Priming as a diagnostic of grammatical status: Two case studies

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Introduction

- Diachronic generative syntax encompasses the analysis both of historical grammatical structures and of the processes by which they change
- Analysis of underlying structures is particularly challenging without access to native speakers

Introduction

- Researchers have made headway by using the Constant Rate Effect (Kroch 1989) to infer grammatical analyses through quantitative data on historical change
- We will propose an independent source of quantitative evidence about historical grammatical analyses: clustering tendencies across tokens

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Priming

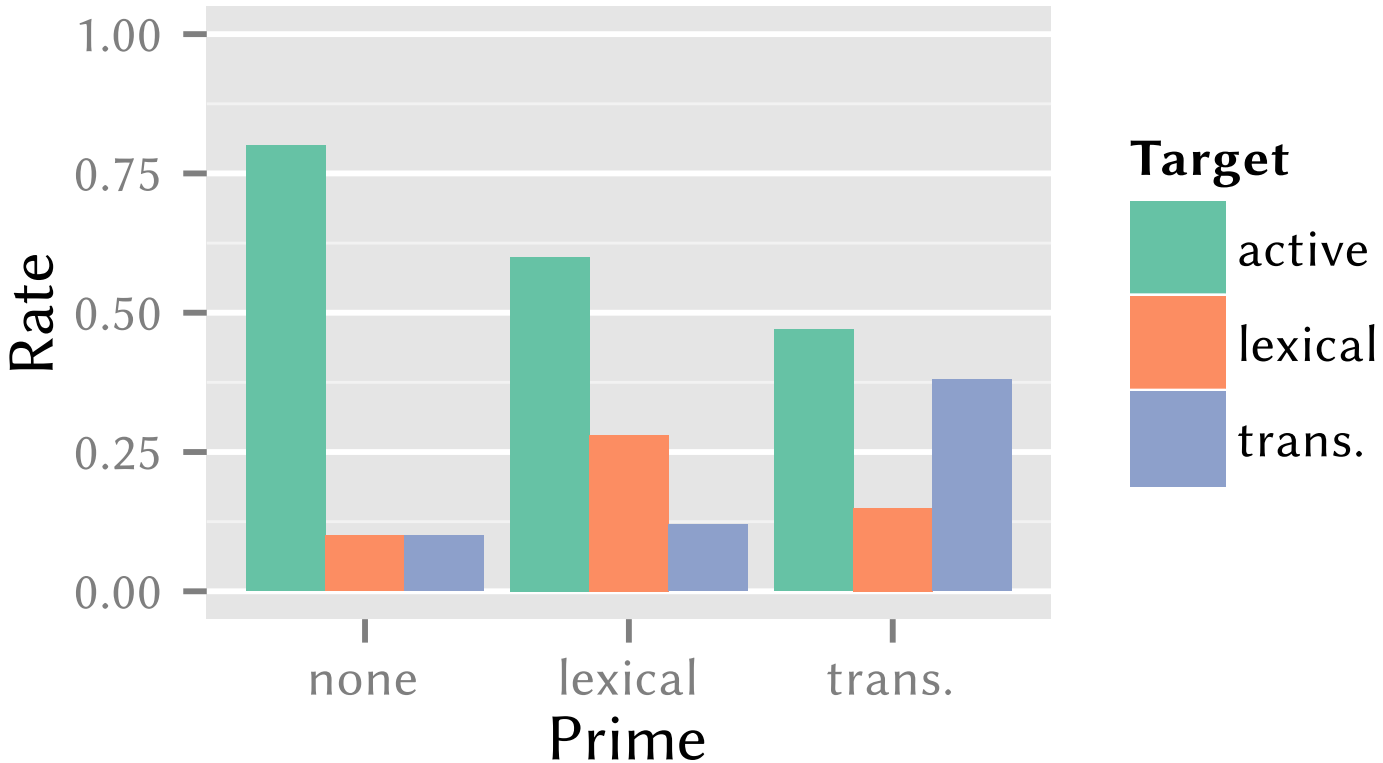
- **Priming:** the tendency to reuse a recently encountered linguistic option
- Extensive structural priming literature (beginning with Bock 1986) demonstrates that syntactic structures can be primed
- Example:
  - **Prime:** I gave the children candy

  ⇑ I gave the dog treats

  ⇓ I gave treats to the dog

Priming reflects structural identity

- Estival (1985): different types of passives (lexical vs. transformational) each prime themselves but not each other
- The structural distinction this reflects is maintained in modern syntactic accounts (e.g. Embick 2004)



Priming reflects structural identity

- Bock and Loebell (1990): Infinitival purpose clauses with "to" do not prime prepositional datives with "to"
  - I brought a book to study
  - I brought a book to Stella
- Ferreira (2003): complementizer *that* presence is not increased by previous use of demonstrative *that*

Priming reflects structural identity

- Priming can be a useful dependent variable for its reflection of underlying structures: repetition reveals sameness
- "If the processing of a stimulus affects the processing of another stimulus, then the two stimuli must be related [...] if the relationship between the two stimuli is syntactic, then we can use this relationship as a way of understanding what syntactic information is represented" (Branigan et al. 1995, p. 490)
- Linking hypothesis: priming effects in written historical data reflect structural identity in language production at the time

