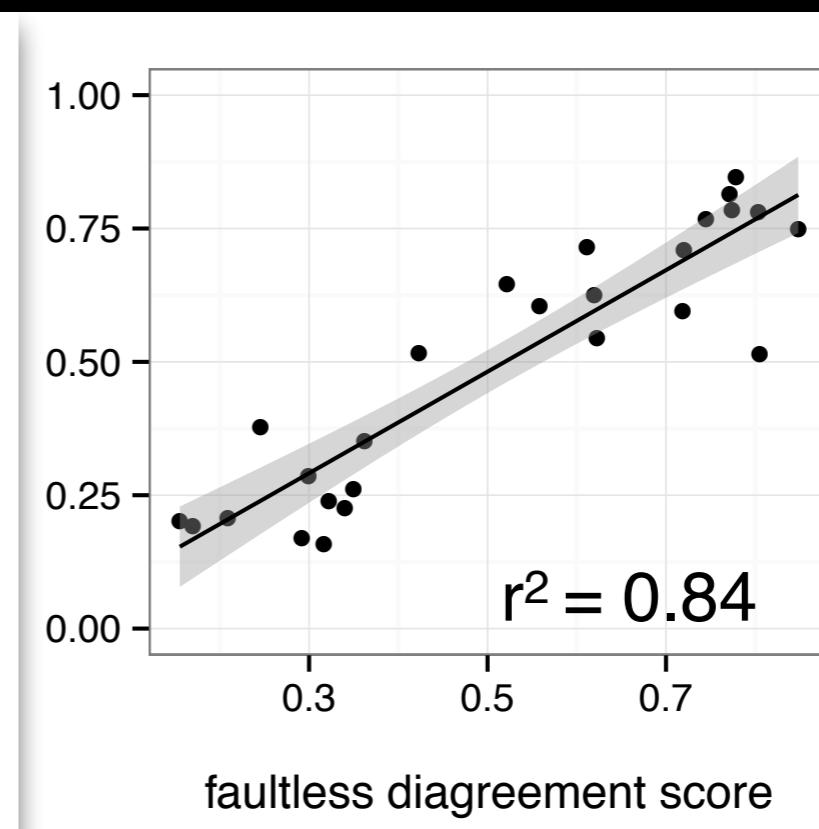
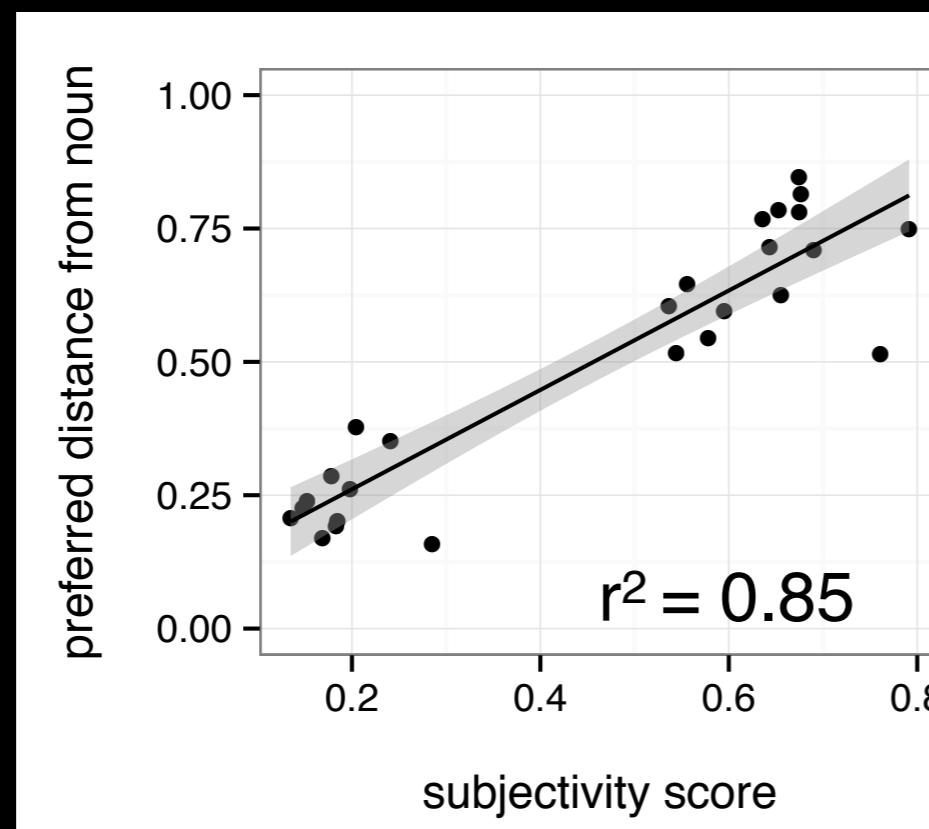
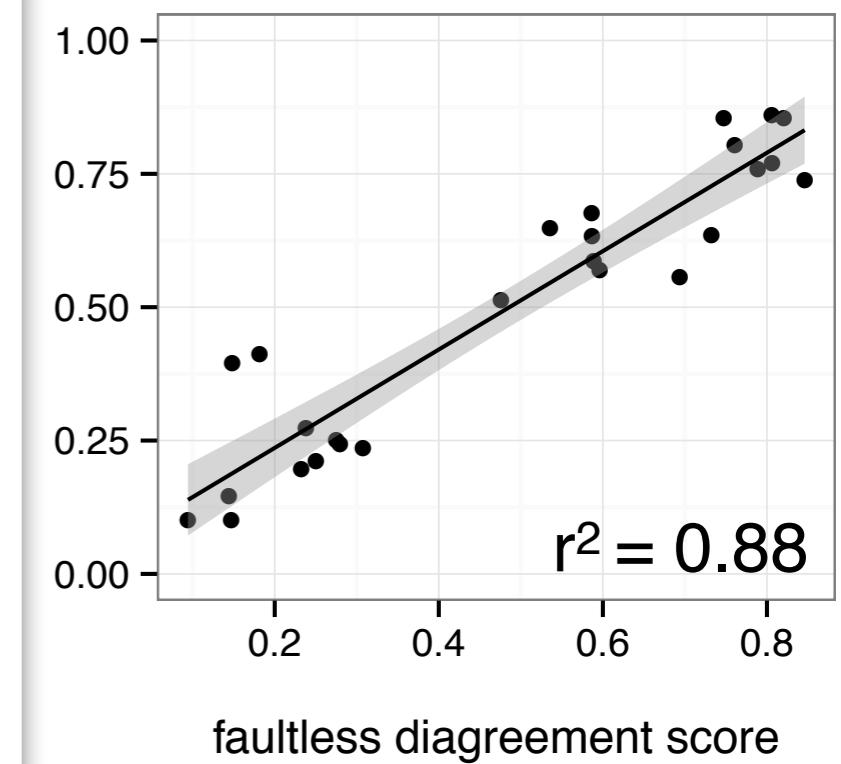
