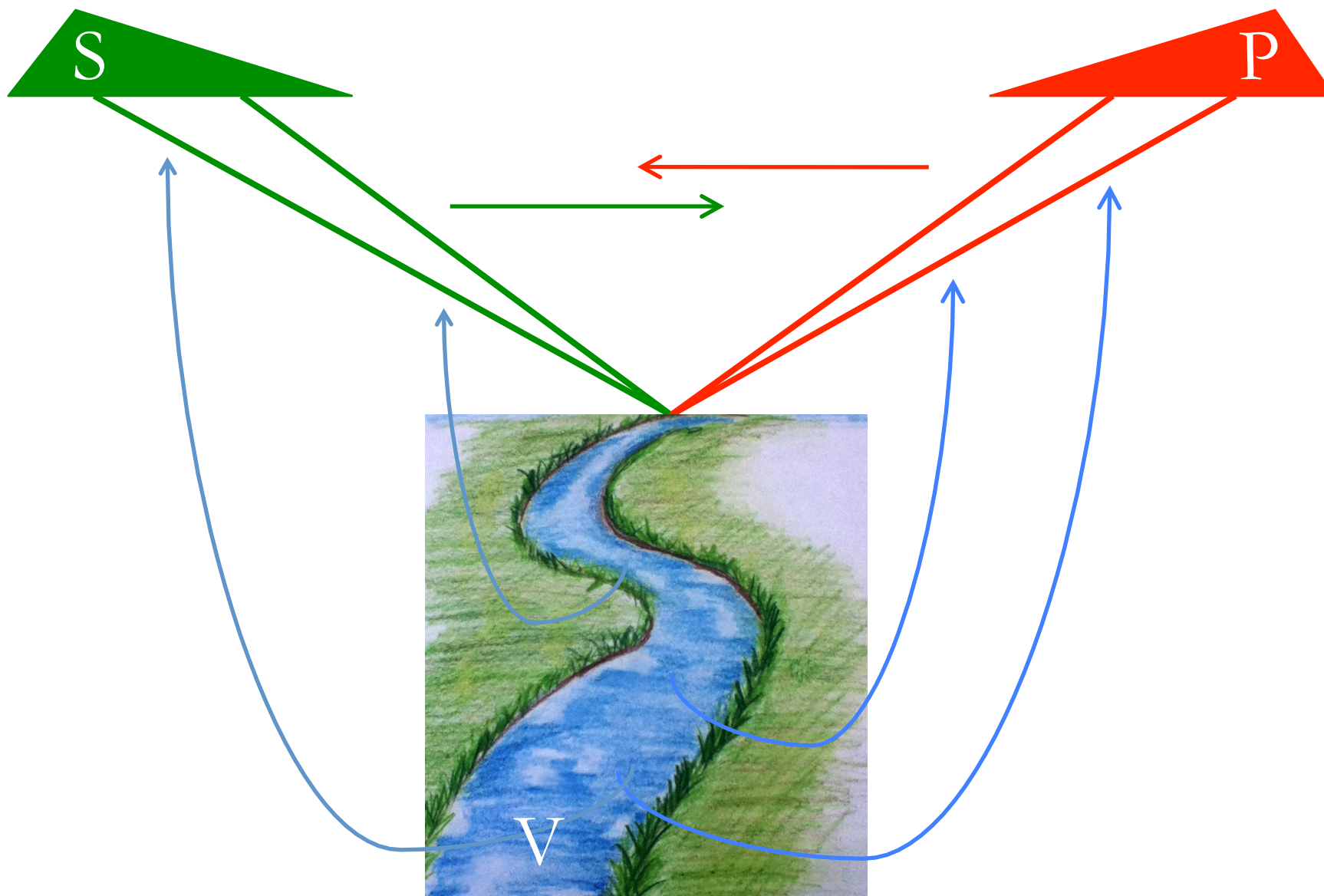


# variation won't give up the ghost: the verb-particle 'alternation' in and out of grammar

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- Thanks to:
  - Bill Haddican
  - Kyle Gorman, Laurel MacKenzie, Joel Wallenberg

# a variationist's view of the world



# syntactic variation

	stable synchronic	unstable synchronic diachronic cross-linguistic
parametric variation	<b>no</b>	<b>yes</b>
other source (e.g. optional rules?)	<b>yes?</b>	<b>yes?</b>

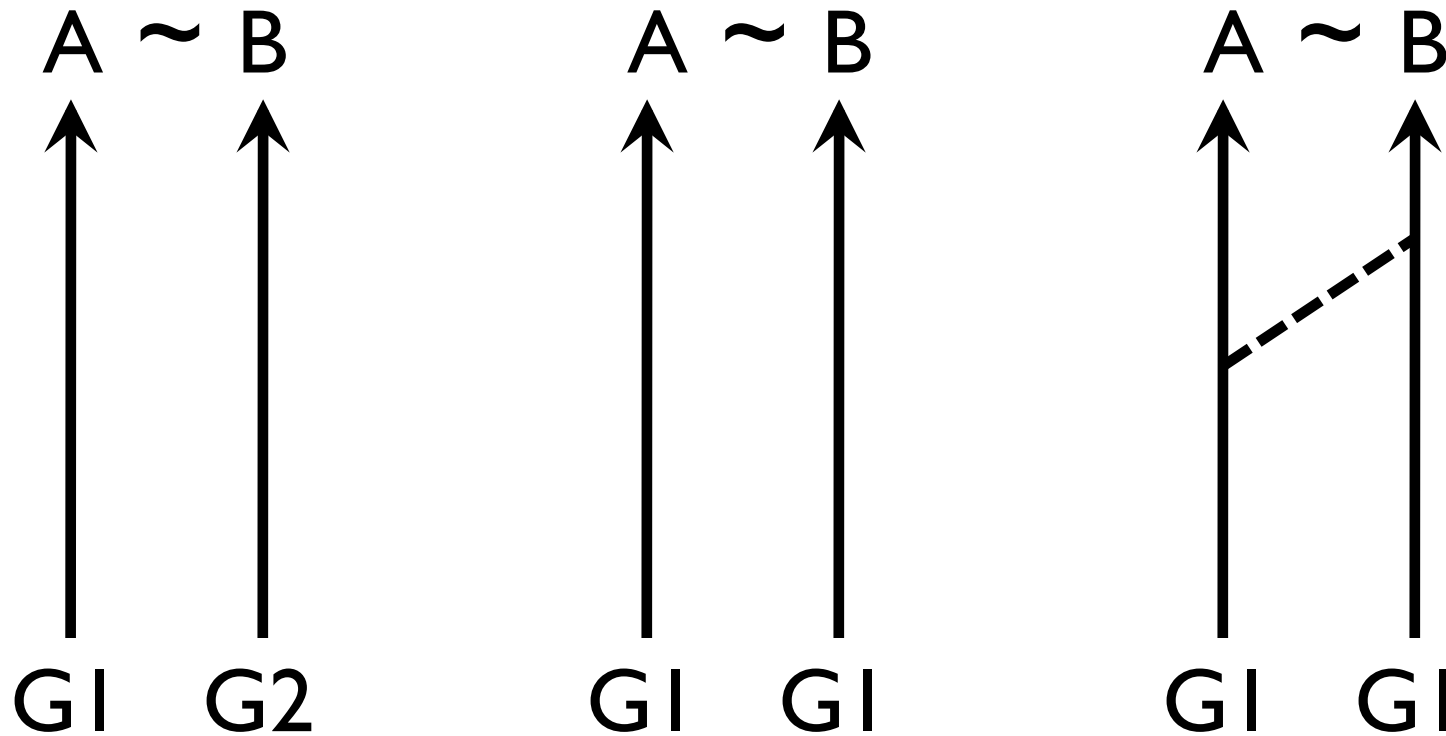
# the interface between syntax and discourse / information structure / phon. context / pragmatics / processing / prosody / recency / sociolinguistics / style

- Kroch: shifts the balance of grammars' output
- Taylor: applies separately to grammars' output
- can we use a surface analysis to help identify syntactic structures and processes?
- can we tell if variation comes from one or two grammars (without waiting centuries)

not to mention lexical incl. frequency

# the particle verb... not so fast

- What is an alternation? (meaning and structure)



- dative, genitive, locative, (passive, causative)

# the particle verb variable

- Bert threw the wrapper away (VOP)
- Bert threw away the wrapper (VPO)
- Bert kept (on) his shirt (on). VOP can be idiom
- Bert threw (away) the key (away). VPO can be idiom
- Bert gave (up) the ghost (up). VPO idiom, VPO semi
- Bert closed (up) shop (\*up). VPO idiom, VOP bad
- Bert put (on) the kettle (on). discourse, UK vs USA
- can classify by whether VP entails V and/or P
- meaning: no referential difference, little ‘social’


# the neighborhood

- 1) Bert rolled (in) the beer keg (in).
  - 2a) Bert rolled (\*in) the beer keg (in) the room.
  - 2b) Bert rolled (?in the room) the beer keg (in the room).
- neighbors: not part of the alternation, but you wouldn't want to treat them totally differently.
  - similarly, as we will see, information structure affects the variable: old/topic before new/focus
  - with a pattern found generally across languages, we don't want a particle-verb-specific solution...

# a particle-verb-specific solution


## *Head raising of the particle*

[PredP P-p-Pred [<sub>p</sub>P OBJECT [<sub>p'</sub> P-p [PP P ]]]]



## *Old information object contexts*

cut [<sub>TopicP</sub> [DP the tree][<sub>TOPIC</sub>] [<sub>Topic'</sub> Topic [PredP [DP the tree] down]]]



## *Narrow object focus contexts*

cut [<sub>TopicP</sub> down[<sub>TOPIC</sub>] [<sub>Topic'</sub> Topic [PredP the tree down]]]





# the effects

- ‘social’: time, register/style, variety: US vs. UK
  - ‘individual’: interacts with all the below
  - prosodic: object weight
    - affected by processing constraints
    - never represented in syntax
  - information-structural: old/new, topic/focus
    - affected by processing constraints
    - sometimes represented in syntax
  - lexical: v, p, v-p pair, frequency, idiomaticity, ...
- 
- The diagram consists of the words 'known' and 'about' in a bold, black, sans-serif font. A solid black arrow points from 'known' to the left, towards the 'prosodic' bullet point. Another solid black arrow points from 'about' to the left, towards the 'information-structural' bullet point. A third solid black arrow points from 'about' downwards, towards the 'information-structural' bullet point. A dashed black arrow points from 'known' upwards and to the right, towards the 'social' bullet point.