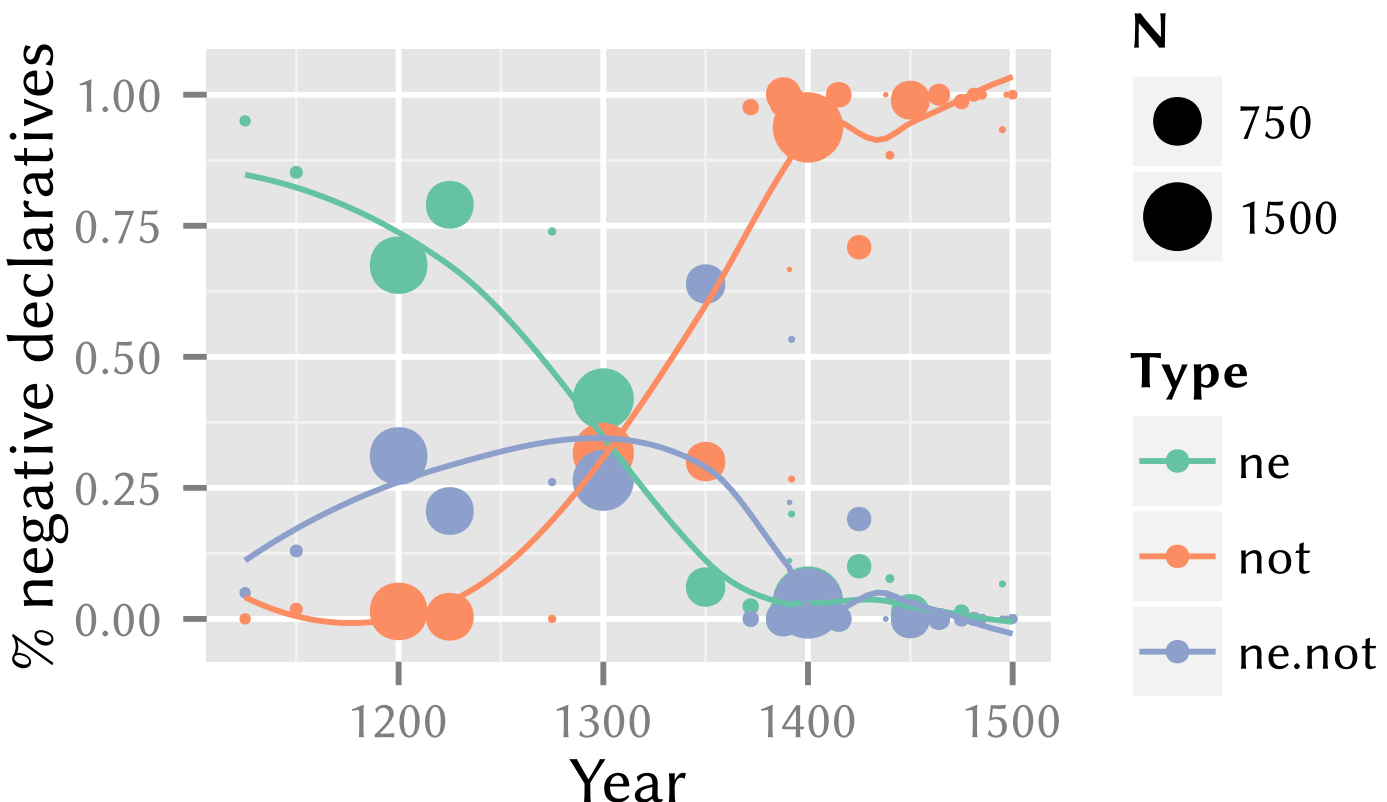
The change in negation

- In Middle English, there is a change in the exponence of Neg
- The negator *ne*, inherited from OE, is lost
- *not*, formerly a negative adverb, becomes the new negator