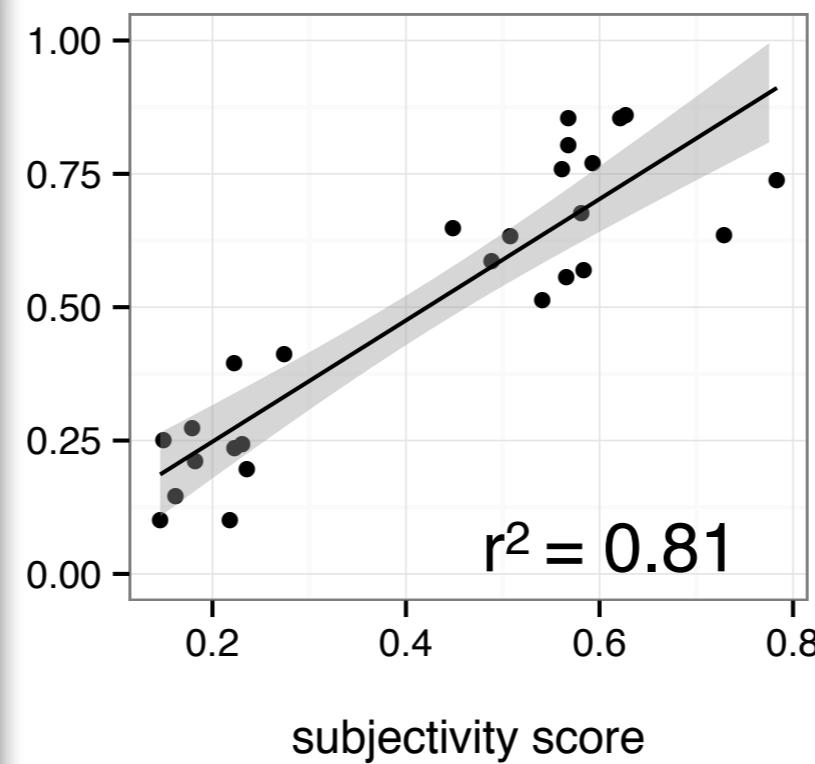
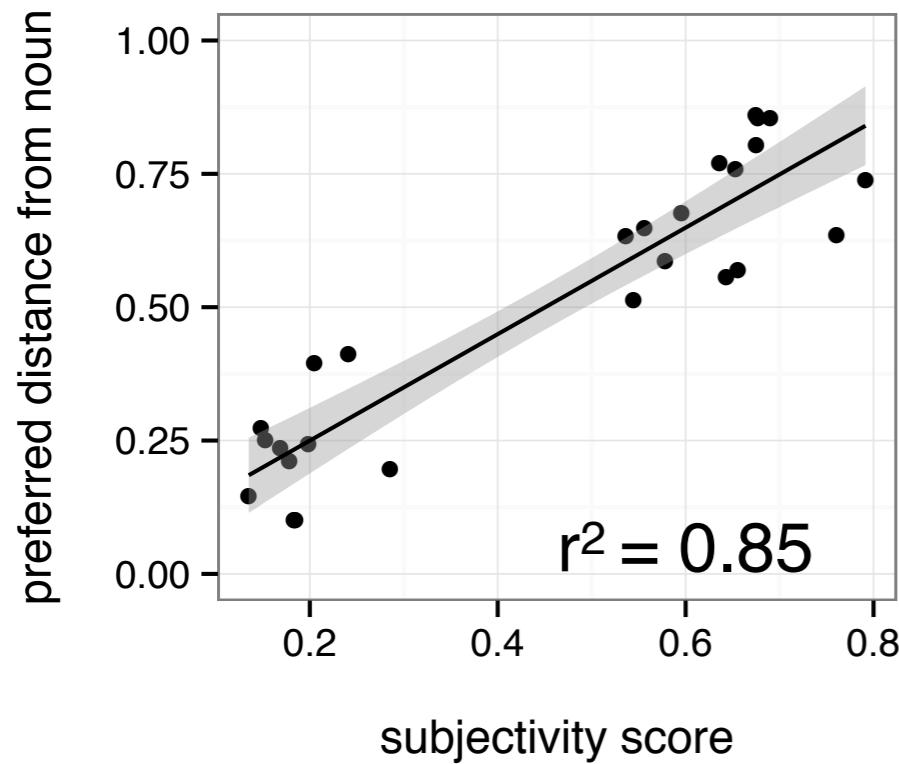
$$r^2 = .85; \text{ 95\% CI } [.75, .90]$$