# tools and proposals

- Tool 1:  
As well as reporting average effect coefficients, observe correlations by subject (and by stimulus)
- Tool 2:  
As well as reporting average effect coefficients, observe interactions (effect of X depends on Y)
- Proposal 1:  
if effects correlate, may be reflexes of same thing
- Proposal 2:  
if effects interact, must be on a par structurally

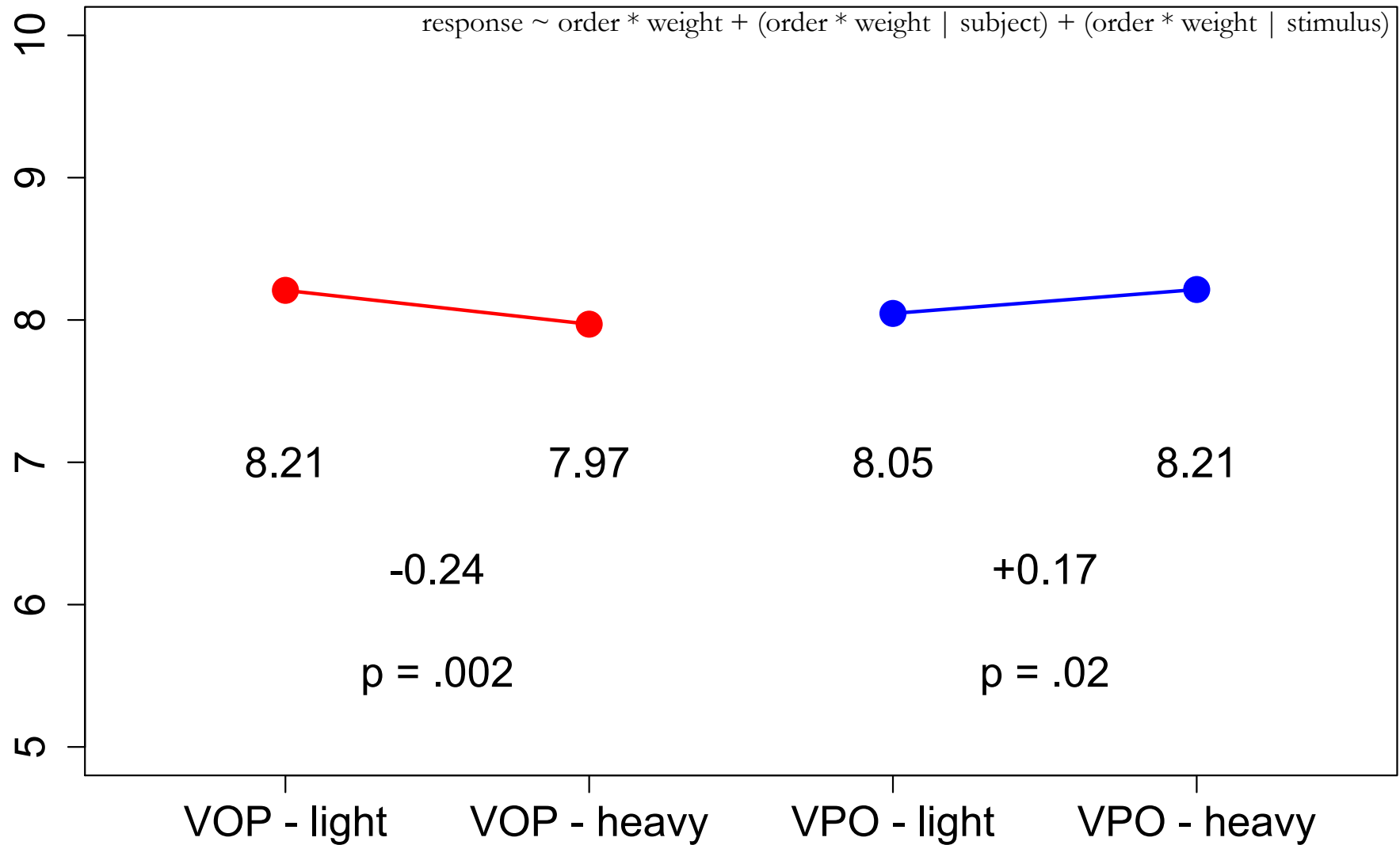
# experiment I

- two acceptability judgment experiments
- subjects judged sentences ‘bad’ (0) to ‘good’ (10)
- experiment 1: 297 subjects, US/Can./UK/Ire.
- object weight: ‘the (lumpy 10-pound) pumpkin’
- object oldness: via cataphoric pronoun  
Because she had no money... *vs.* Because it tasted funny...  
... Susan spit the conference dinner out.
- 32 stimuli, all compositional (Lohse et al. 2004)
- 32 fillers/normalizers – treated as fillers here
- able to look at VPO and VOP separately

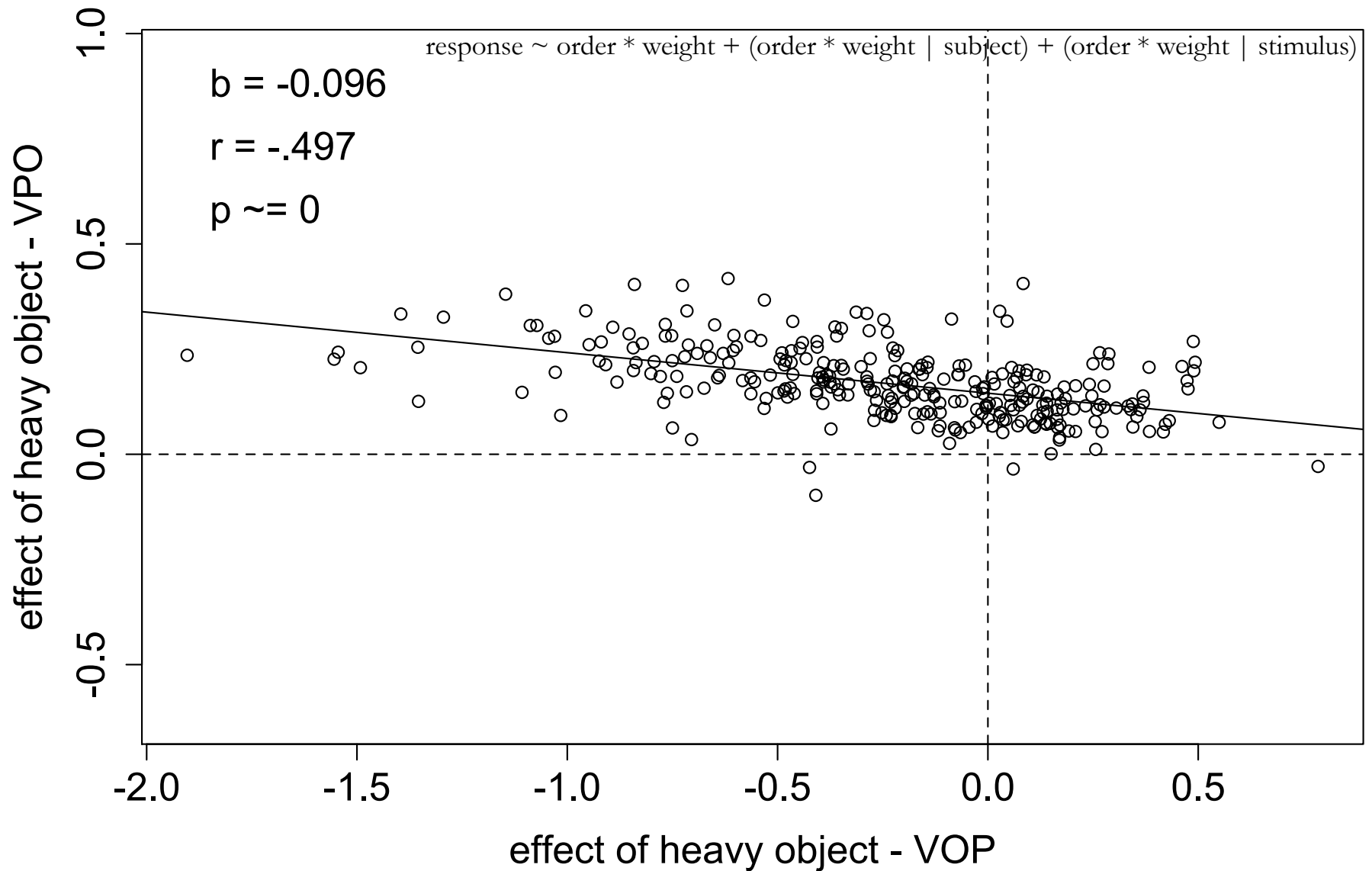
# the predictions

- ~100 years of research from...
  - corpora that must treat VOP/VPO as a choice
  - experiments that treat VOP/VPO as a choice
- a heavy object should...
  - make VOP order worse
  - have no effect on VPO order (make slightly worse?)
- a discourse-old object should...
  - make VOP order better
  - make VPO order worse (probably both?)