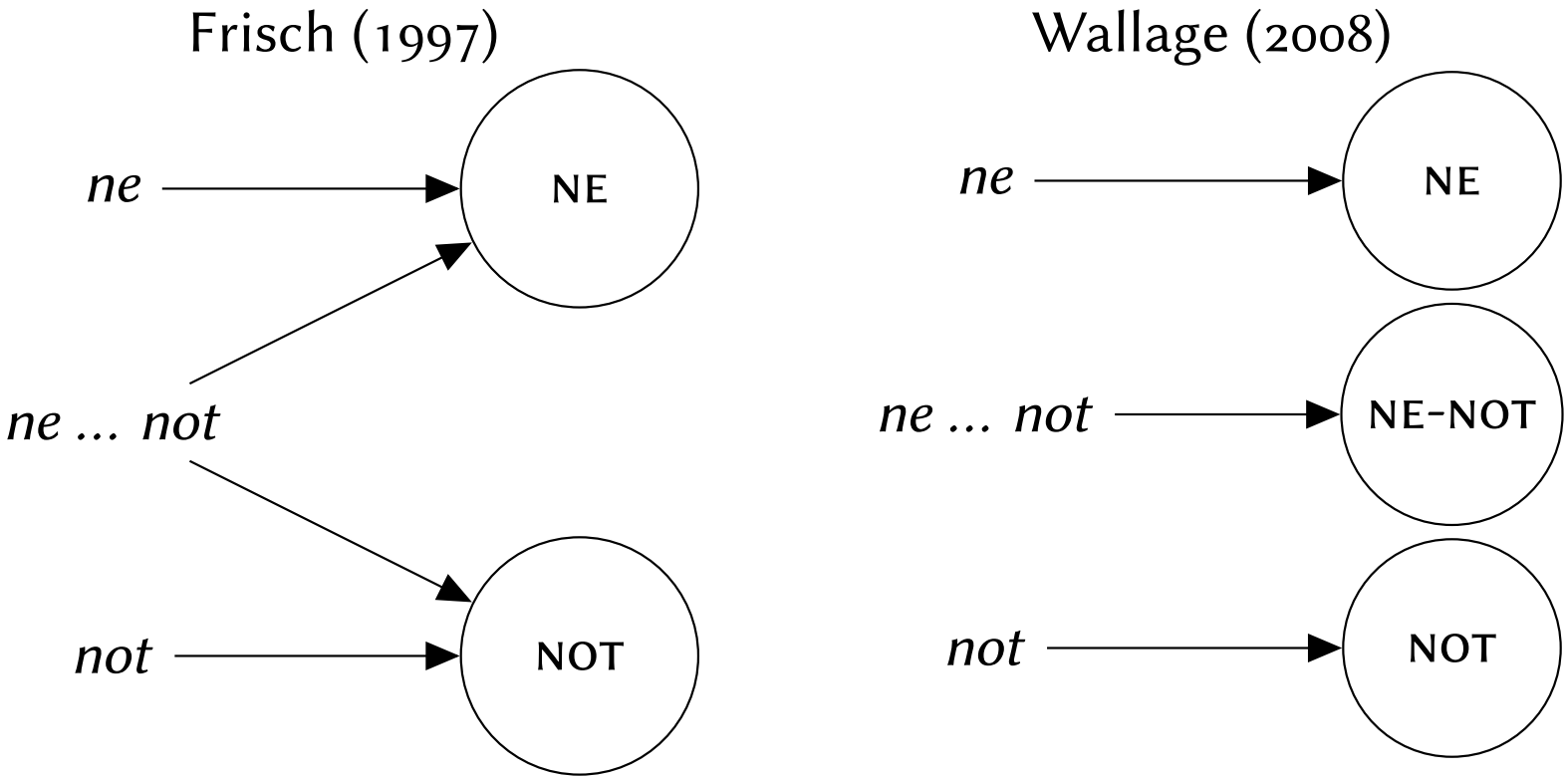
Details of the change

- During the period of the change, a large number of negative sentences have both *ne* and *not*:

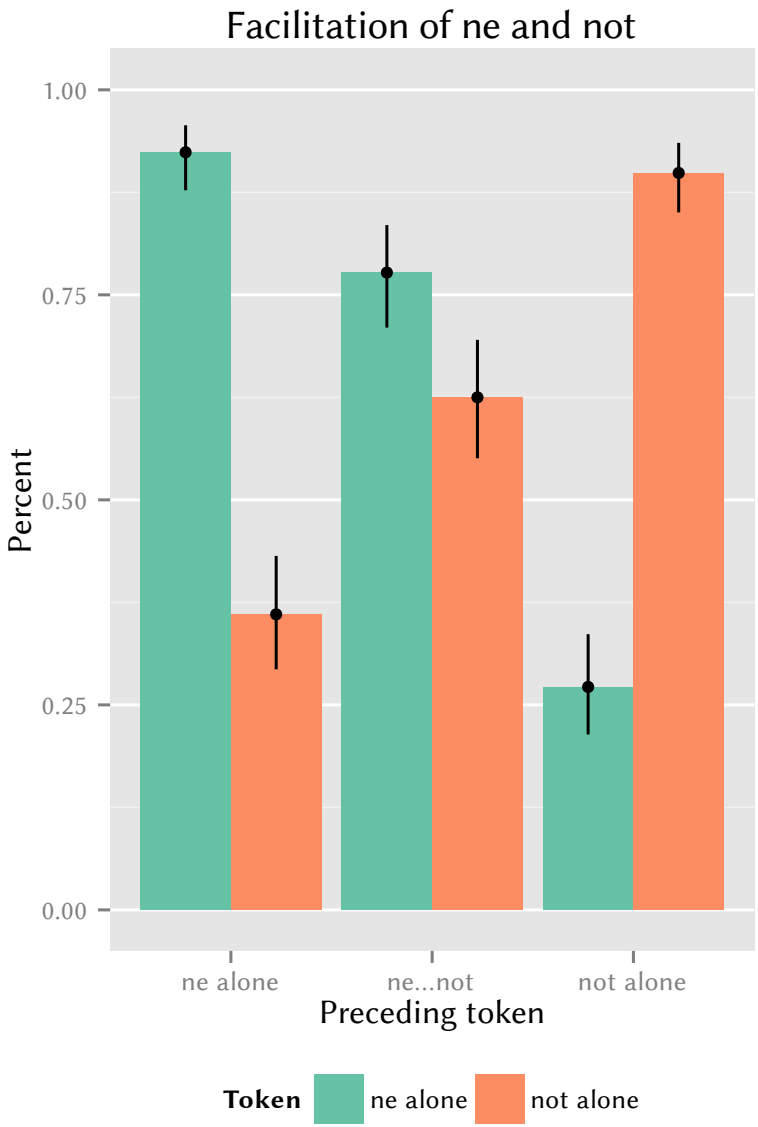
(1) he ne shal nouȝt decieue him
Early Prose Psalter, 161:131:11, from Frisch (1997)