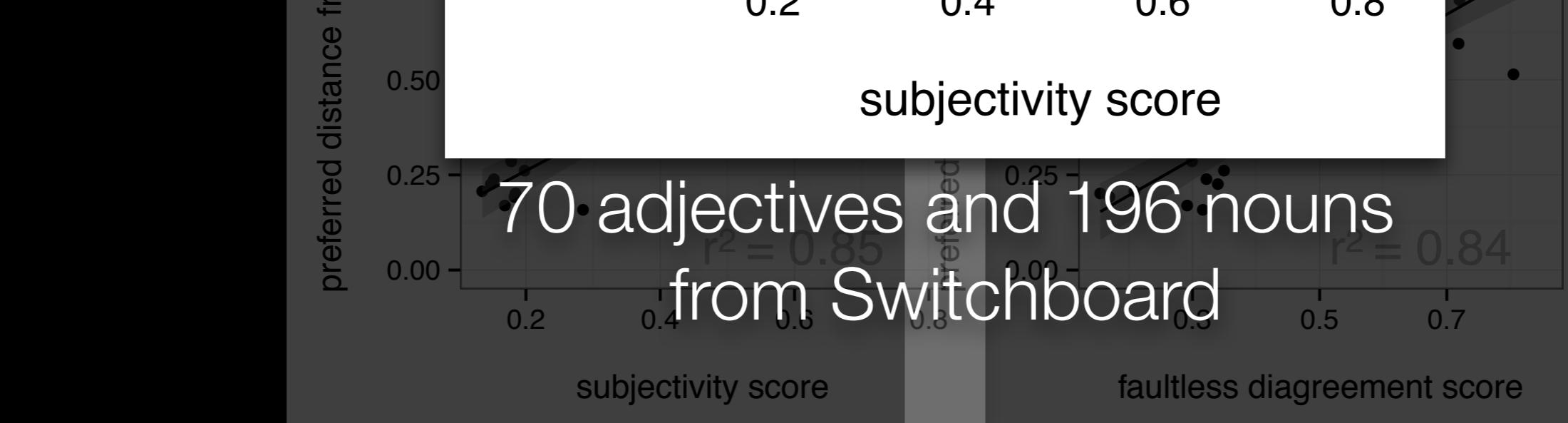
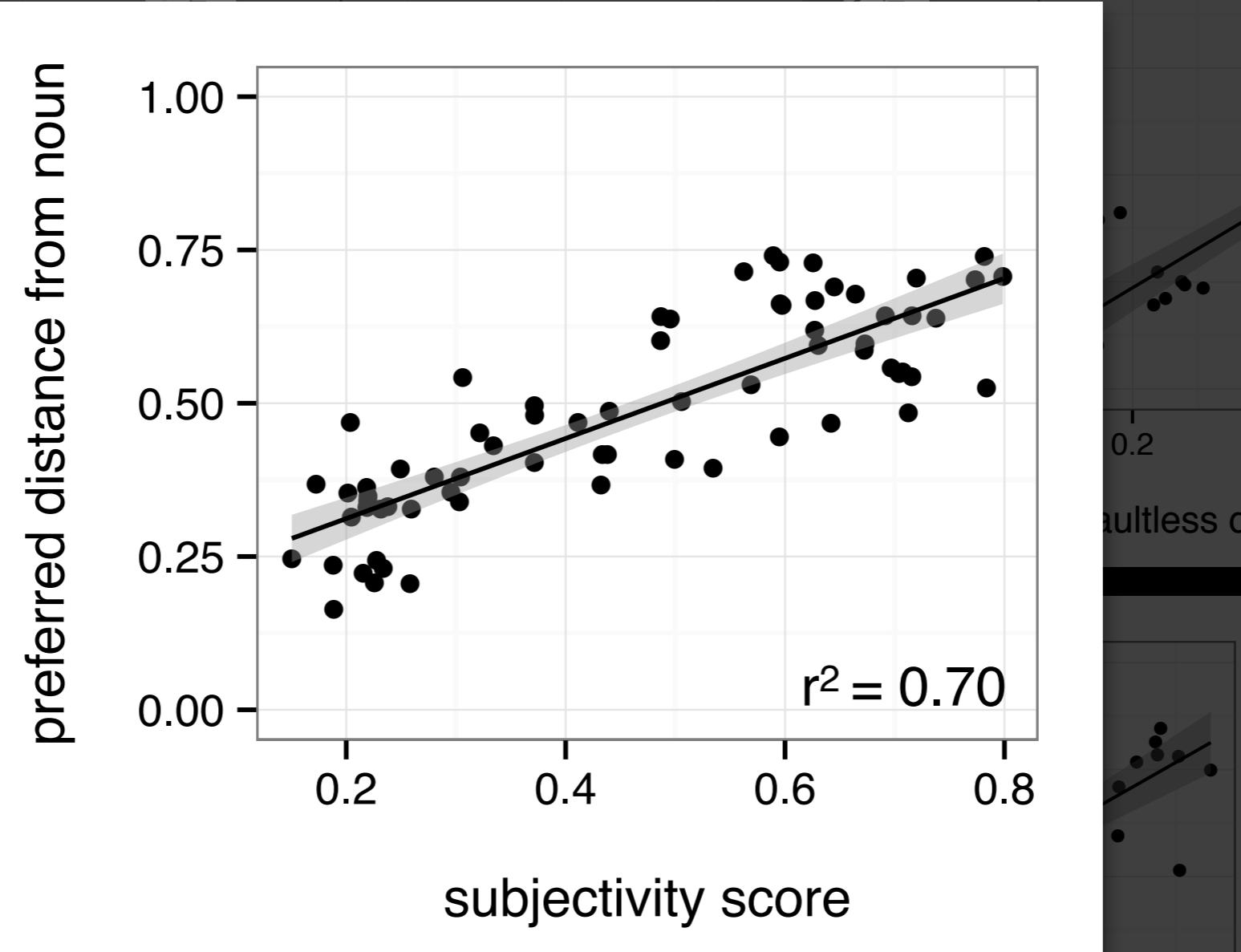
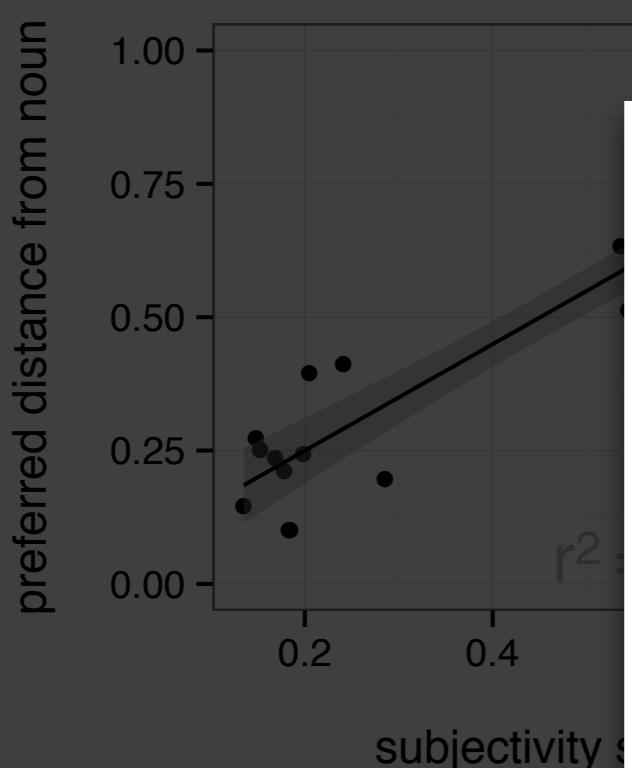
predicting adjective order with subjectivity