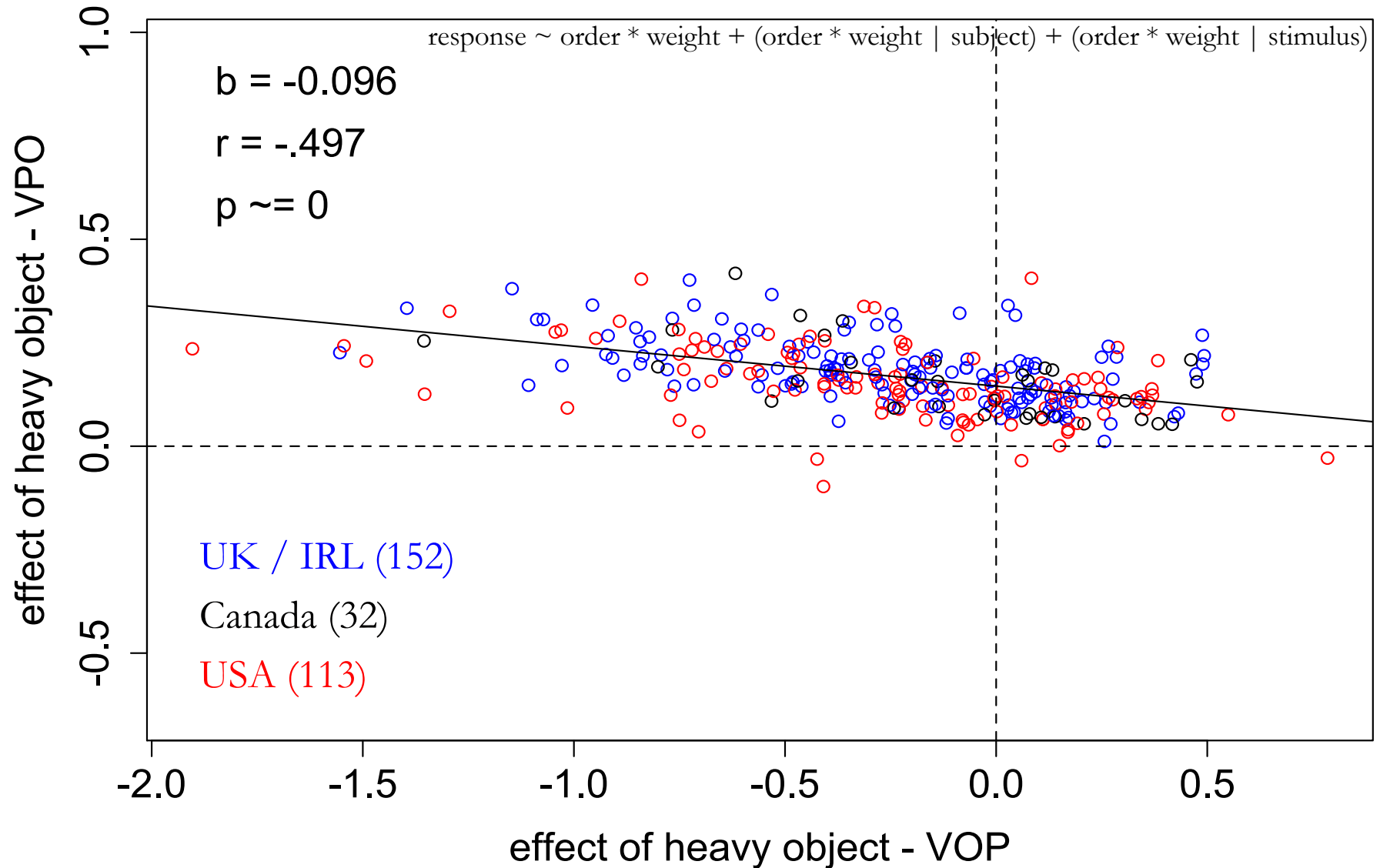
# experiment I: object weight



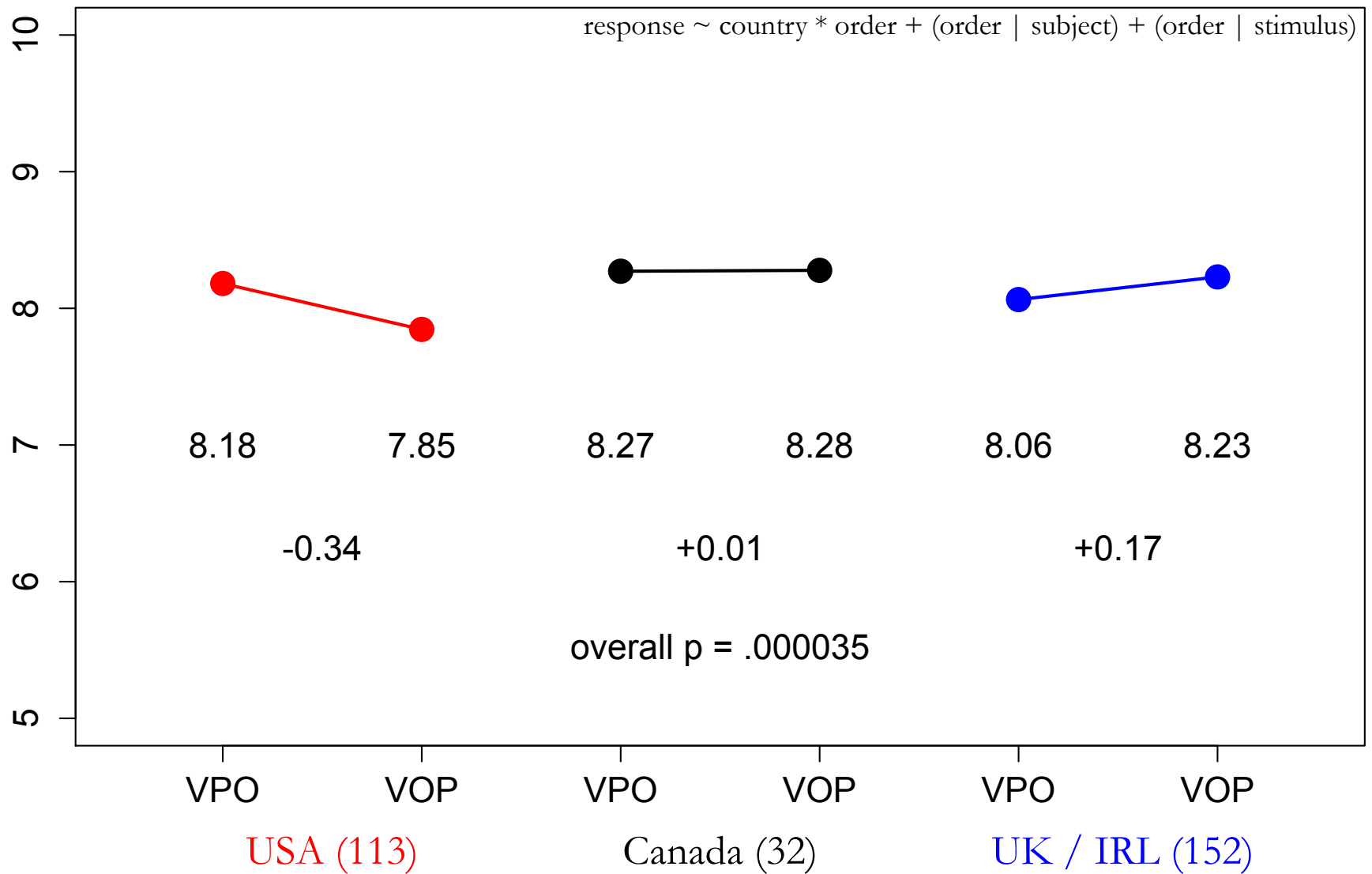
# experiment I: object weight



# experiment I: object weight

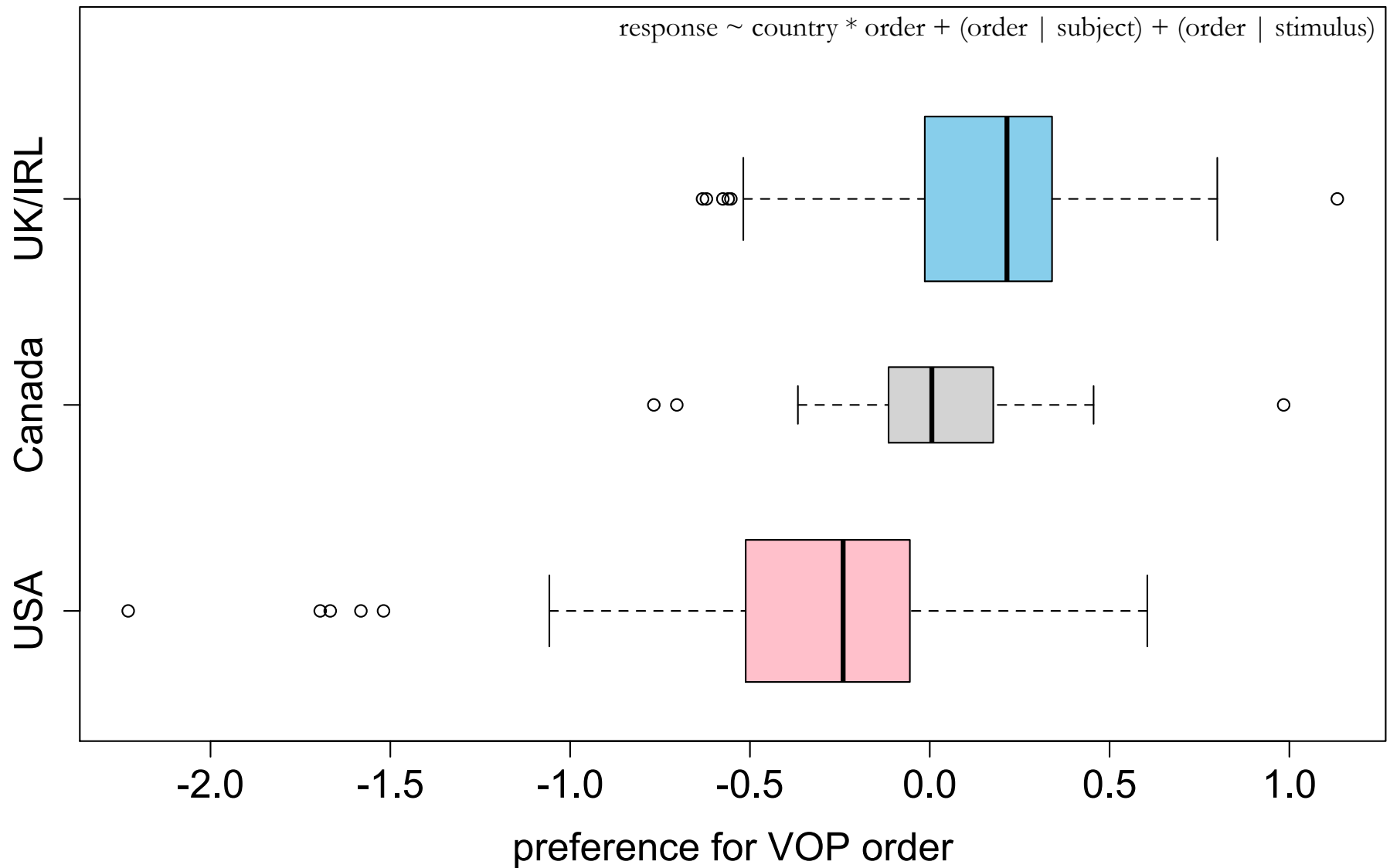


# experiment I: country

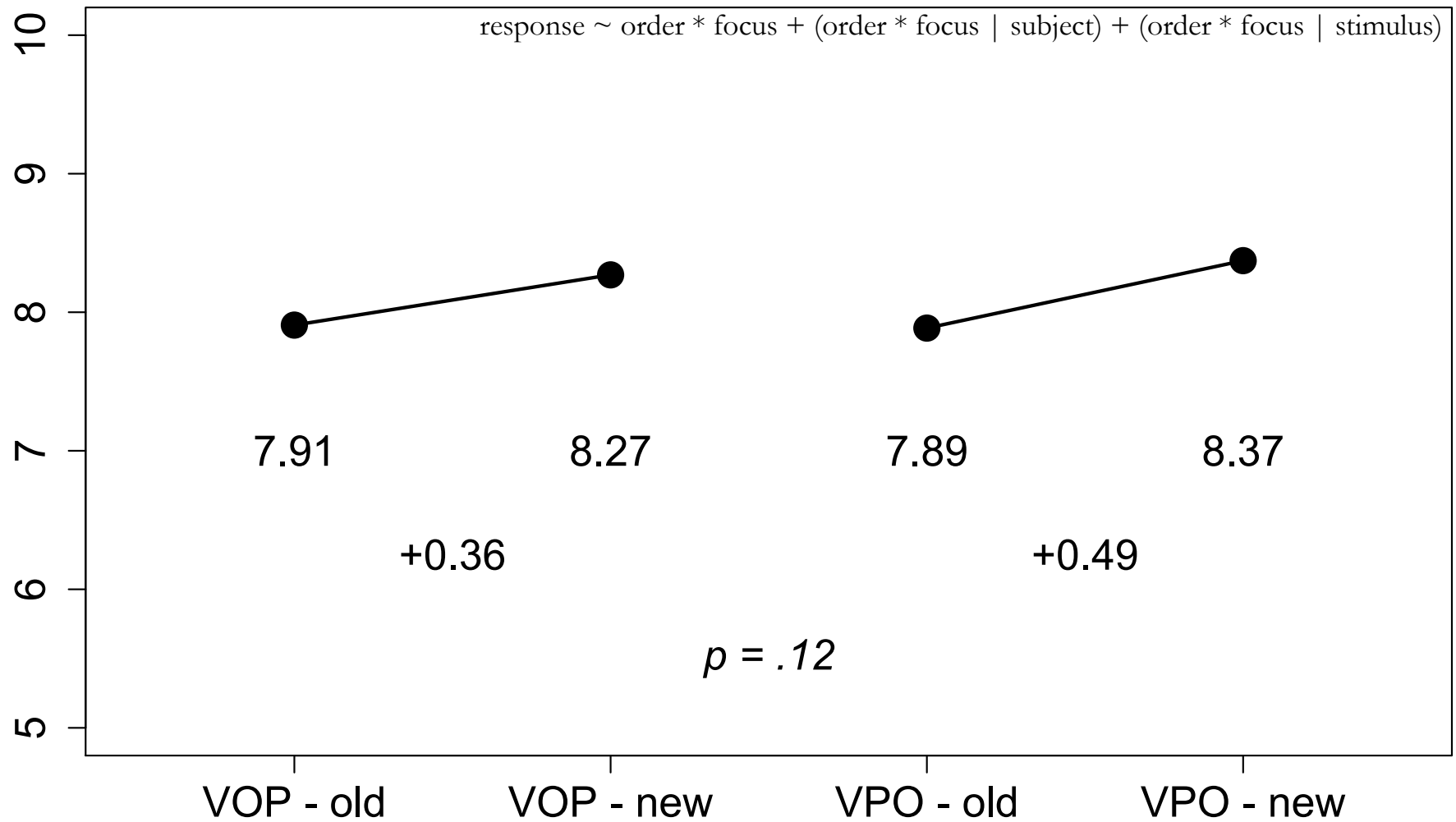




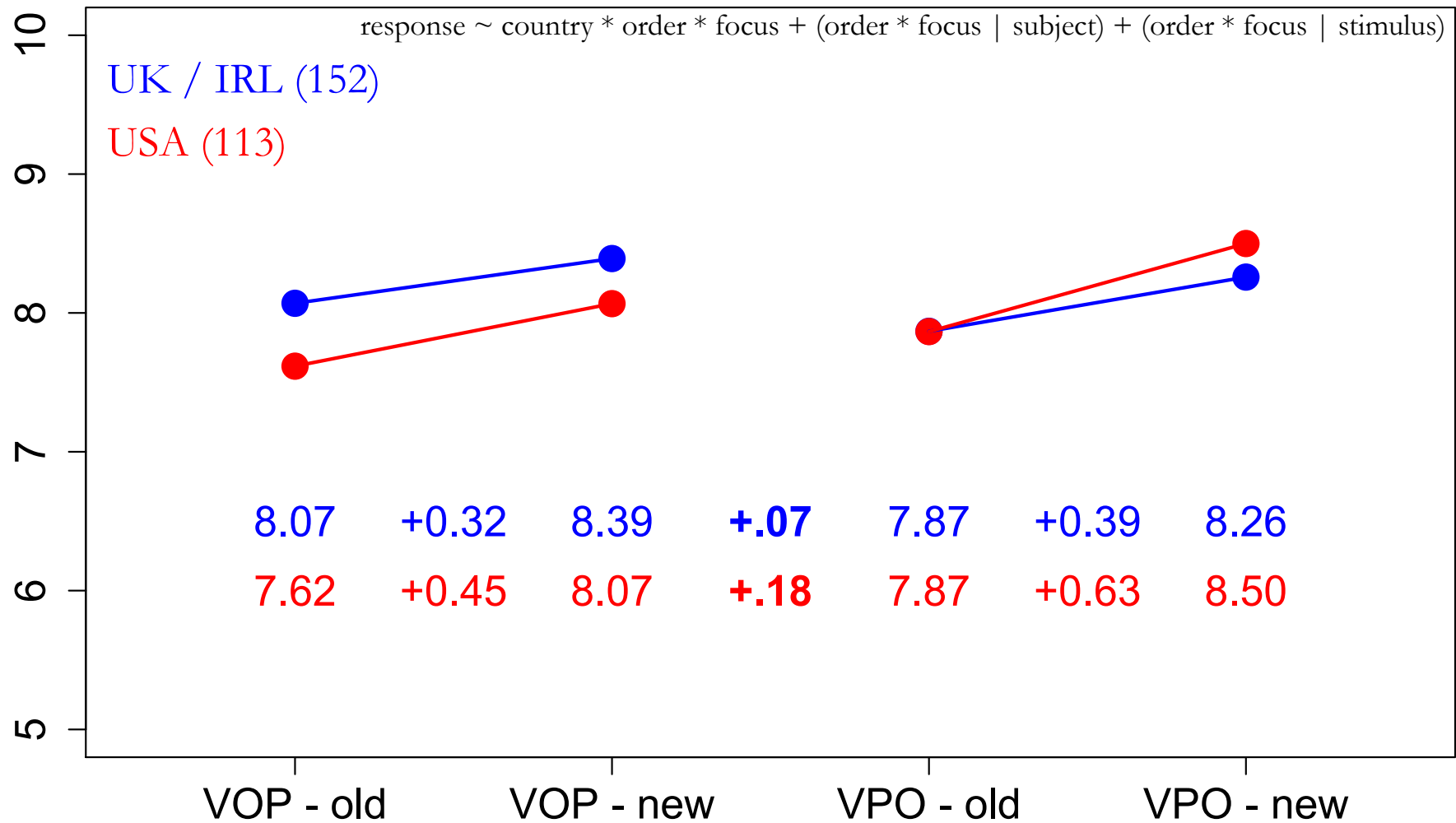
# experiment I: country



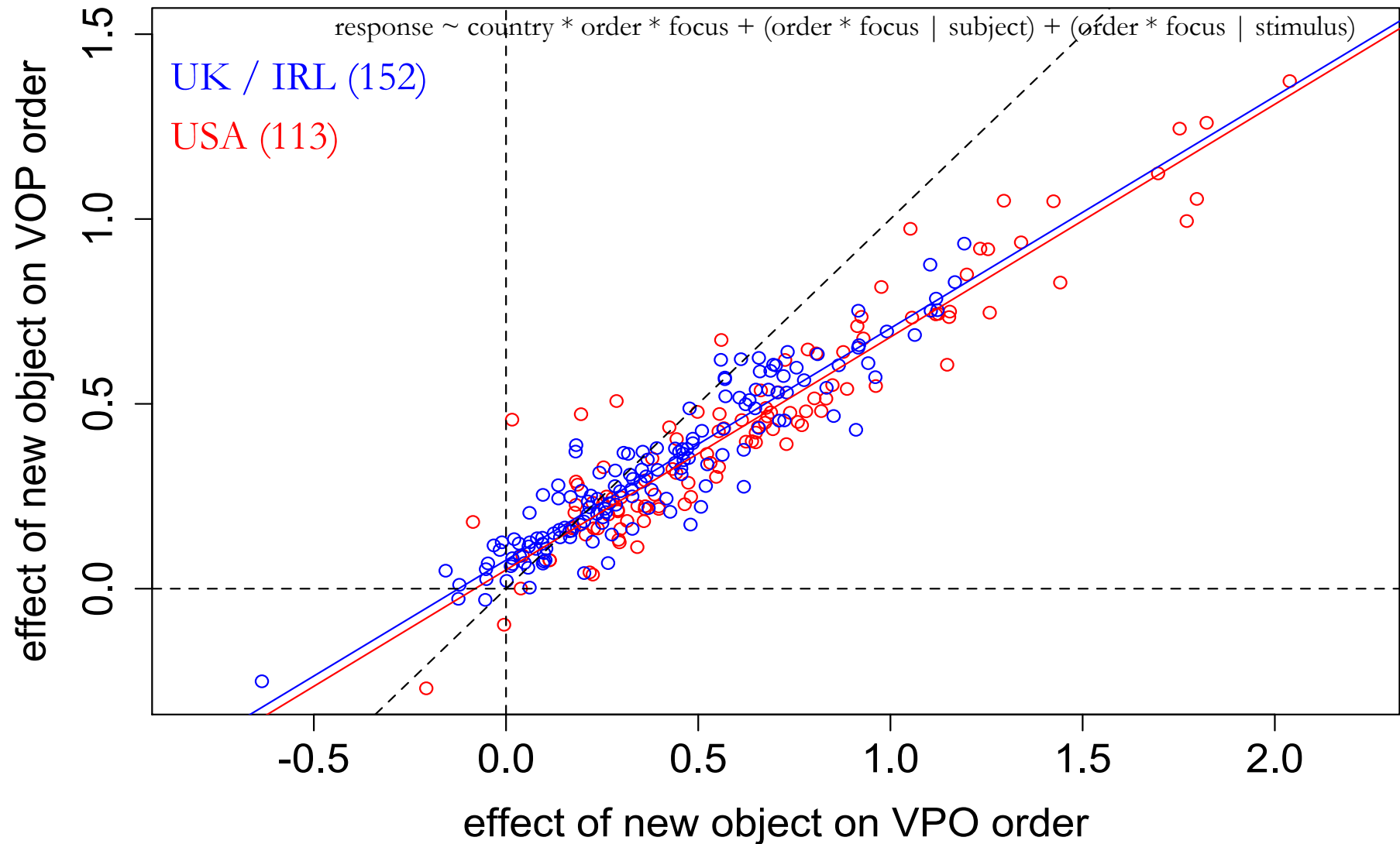
# experiment I: object newness



# experiment I: object newness



# experiment I: object newness



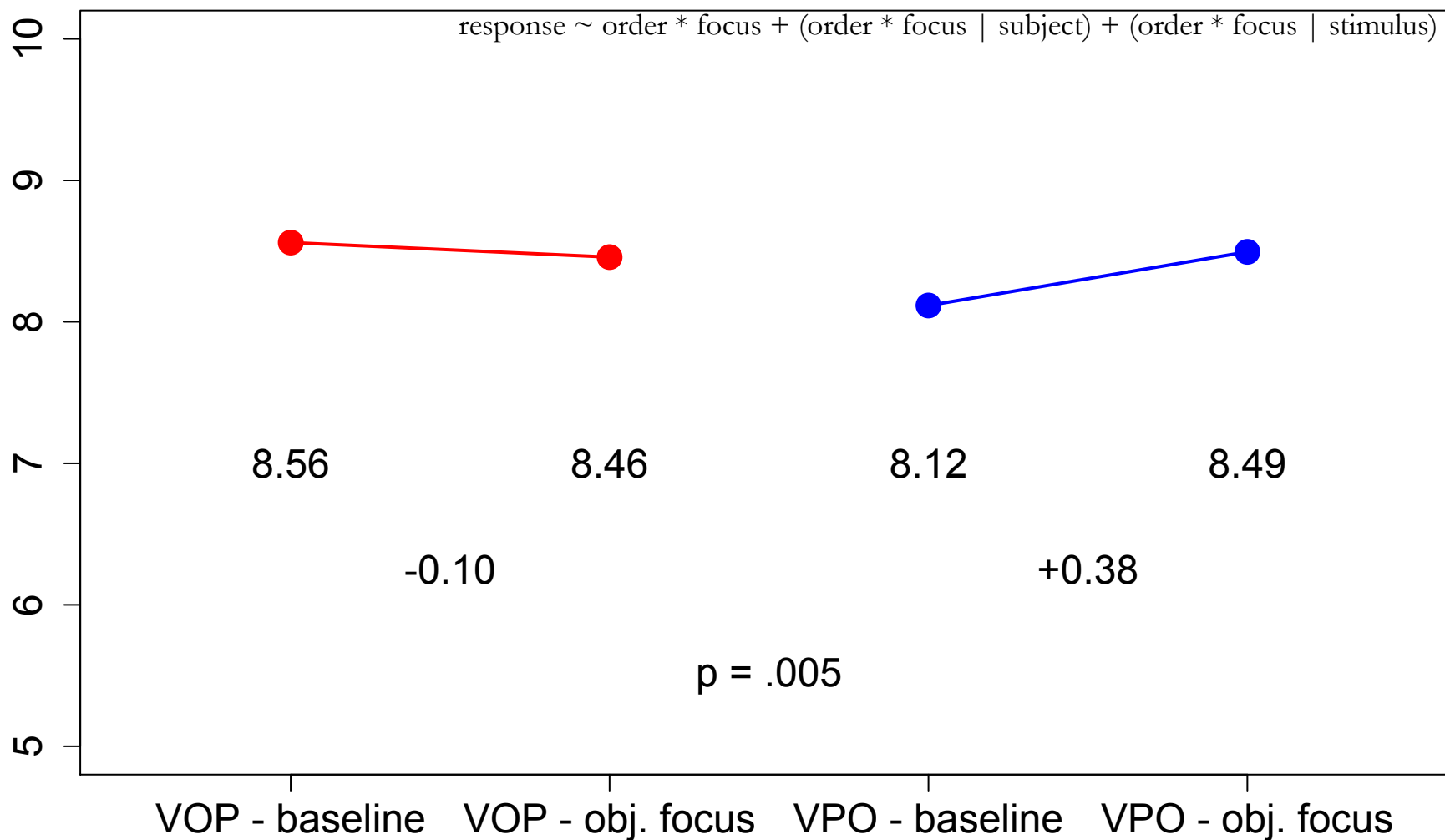
# experiment 2

- experiment 2: 125 subjects from USA
- object length is now fixed
- four topic/focus conditions via question prompt
  - Q1. What did the friends do? (VP focus)
  - Q2. What did the friends pass around? (object focus)
  - Q3. What happened? (wide focus)
  - Q4. What happened to the beer? (object topic)
  - A1-4. The friends passed the beer around.
- worked much better than the cataphoric pronoun
- again, able to observe VPO and VOP separately