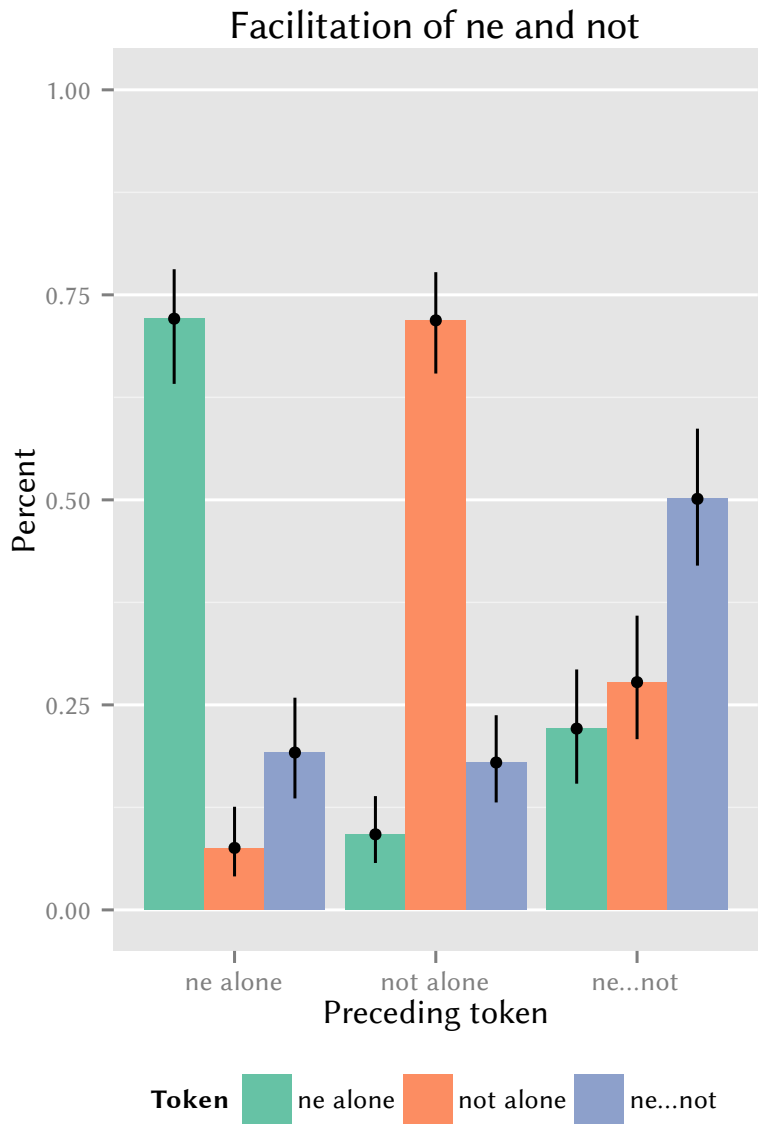


Two analyses



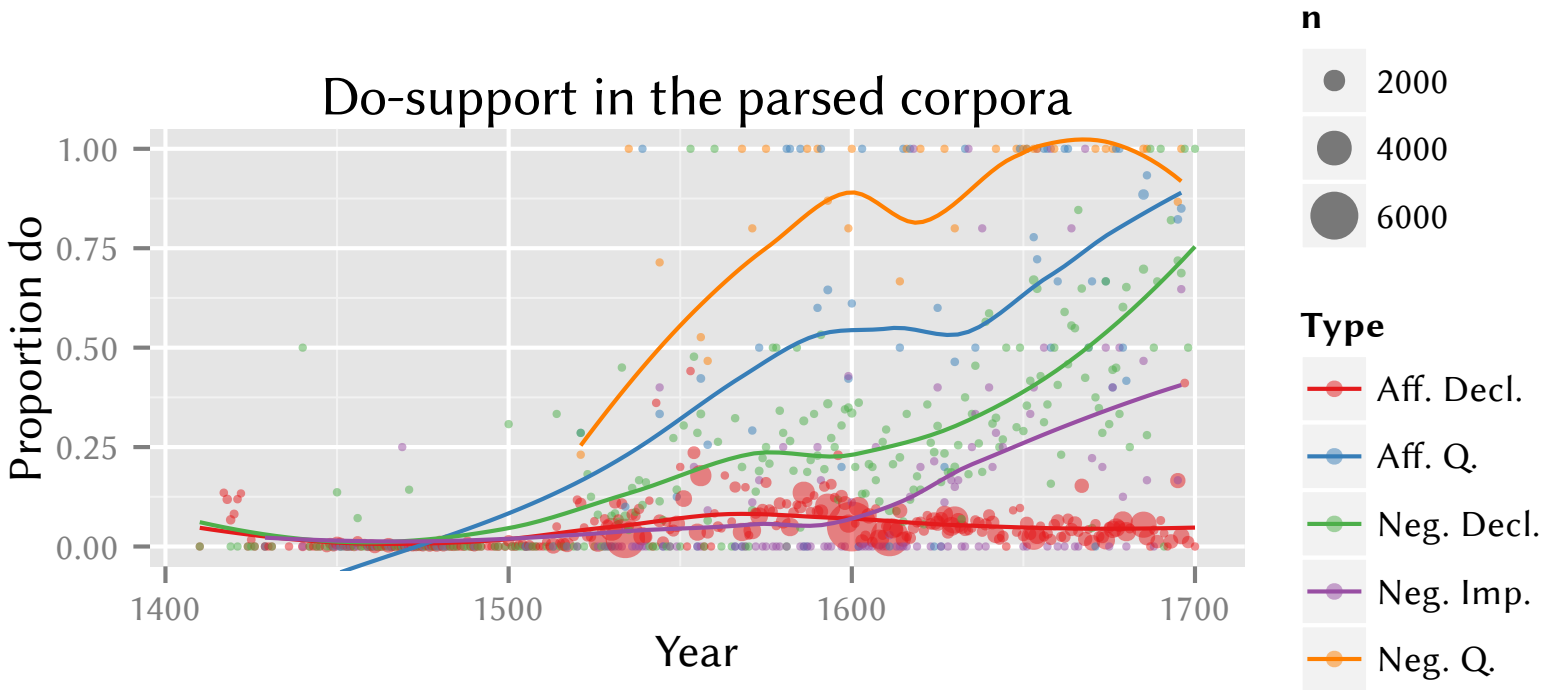
Results (PPCME2)