subjectivity increases with preferred distance

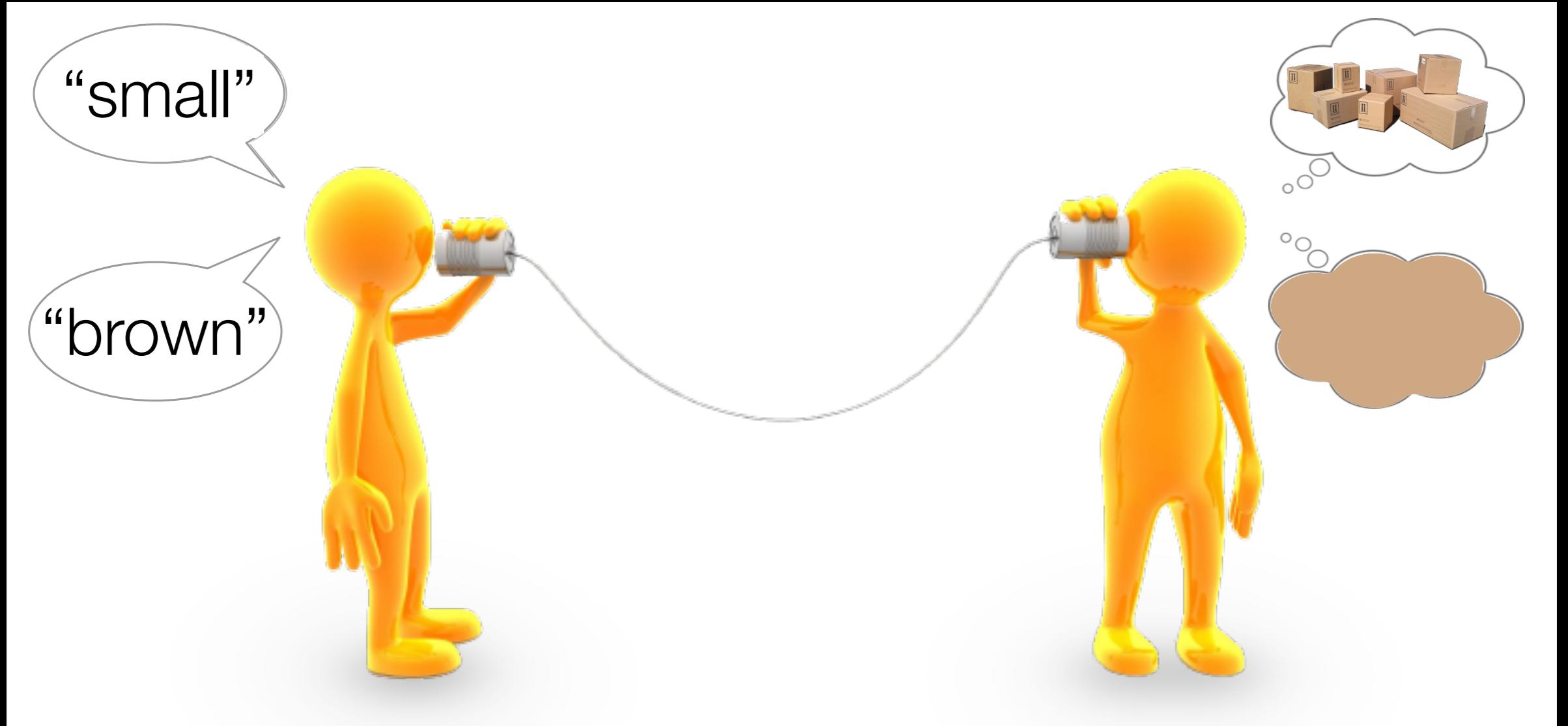
$$r^2 = .85; \text{ 95\% CI } [.75, .90]$$





