ANALYSING CATEGORY CHANGE WITH ENRICHED DATA

A grammatical and sociolinguistic study of *-ed* participles, 1810–2009

Turo Vartiainen & Tanja Säily

INTRODUCTION

Study based on 2 Academy of Finland funded **postdoctoral projects**:

- *Categorization, creativity and change in Construction Grammar*
  - Turo Vartiainen

- *Historical sociolinguistics meets Construction Grammar: The case of productivity in English*
  - Tanja Säily

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2

CATEGORY CHANGE

- A change where a word from one word class starts to be used in contexts associated with words of another class

- Often accompanied with a change in meaning, but not necessarily

- Our focus: change of **-ed participles from verbs to adjectives**

  - e.g. Denison (1998), Vartiainen (2016, 2021)

  - Ambiguity between the **passive** construction (verbal) and the **predicative** construction (adjectival)

VERB OR ADJECTIVE?

1. Miss Day was **frightened** by the cats last night. (COHA, Fiction, 1888)

2. He has been **much interested** in your movements. (COHA, Fiction, 1846)

3. We'd be **very much pleased**. (COHA, Fiction, 1909)

4. We are **very pleased** with the court's ruling. (COHA, News, 2017)

CHANGE IN DEGREE MODIFICATION PATTERNS OF *-ED* PARTICIPLES

- Early C19: *She's **much** interested in it.*

→ PDE: *She's **very** interested in it.*

- Previous research: gradual change between mid-C19 and mid-C20
  - e.g. Denison (1998), Vartiainen (2021)
  - **Limited** datasets, many grammatical and sociolinguistic aspects remain to be explored
  - Analyses focused on **token frequency** rather than type frequency (productivity; Baayen 2009, Säily 2014, Säily et al. 2018)

OUR STUDY

- Material: *Corpus of Historical American English* (COHA), fiction section (200Mw)
  - Enriched with gender metadata by Öhman et al. (2019)
- **Research questions**
  - Timing of the increase in productivity of *very -ed*?
  - Role of women vs. men in the change?
    – Cf. Nevalainen & Raumolin-Brunberg (2003), Säily (2014)
  - *Very much -ed* as a bridging context?
  - Role of *-ed* participles denoting psychological states?
    – Levin (1993: 188–195): "verbs of psychological state" (e.g. *amuse*, *embarrass*, *interest*), "verbs of desire" (e.g. *crave*, *desire*, *want*); others like *devoted*, *distinguished, stoked* 'excited'

DATA RETRIEVAL

- Retrieved from Korp, https://korp.csc.fi

- **Basic principle 1**: the *-ed* form must be a participle, i.e. a verb form

  - Potential verbal origins checked in OED Online

  - Dozens of *-ed* adjectives excluded from the search results
    (e.g. *warm-hearted*, *hairy-faced*, *good-natured*)

  - Participles with the prefix *un-* only included if the OED includes a verb with the prefix
    (e.g. *unsettle > unsettled*)

- **Basic principle 2**: *much* and *very* must be in variation in the given context