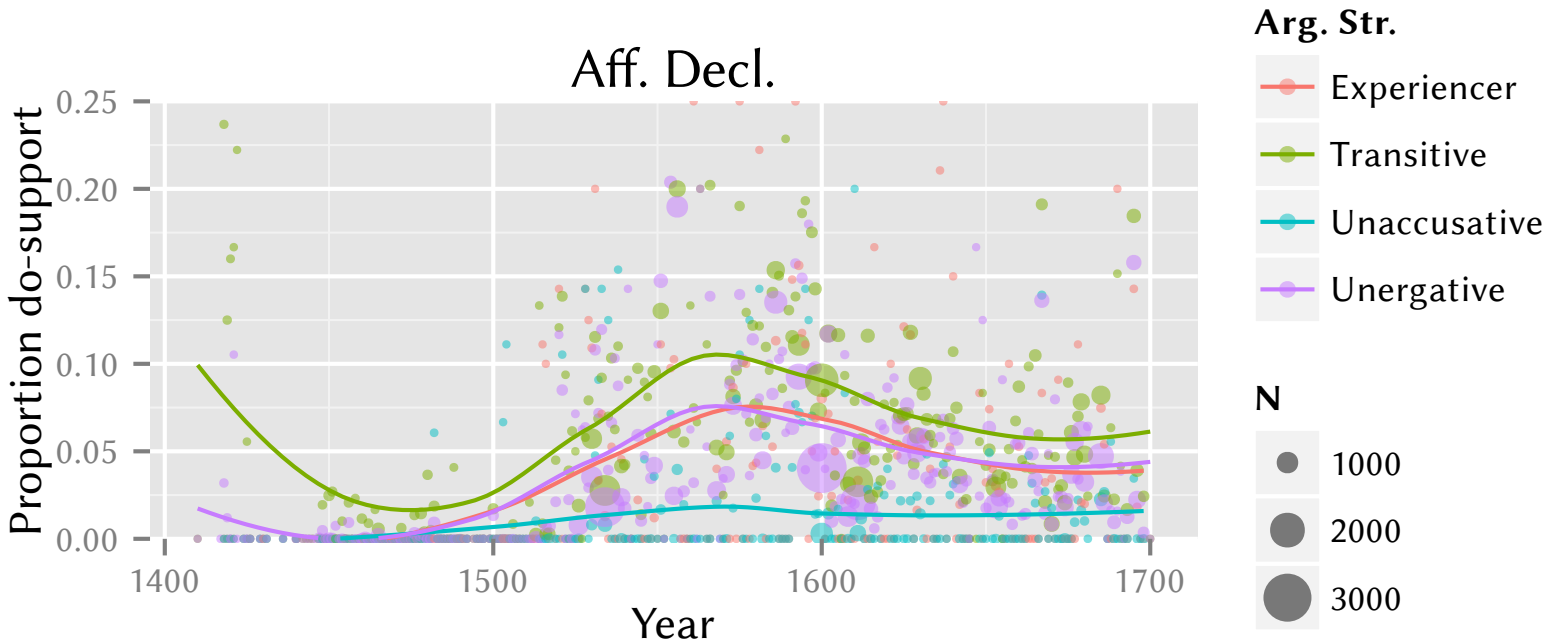
Do-support

- In the Early Modern English (EME) period (1500–1700), the use of auxiliary *do* became obligatory in English negative declaratives and questions (inter alia)
- During the course of this change there was a period when *do* was used in (non-emphatic) affirmative declaratives, which is banned in present-day English