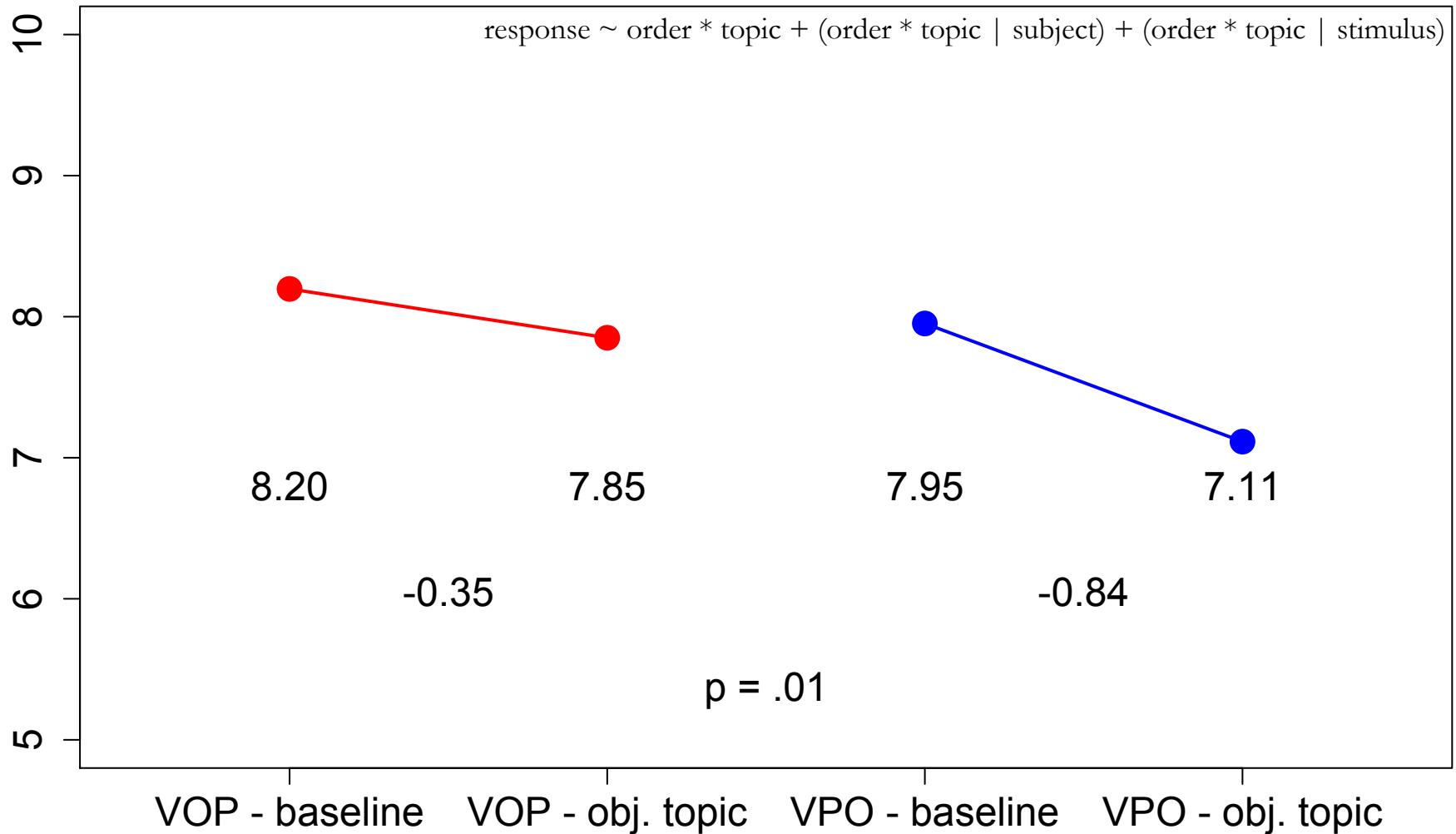
# experiment 2

- *What did the friends do?* (VP focus) is the baseline for *What did the friends pass around?* (object focus)
- *What happened?* (wide focus) is the baseline for *What happened to the beer?* (object topic)
- a focused object should...
  - make VPO order better
  - make VOP order worse (probably both)
- a topic object should...
  - make VOP order better
  - make VPO order worse (probably both)

# experiment 2: object focus effect



# experiment 2: object topic effect

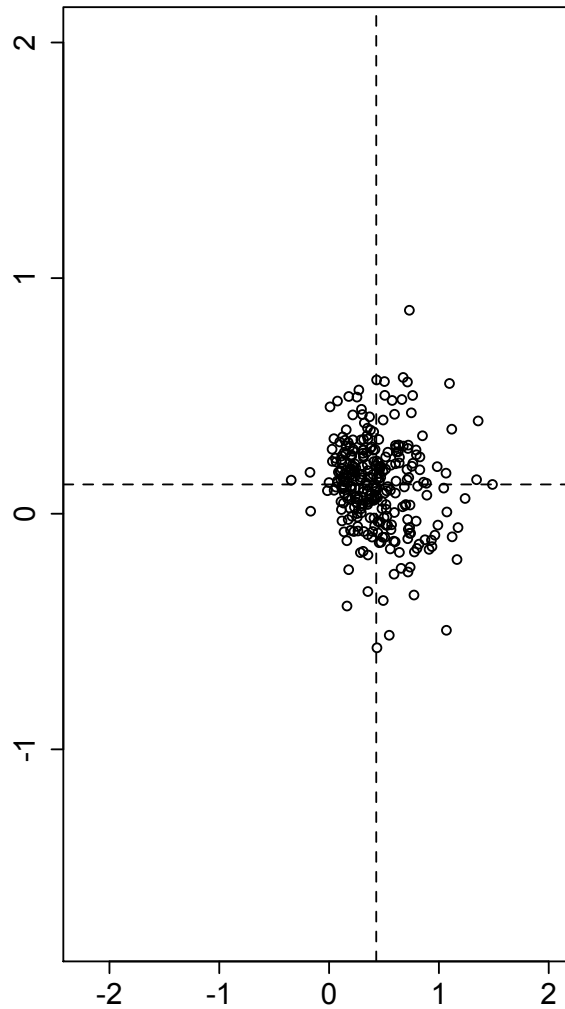




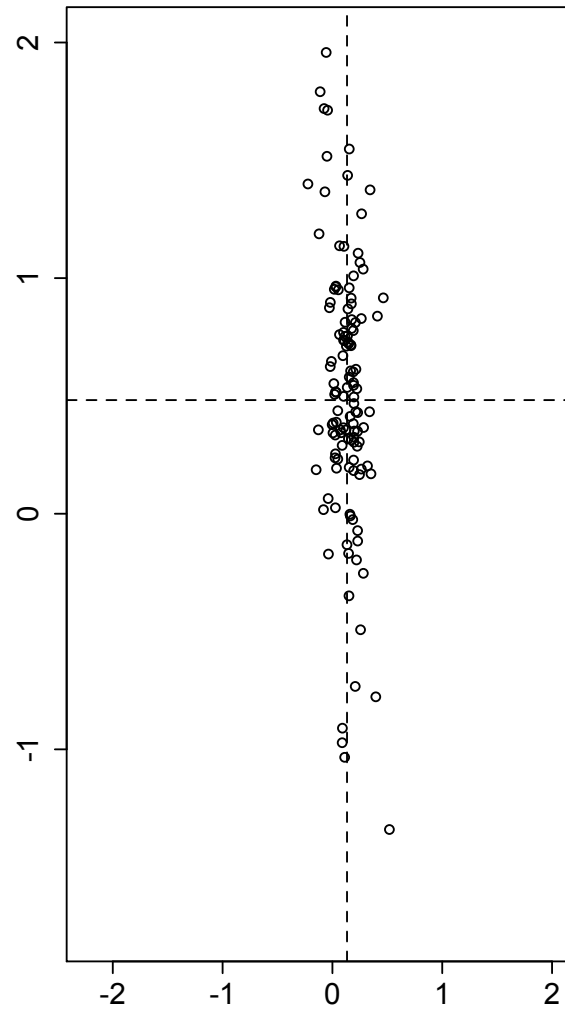
# experiments: effects on each order

	<u>VOP</u>	<u>VPO</u>
• exp. 1: obj. heavy vs. light	- 0.24	+0.17
• exp. 1: obj. new vs. old	+0.36	+0.49
• exp. 2: obj. focus vs. baseline	- 0.10	+0.38
• exp. 2: obj. topic vs. baseline	- 0.35	- 0.84
• all VOP-VPO interactions in correct order but...		

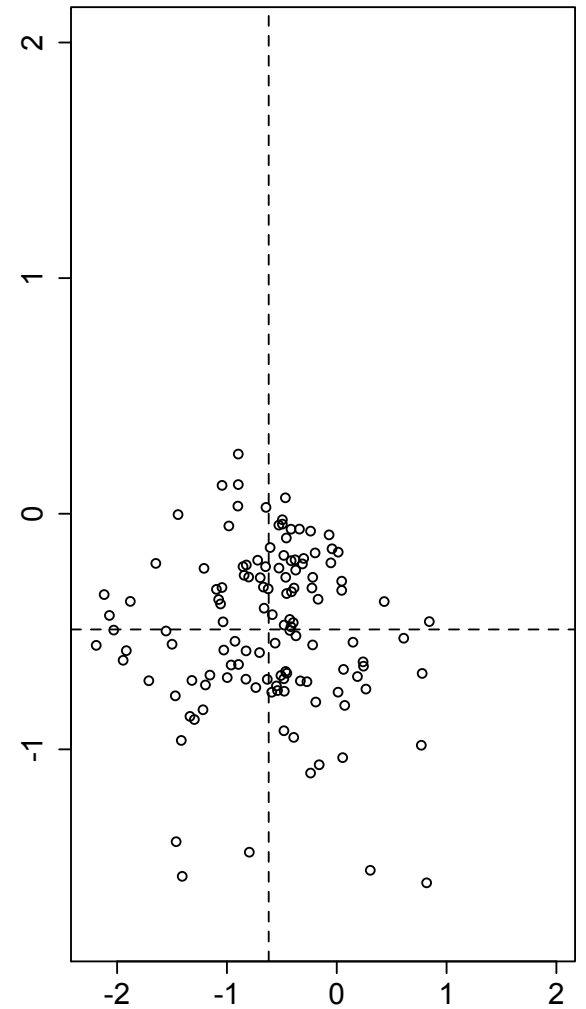
# exp's: interactions v. main effects



new vs. old object



obj. focus vs. baseline



obj. topic vs. baseline

# experiments: conclusions

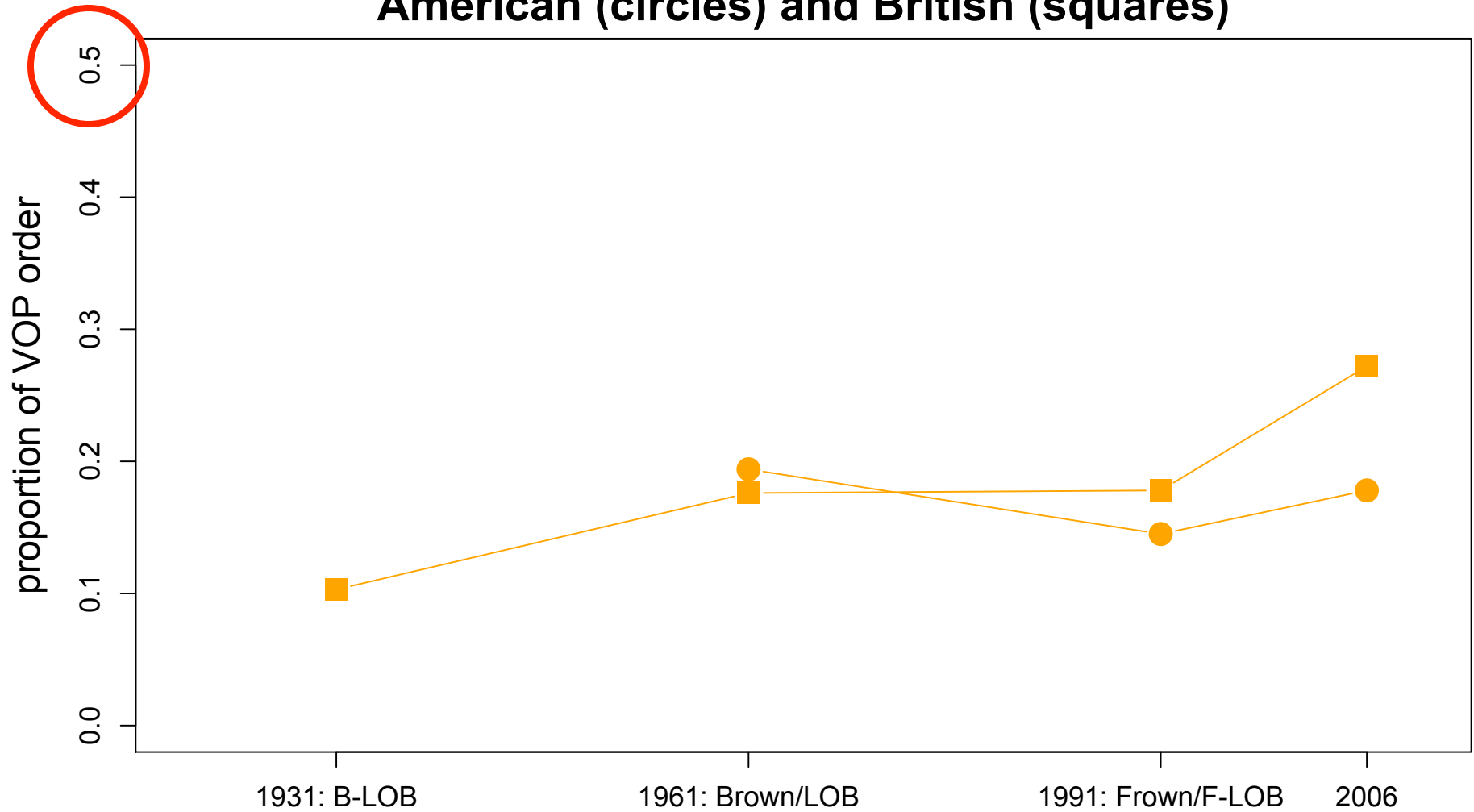
- prosodic and information-structural effects on word order variation can be elicited experimentally
- measuring acceptability on 11-point Likert scale, gave better results than attempts at normalization
- subjects vary along every dimension you measure
- subject random effects are very valuable data
- two ‘alternants’ can be linked or ‘yoked’ together
- object weight and information status may interact
- obj weight affected VOP more, VPO more regularly
- obj information structure affected VPO order more