subjectivity predicts
adjective ordering preferences

less subjective content is more useful

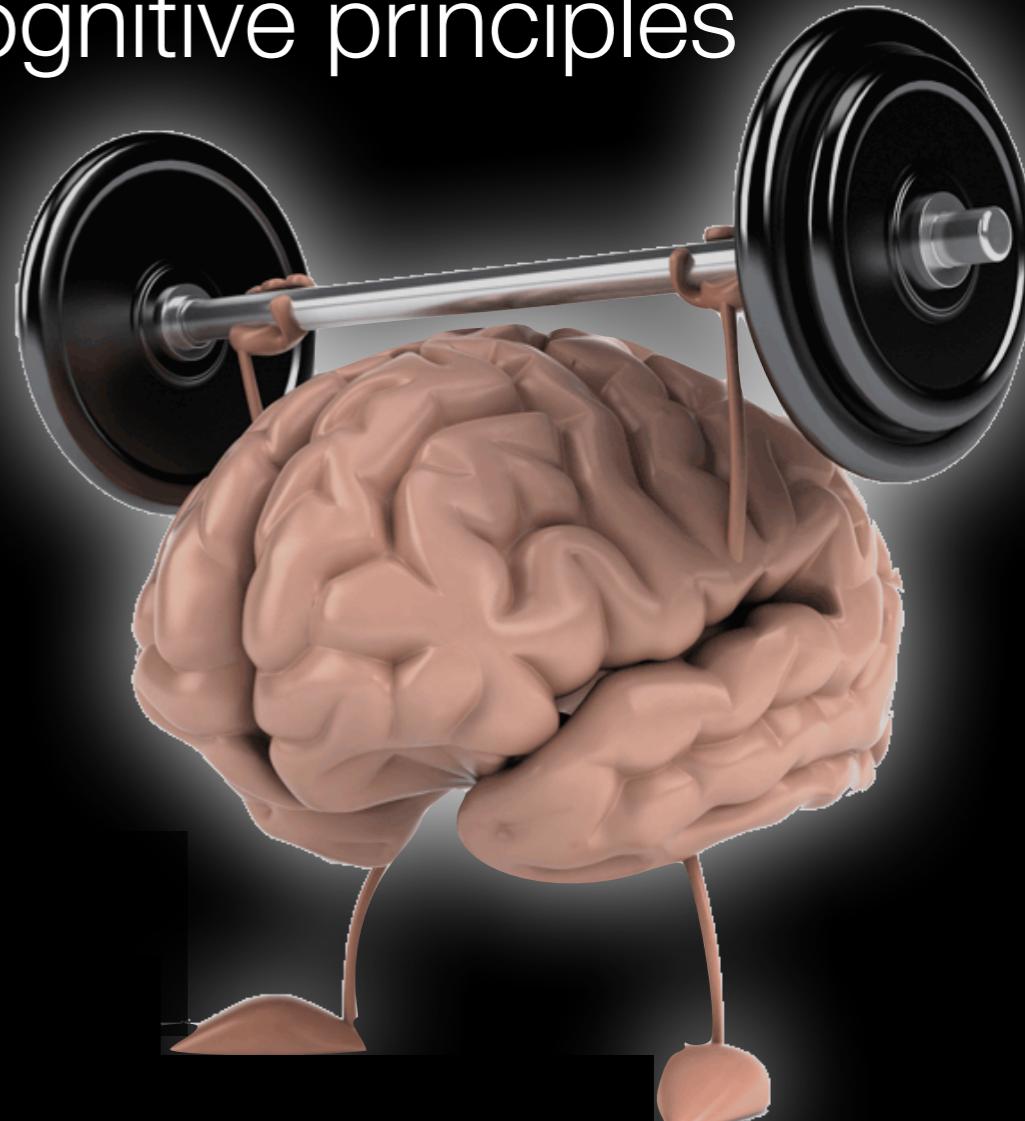
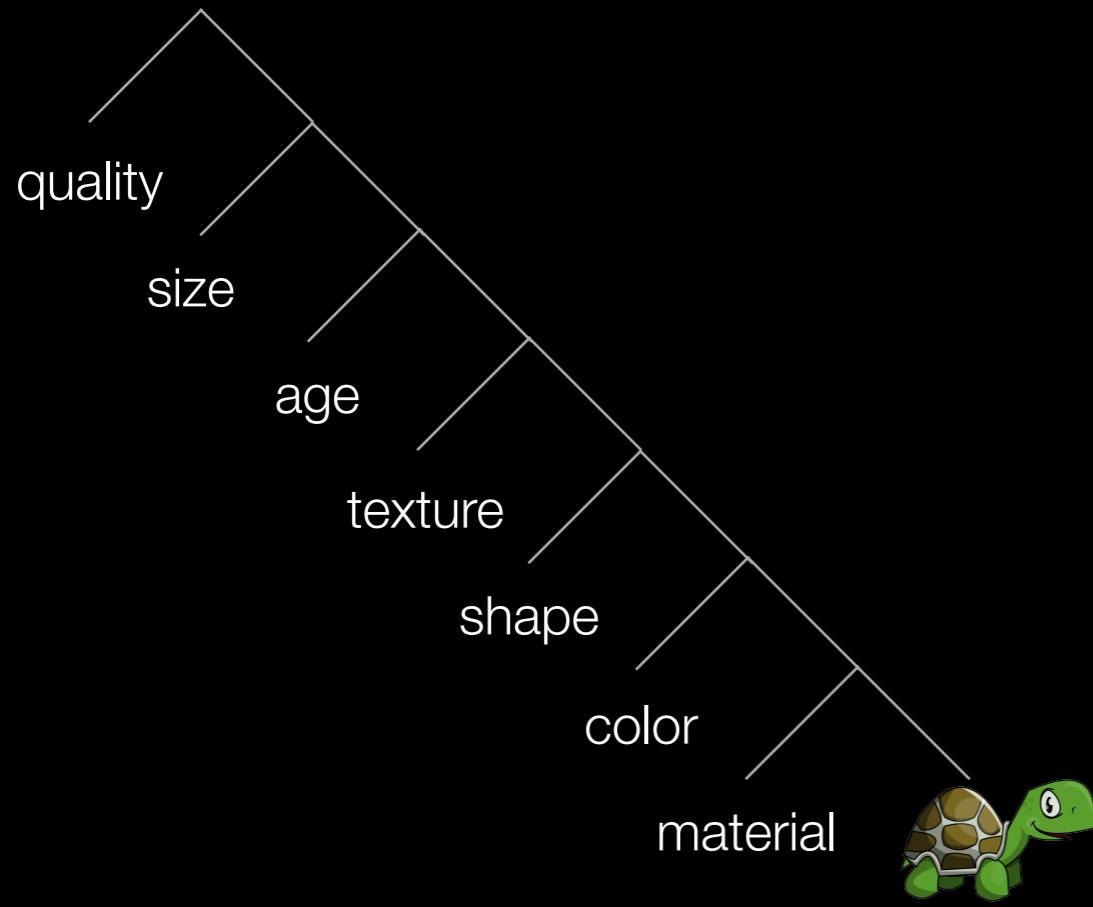