Two kinds of *do*

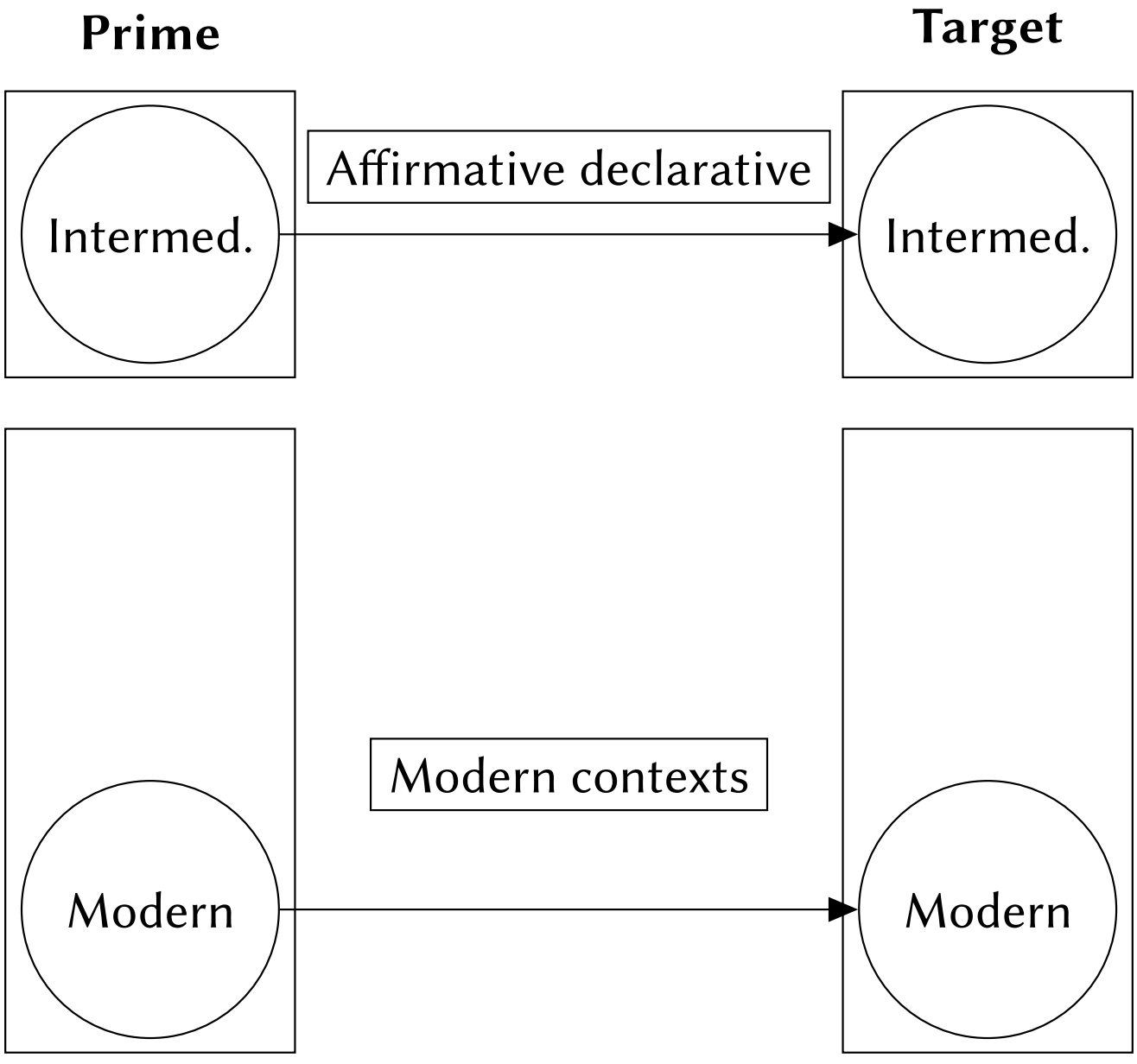
- Ecay (2012) proposed that the *do* found in affirmative declaratives is distinct from the modern type of *do*, is merged lower than T, and functions in early EME as a marker of argument structure