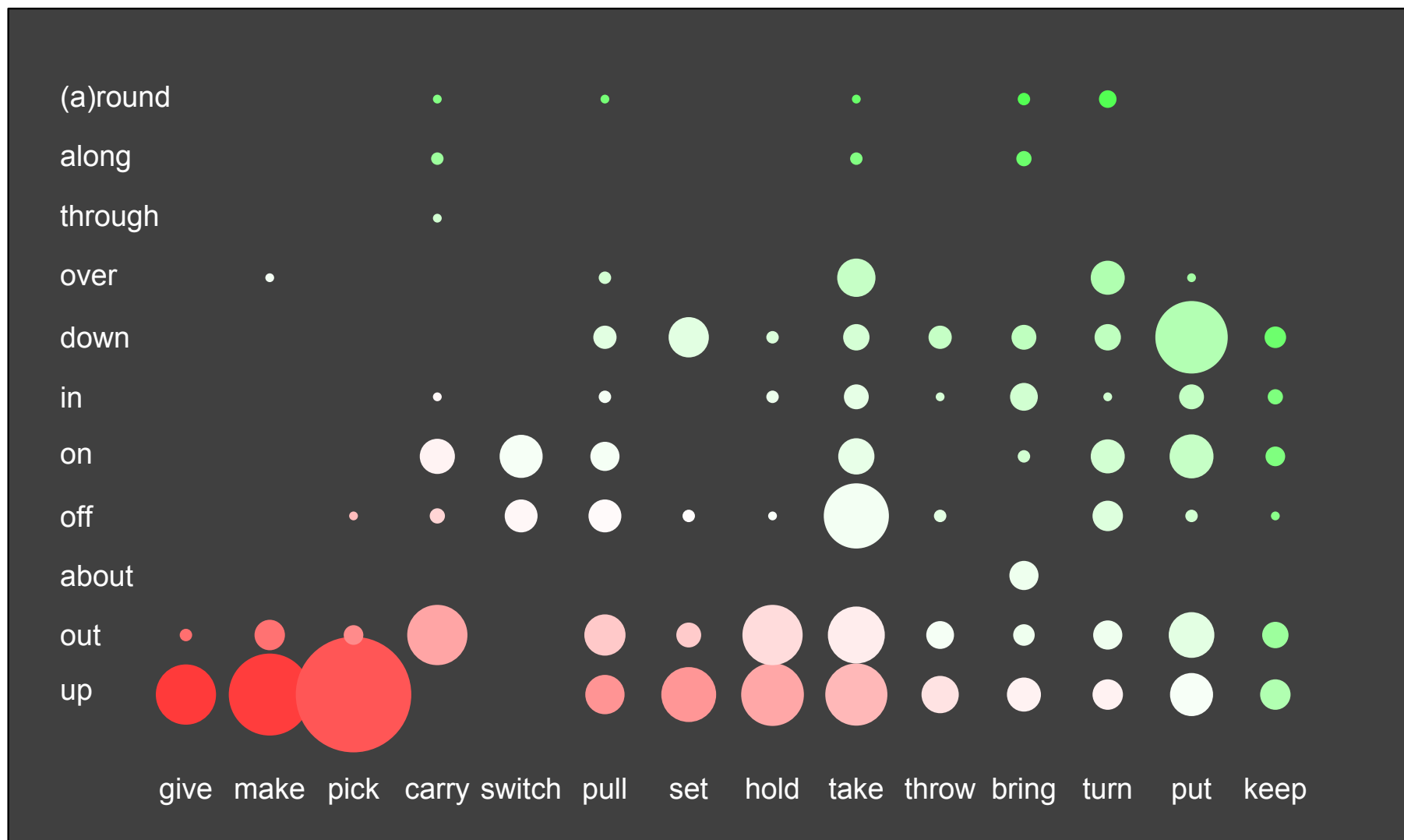
# Brown Corpus Family

- 7 corpora: USA '61, '91, '06, UK '31, '61, '91, '06
- 2557 tokens (unparsed corpus paradox)
- controlled for object length:  $D + N$
- did not control for information structure
- looking at changes by country and over time
- looking at “lexical effects”
  - not necessarily lexically idiosyncratic effects
  - did not (yet) control for transparency, frequency, etc.

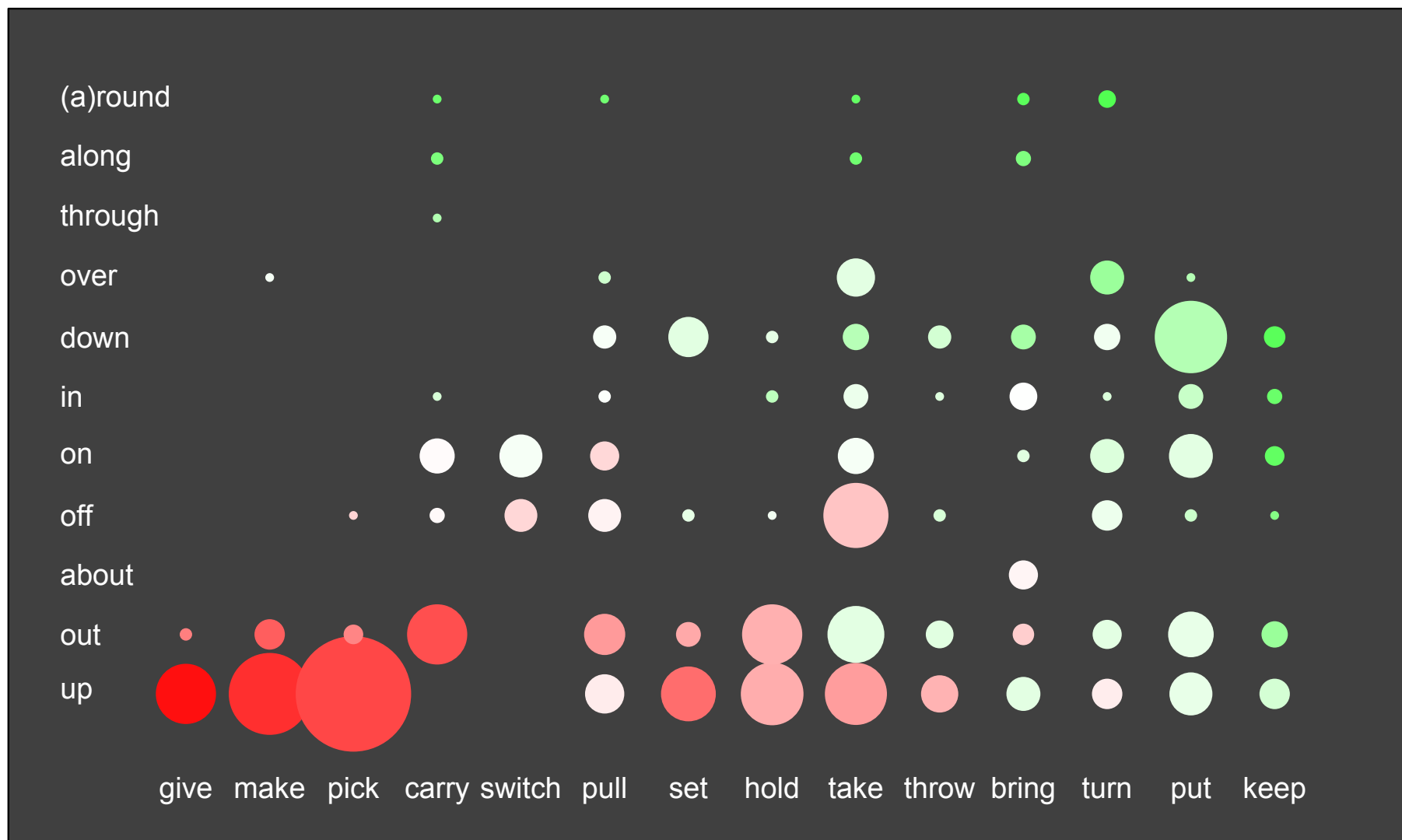
# Brown Corpus Family

American (circles) and British (squares)