speakers consolidate less subjective
content around the noun

WHY?

hard-coded
syntax-specific
universal grammar

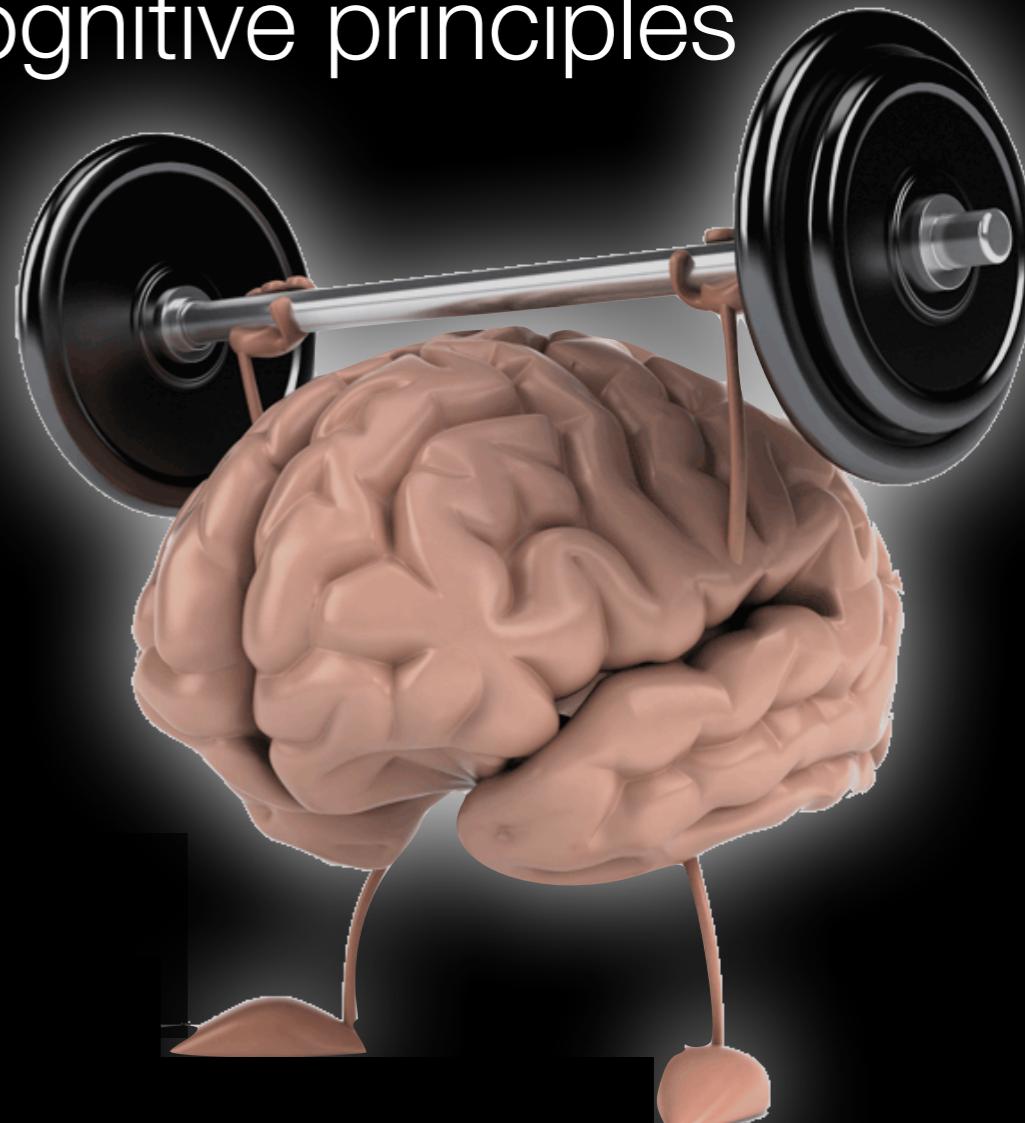