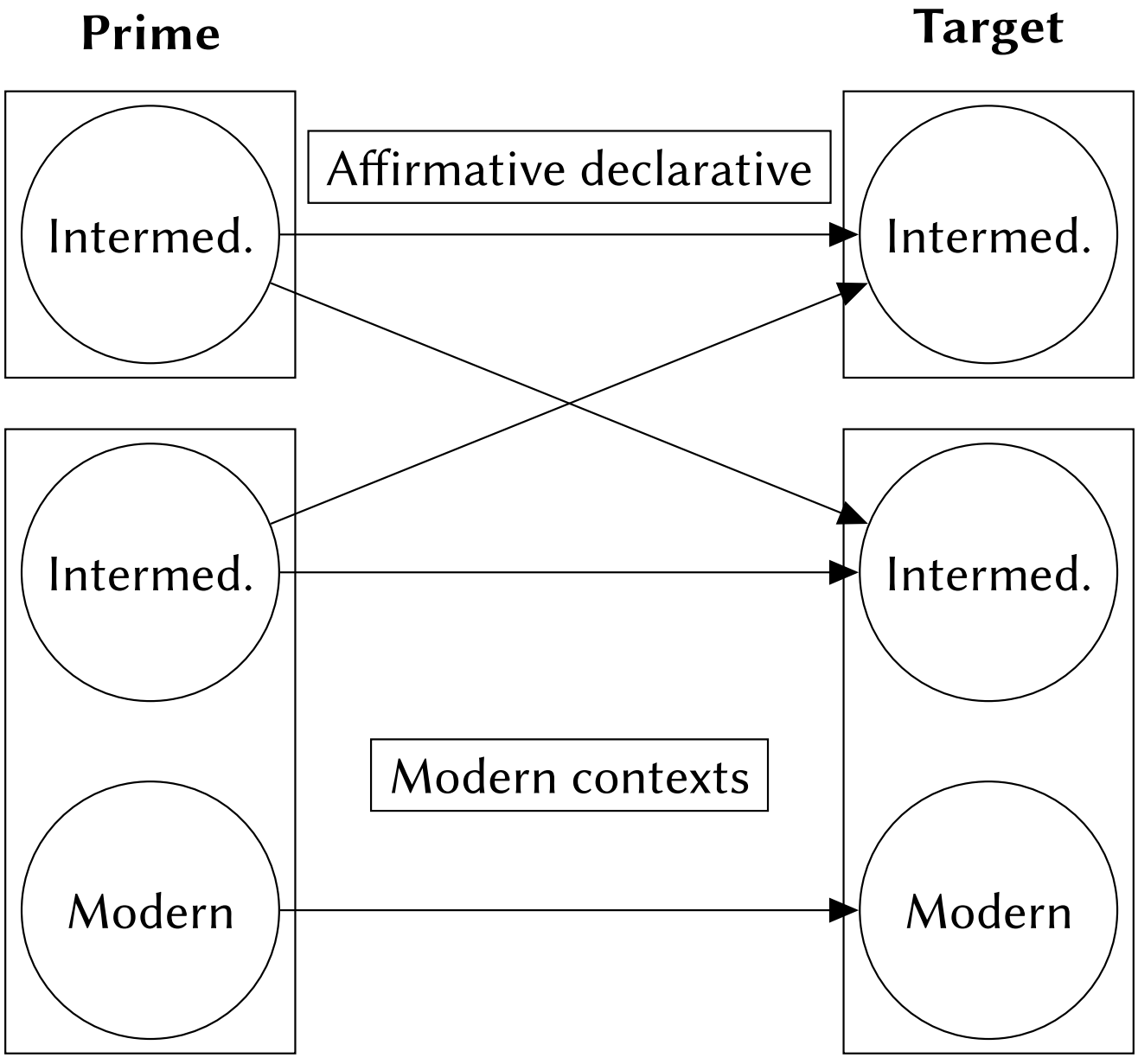


- If this is so, it should be visible in priming data

Priming predictions for *do*

- The intermediate (low-*do*) grammar can produce surface *do* in affirmative declarative contexts
- It can **also** do so in modern *do*-support contexts (with external argument)
- The modern (high-*do*) grammar can produce surface *do* only in the modern *do*-support contexts


Prime
Target
Intermed.
Affirmative declarative
Intermed.
Modern contexts
Modern
Modern


Prime
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Affirmative declarative
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Modern contexts
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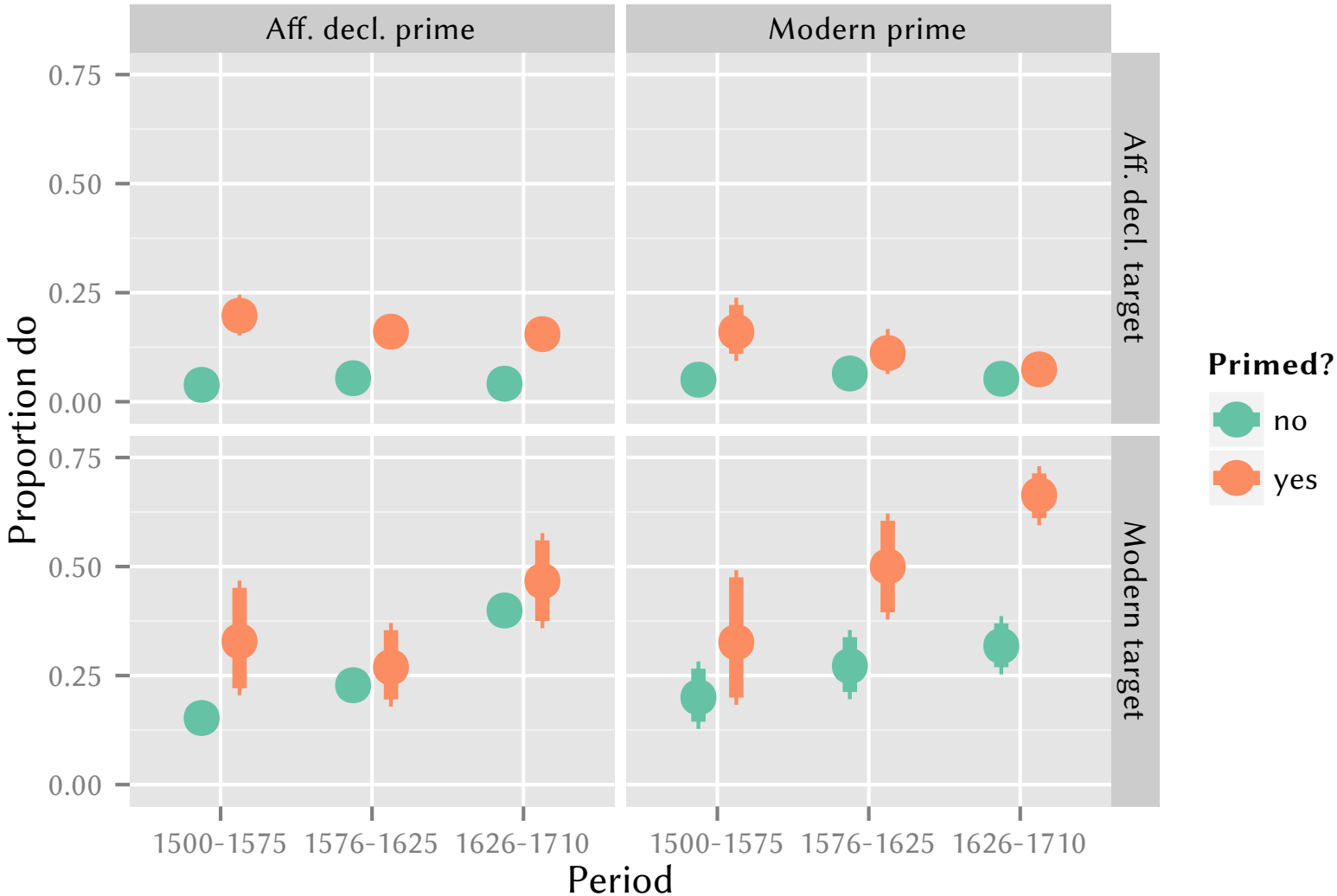
Results