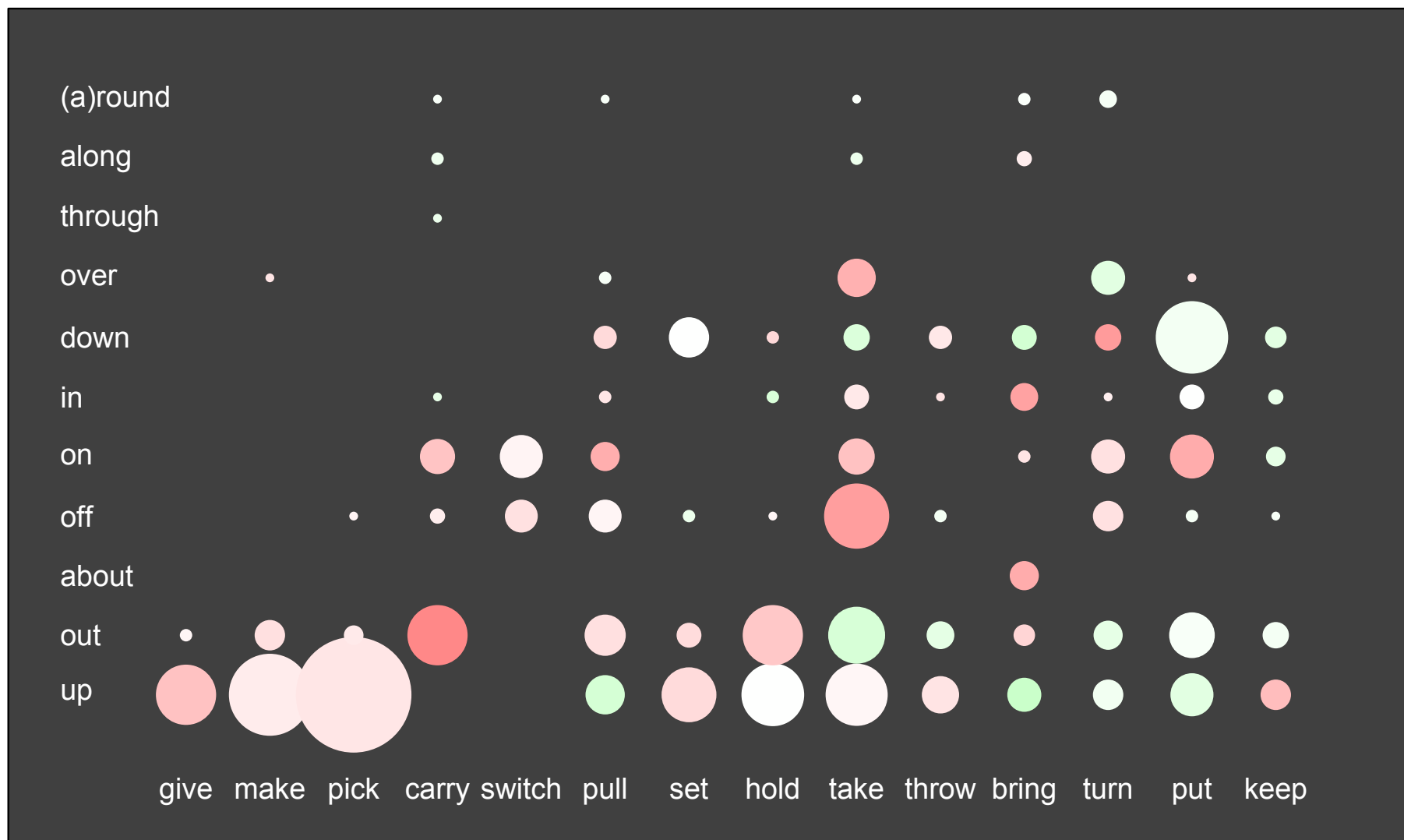




**Brown Corpus Family (N = 2557)**  
 object = D + N, VP transparency not controlled

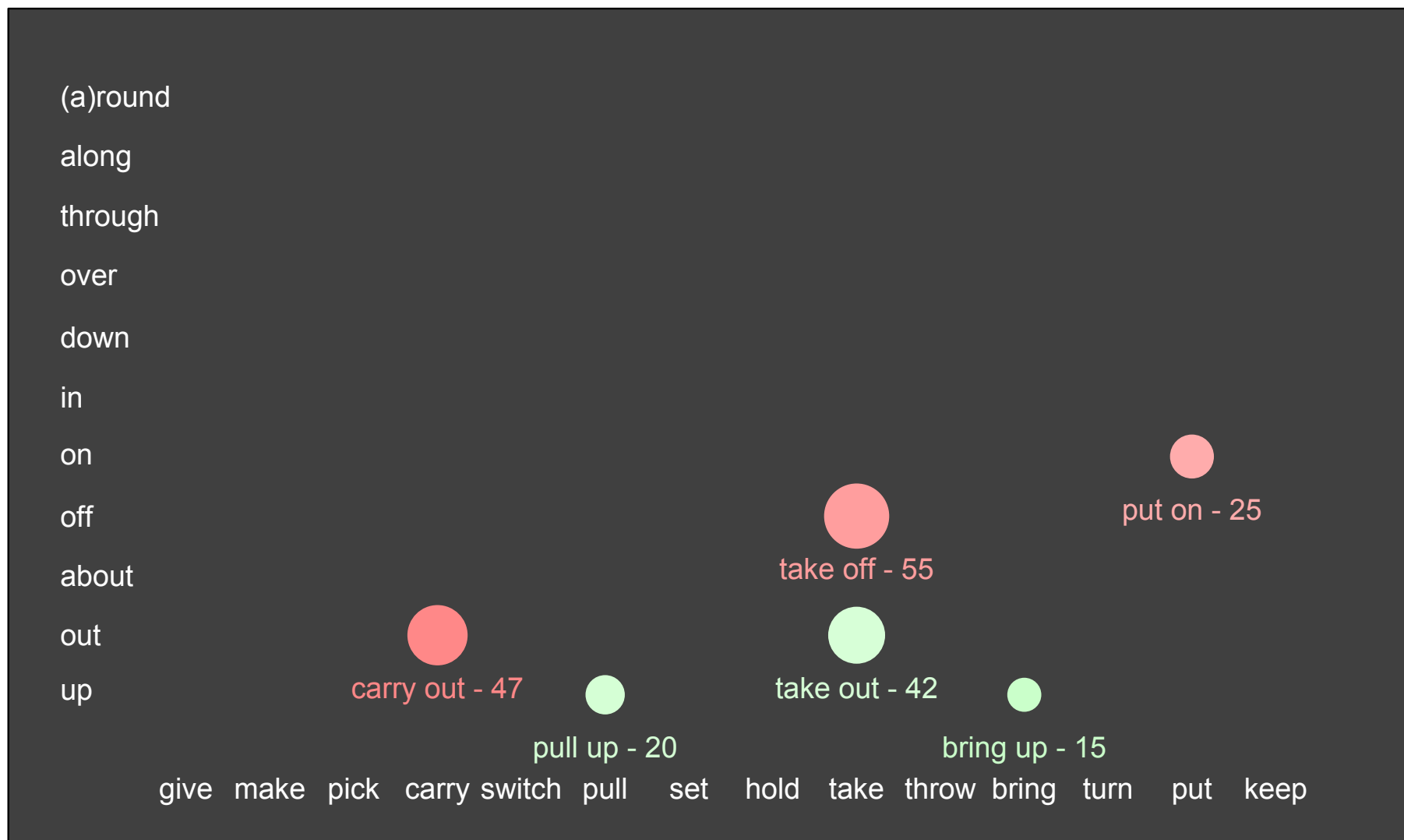


**Brown Corpus Family (N = 2557)**  
 object = D + N, VP transparency not controlled



**Brown Corpus Family (N = 2557)**  
 object = D + N, VP transparency not controlled



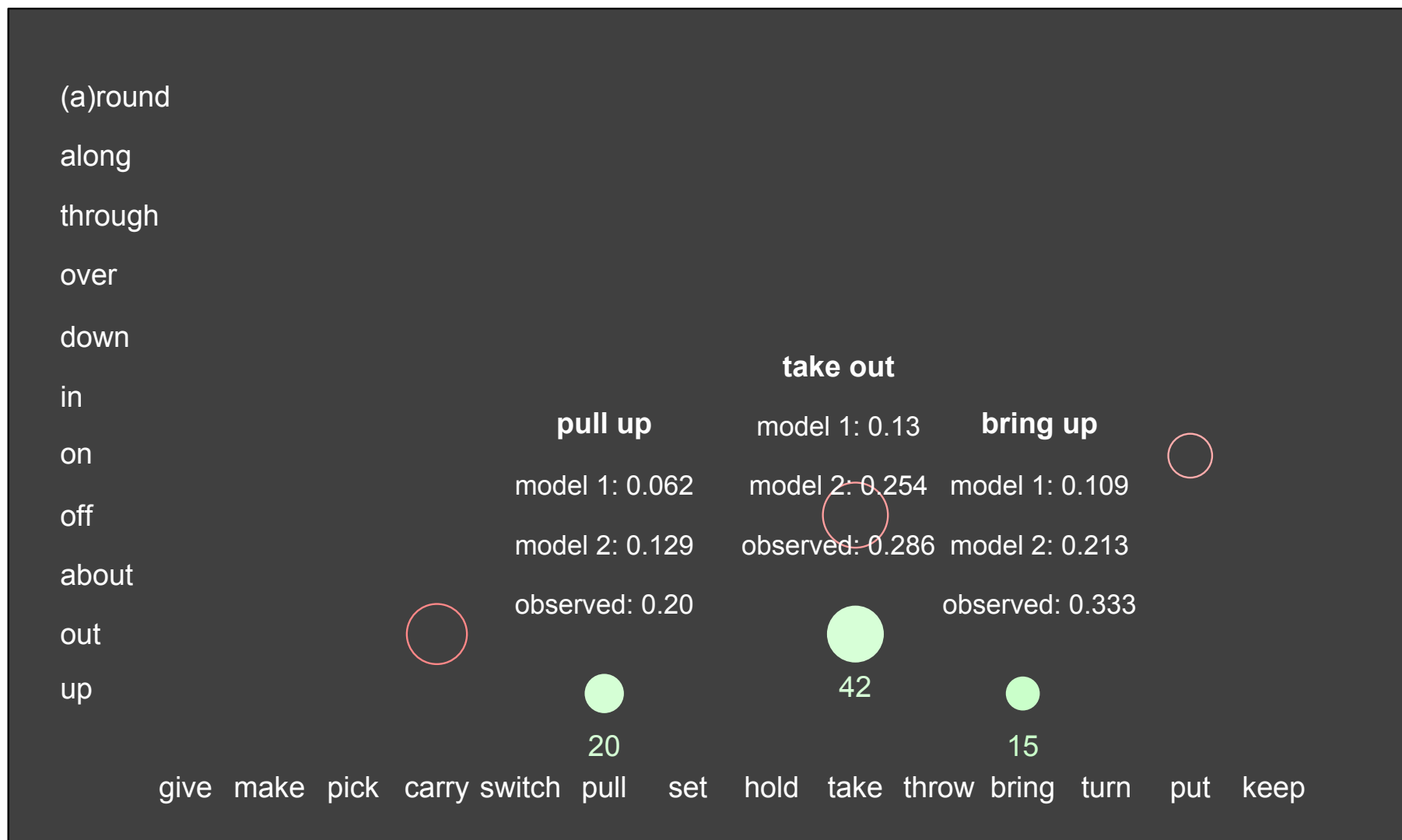


## Brown Corpus Family (N = 2557)

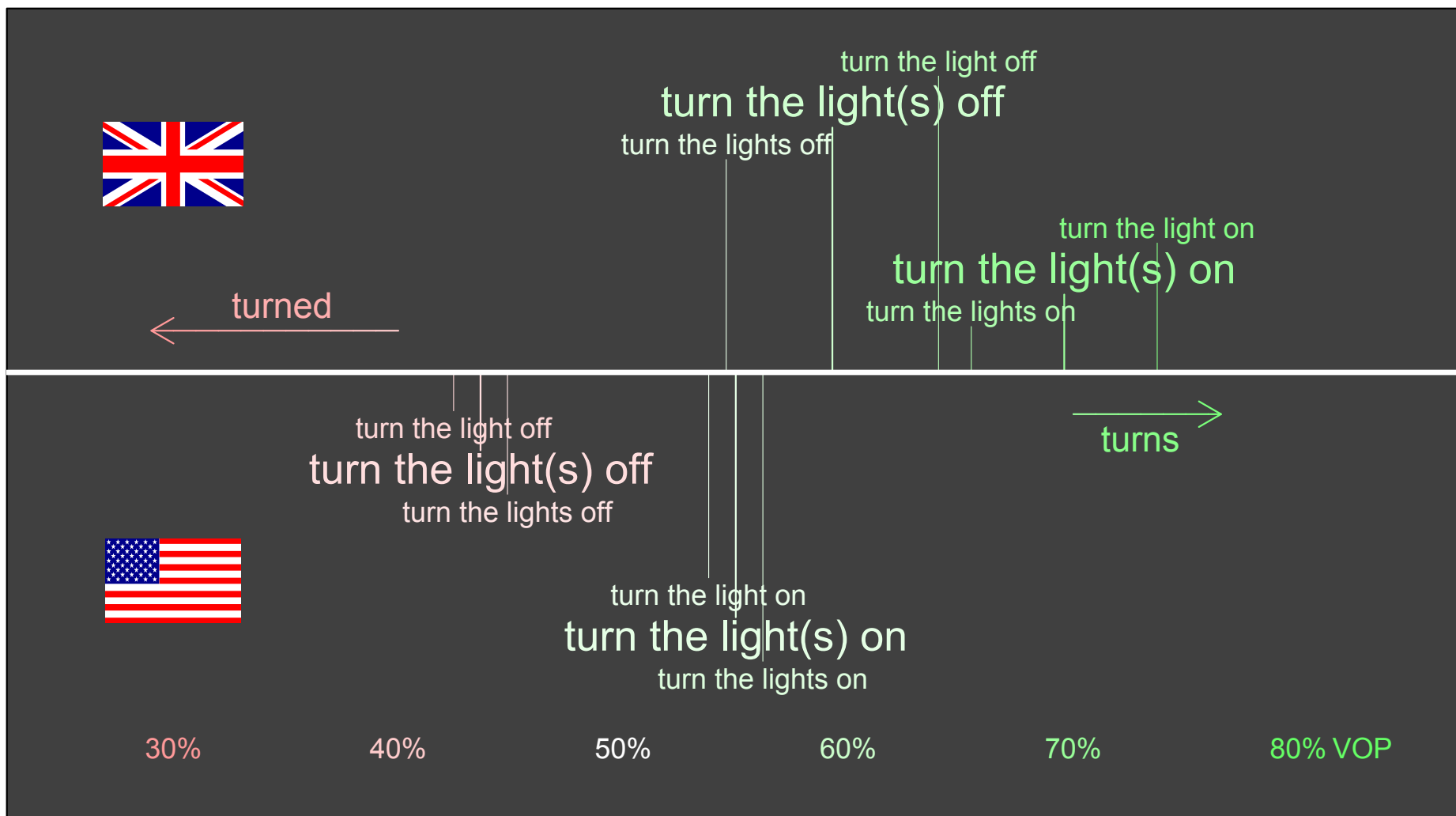
object = D + N, VP transparency not controlled