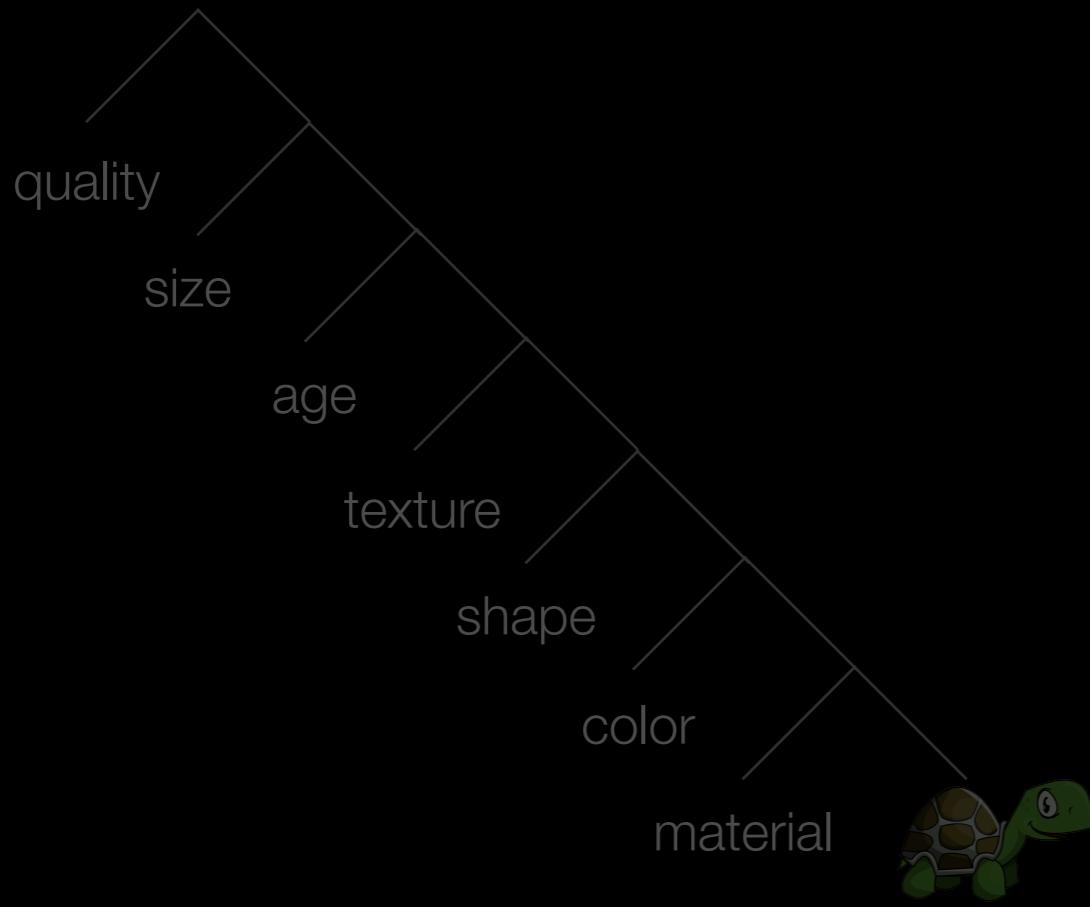
emergent
from general
cognitive principles



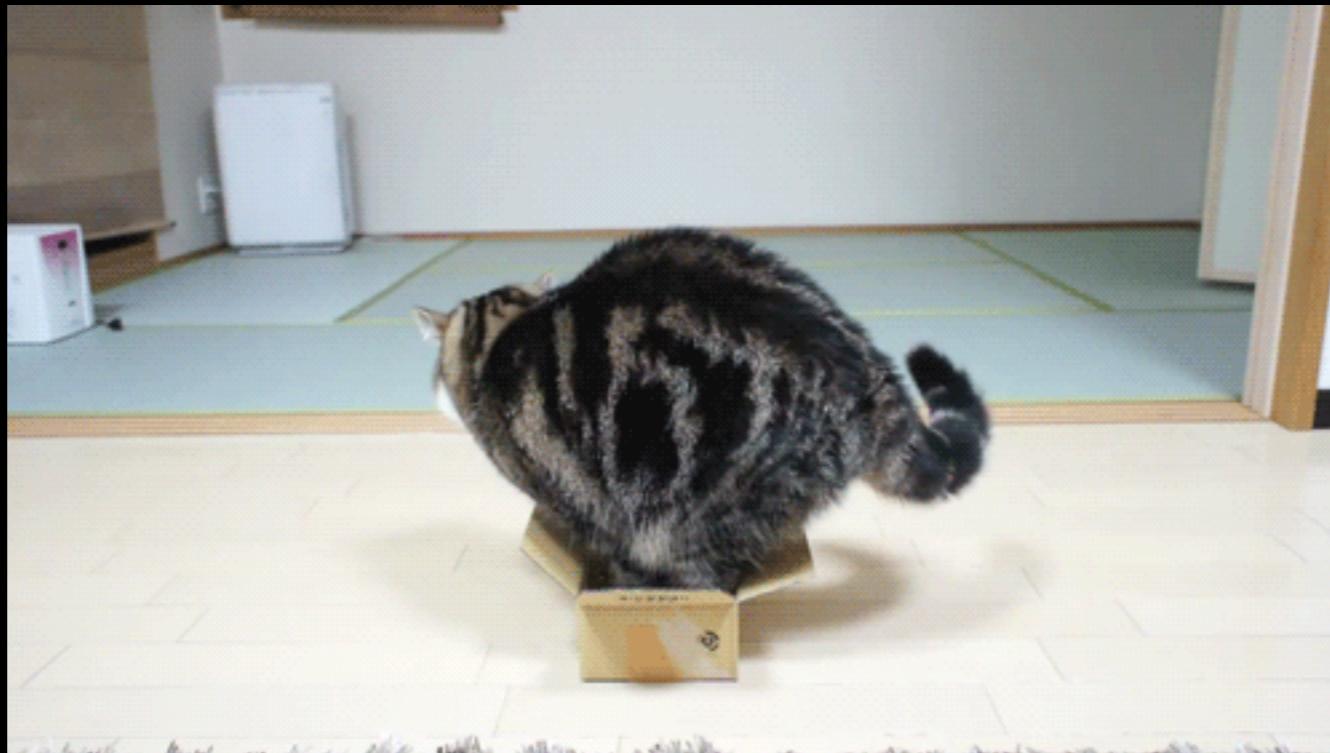
WHY?