Aff. decl. prime
Modern prime
Aff. decl. target
Modern target
Proportion do
0.75
0.50
0.25
0.00
1500-1575
1576-1625
1626-1710
Period
Primed?
no
yes

Conclusions

- The Constant Rate Effect is important because it provides a link between frequency data attested in historical corpora and the mental representations that underlie language and language change
- We would like to suggest that priming data constitute another, independent source of linkage between these two domains
  - As has been shown in our two case studies
- The investigation of priming evidence can support and refine the conclusions of quantitative studies of syntactic change

Conclusions

- Priming research has been deployed in studies of spoken corpora to answer questions about grammatical variation in contemporary American English and Romance languages
- There is also a large and growing experimental literature on structural priming, to which this work creates obvious bridges
- We would love to see more linguists using priming methods as a tool to understand their favorite variables!

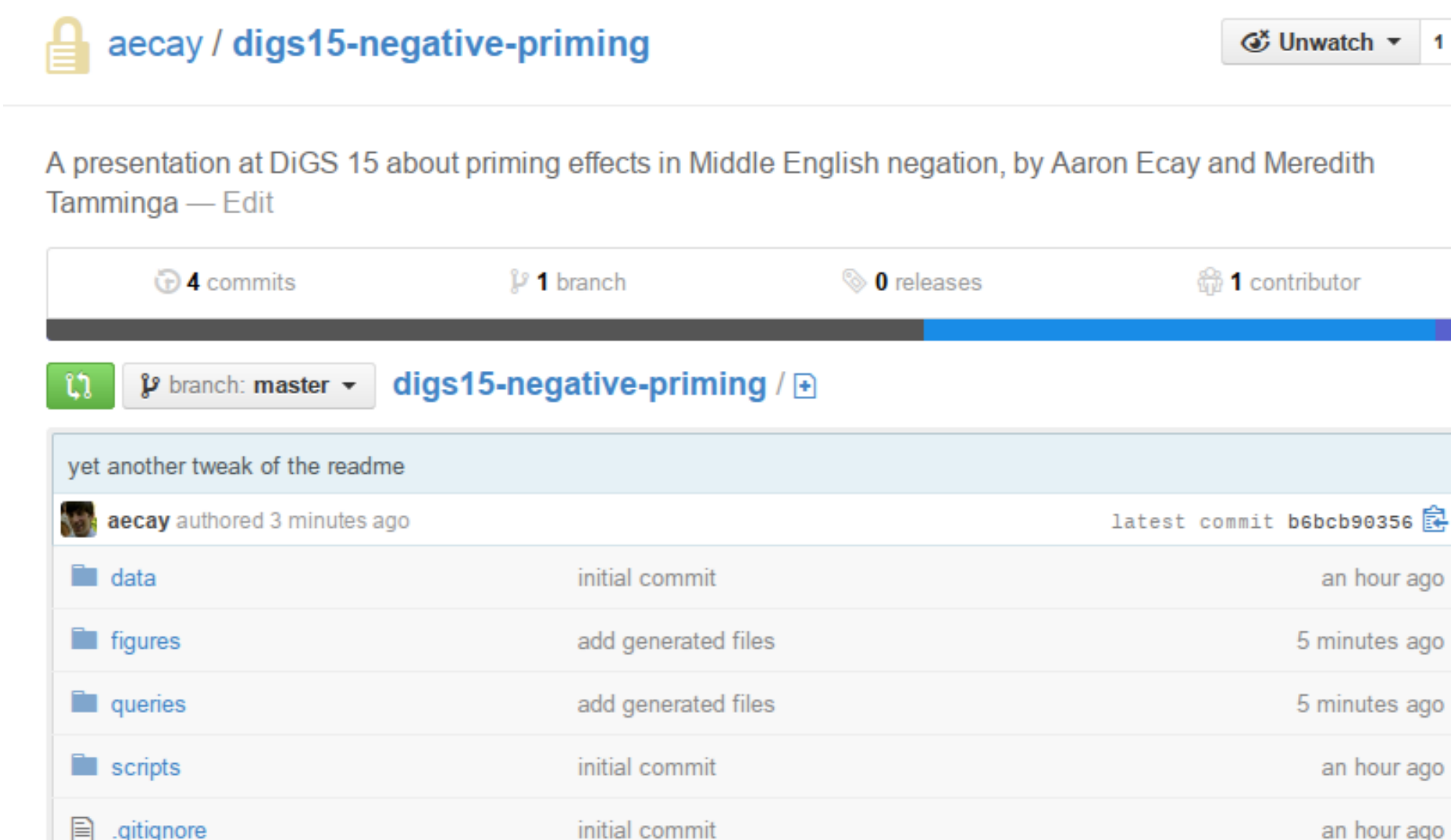
Acknowledgments

We would like to thank the following:

- The compilers of the corpora used (PPCME2, PPCEME, PCEEC)
- Beatrice Santorini
- Tony Kroch
- Our fellow graduate students at Penn
- The audience of DiGS15 for comments on an earlier version (containing the negation results)

High technology

All the data and code used in this analysis is available on GitHub: `https://github.com/aecay/digs15-negative-priming`



Questions

Questions?

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