**Brown Corpus Family (N = 2557)**  
 object = D + N, VP transparency not controlled



**Brown Corpus Family (N = 2557)**  
 object = D + N, VP transparency not controlled



## Twitter Corpus (N = 2001)

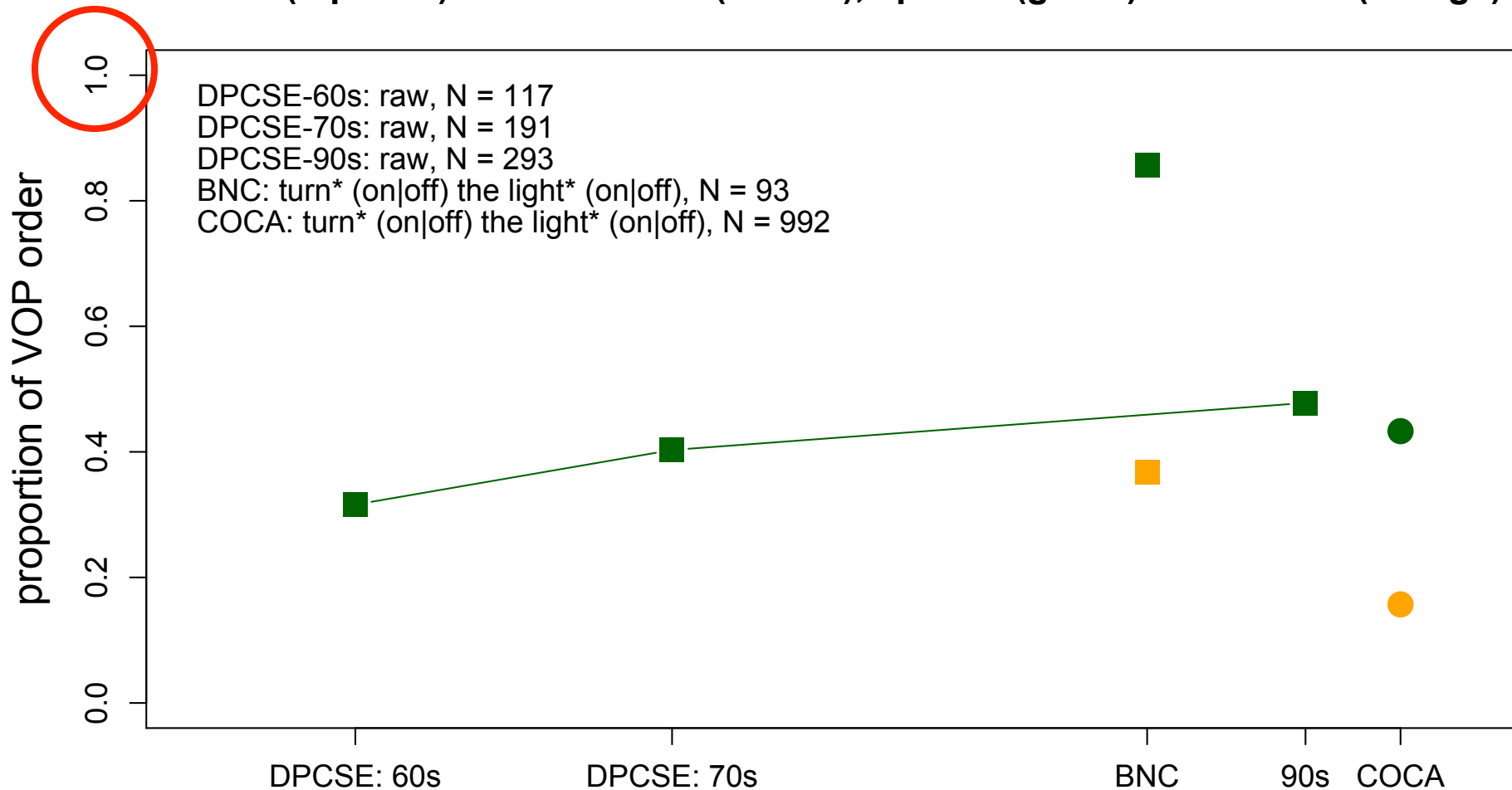
V, P, and O are basically held constant

US/UK, off/on, lights/light (UK), turned/turn/turns

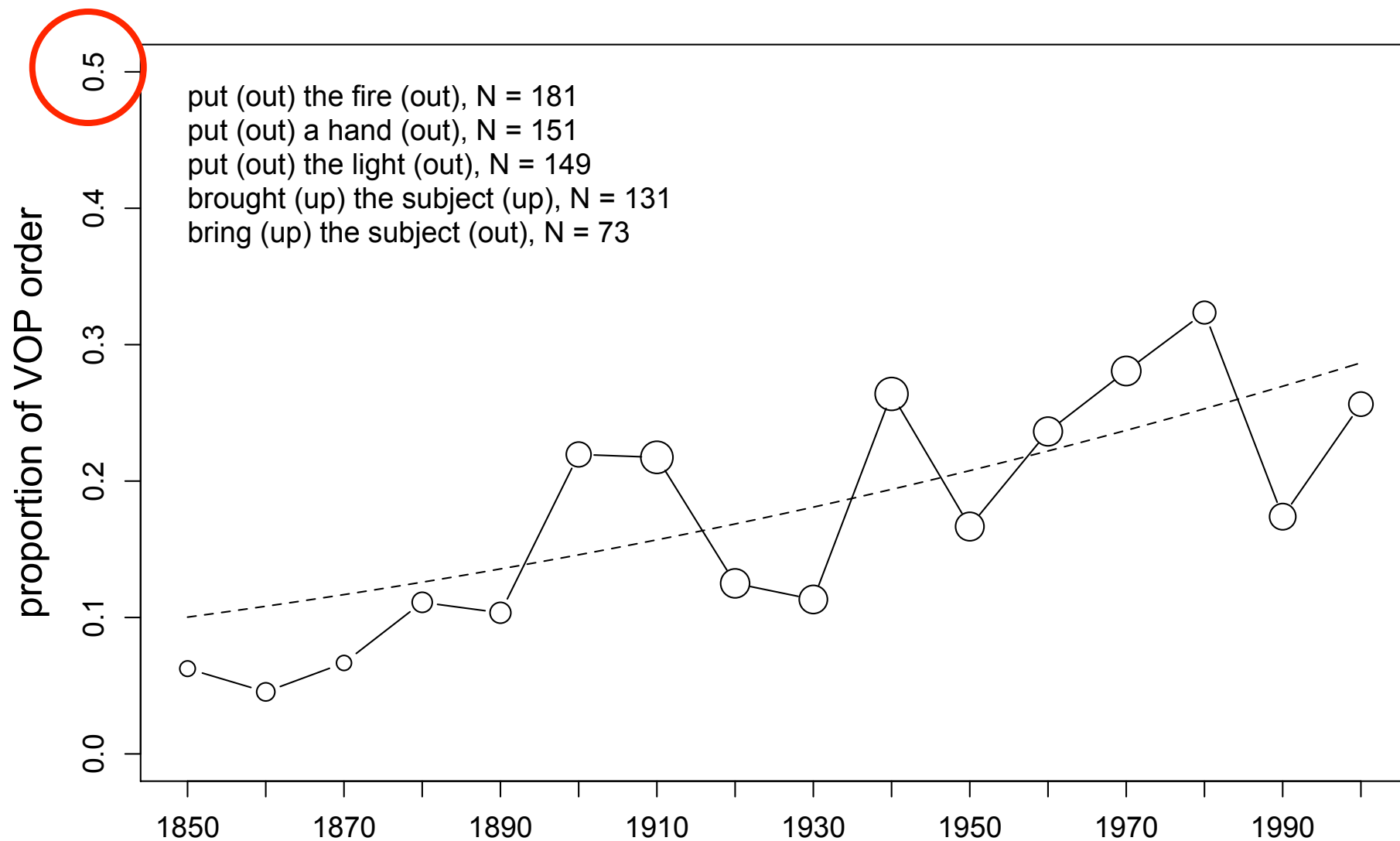
are some just proxies for discourse/contextual effects?

# Other 20<sup>th</sup> century corpora

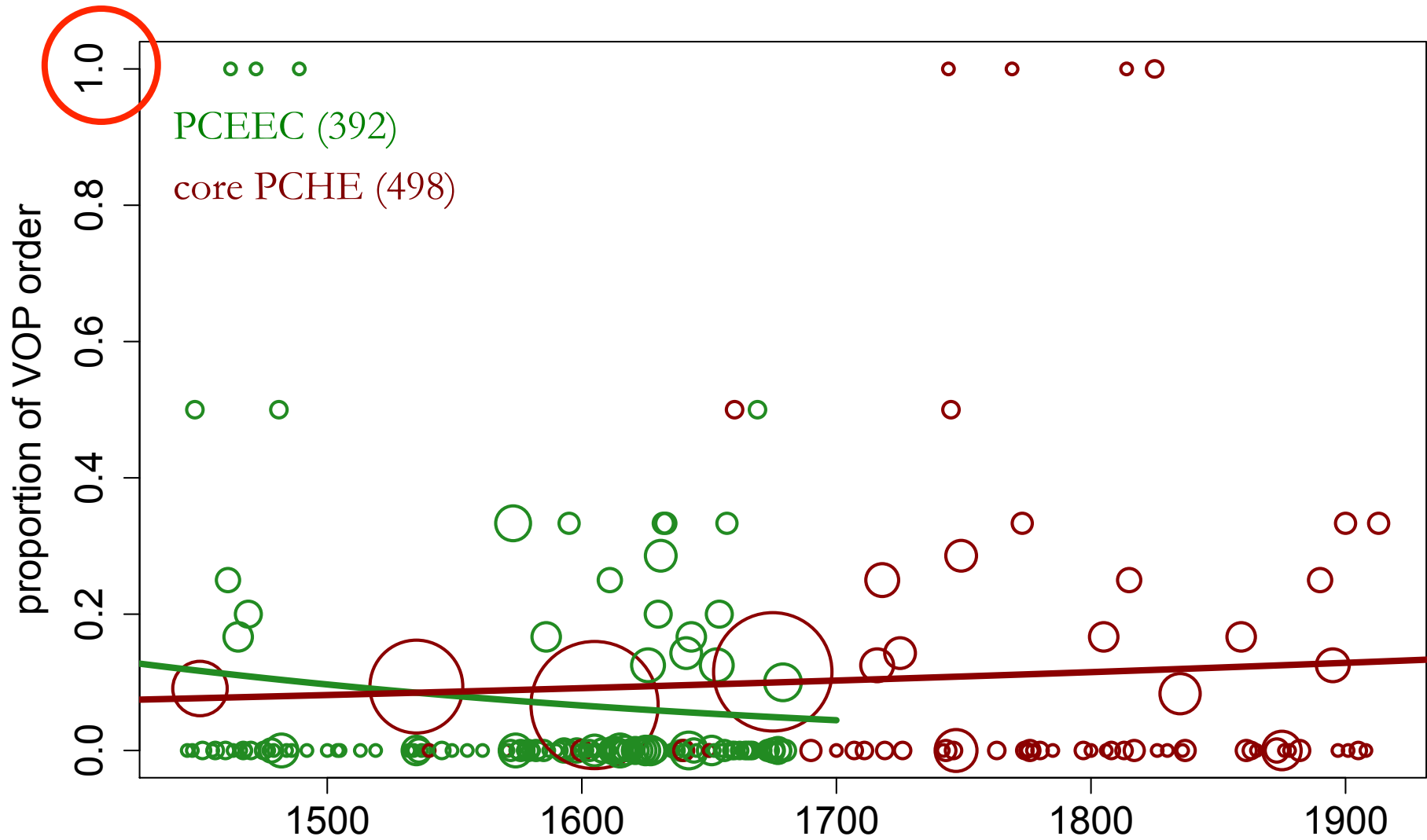
British (squares) and American (circles), spoken (green) and written (orange)



# Corpus of Historical American English



# Penn Corpora of Historical English



# conclusions / confusions

- weight and information structure effects
  - traditionally apply to a choice between forms
- object weight effect
  - by applying to VPO as well as VOP, fit this concept
- information-structure effects
  - by applying to VPO more than VOP, question it
- diachronic change
  - suggests parametric variation (grammar competition)
- lexical effects
  - suggest no simple functional parametric variation



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