hard-coded
syntax-specific
universal grammar

emergent
from general
cognitive principles

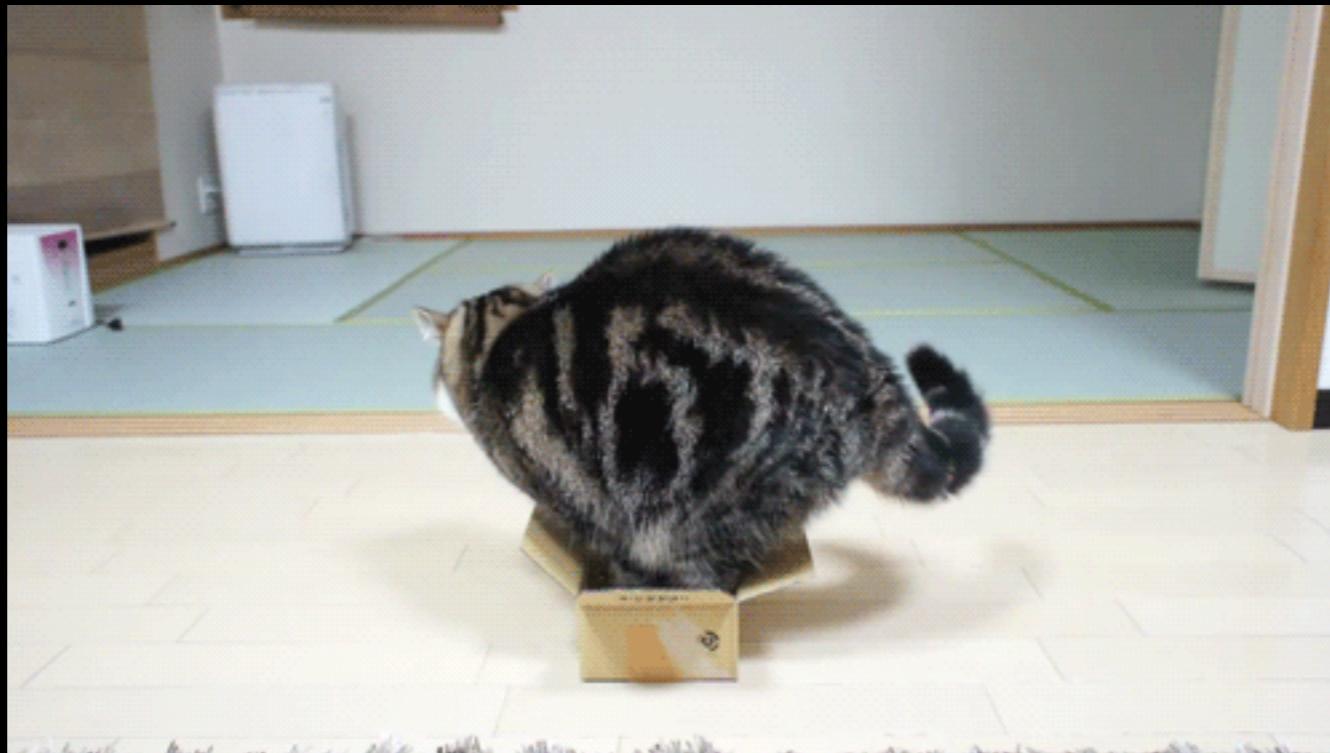


the small brown cardboard box



the cardboard brown small box

the small brown cardboard box



the cardboard brown small box

thank you!

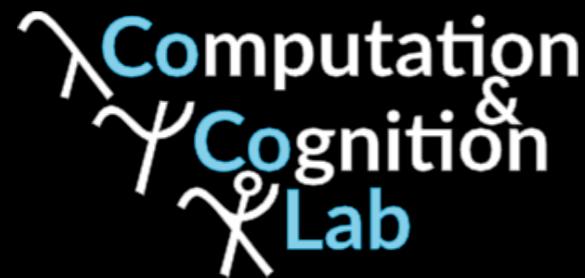
this work was supported by
ONR grant N00014-13-1-0788
James S. McDonnell Foundation
DARPA award FA8750-14-2-0009



Computation
&
Cognition
&
Lab

thank you!

this work was supported by
ONR grant N00014-13-1-0788
James S. McDonnell Foundation
DARPA award FA8750-14-2-0009



Experimental Approaches
to Syntax and Semantics

10am Sunday
Lone Star A