  - *Too much -ed*, *as much -ed* excluded

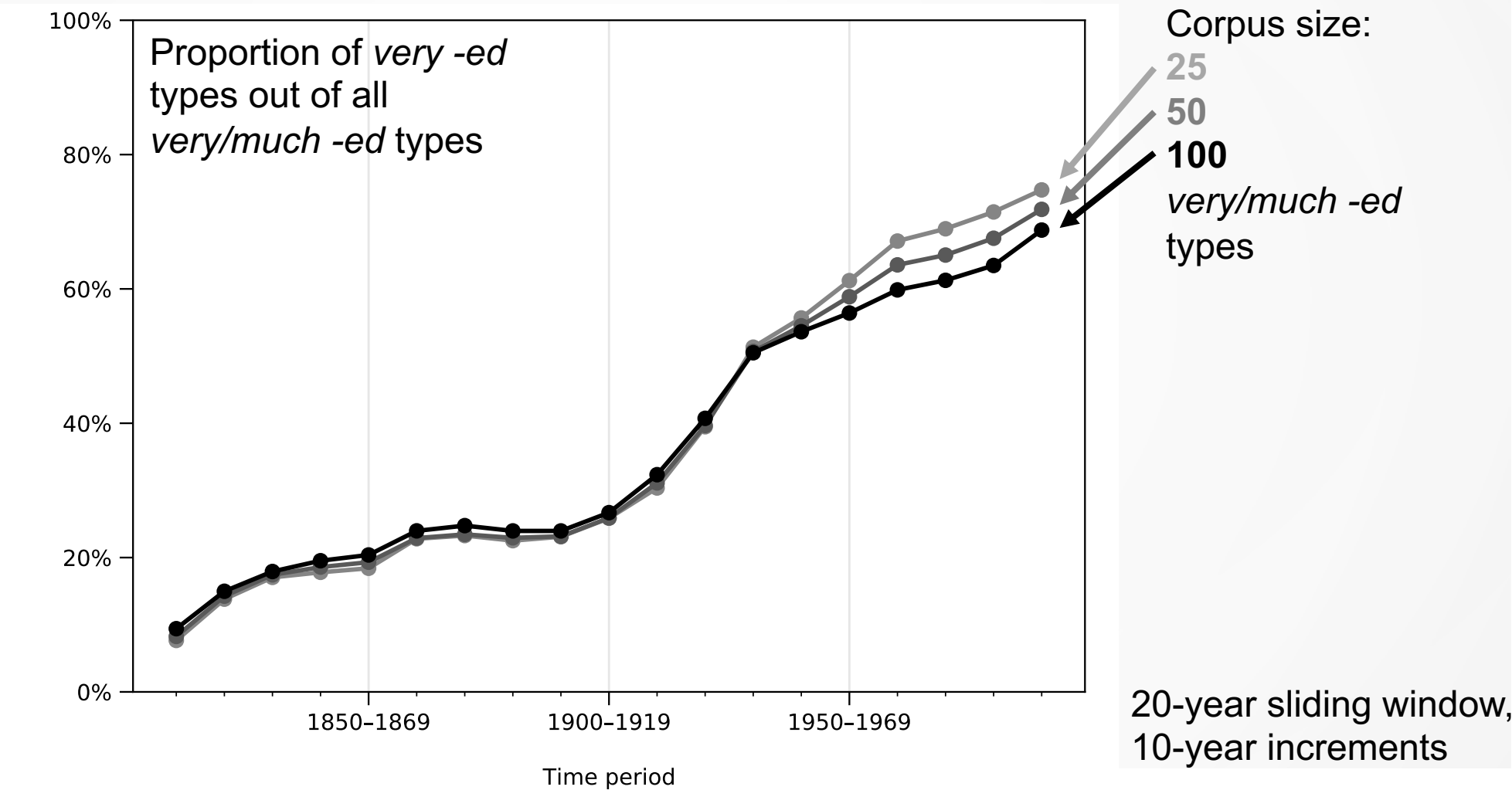 - *So* included, even though the meanings of *so much* and *so very* are not exactly the same

METHODS

RODRÍGUEZ-PUENTE ET AL. (IN PRESS), SÄILY & SUOMELA (2009, 2017), SÄILY & VARTIAINEN (FORTHCOMING)

- Problem: type frequencies cannot be normalized, grow nonlinearly with corpus size

- **Basic measure**: proportion of types of interest out of all relevant types

  - E.g. proportion of *very -ed* types out of *very -ed* and *much -ed* types

- **Setting 1**: make subcorpora comparable by taking samples of equal size from each

  - Plot proportions as line graphs over time, use a sliding window for periodization

- **Setting 2**: estimate statistical significance of differences observed

  - Use permutation testing within each time period, compare each subcorpus with randomly composed subcorpora of the same size

  - Plot the subcorpus as a line graph over time and the random subcorpora as confidence intervals around the line, use a sliding window for periodization
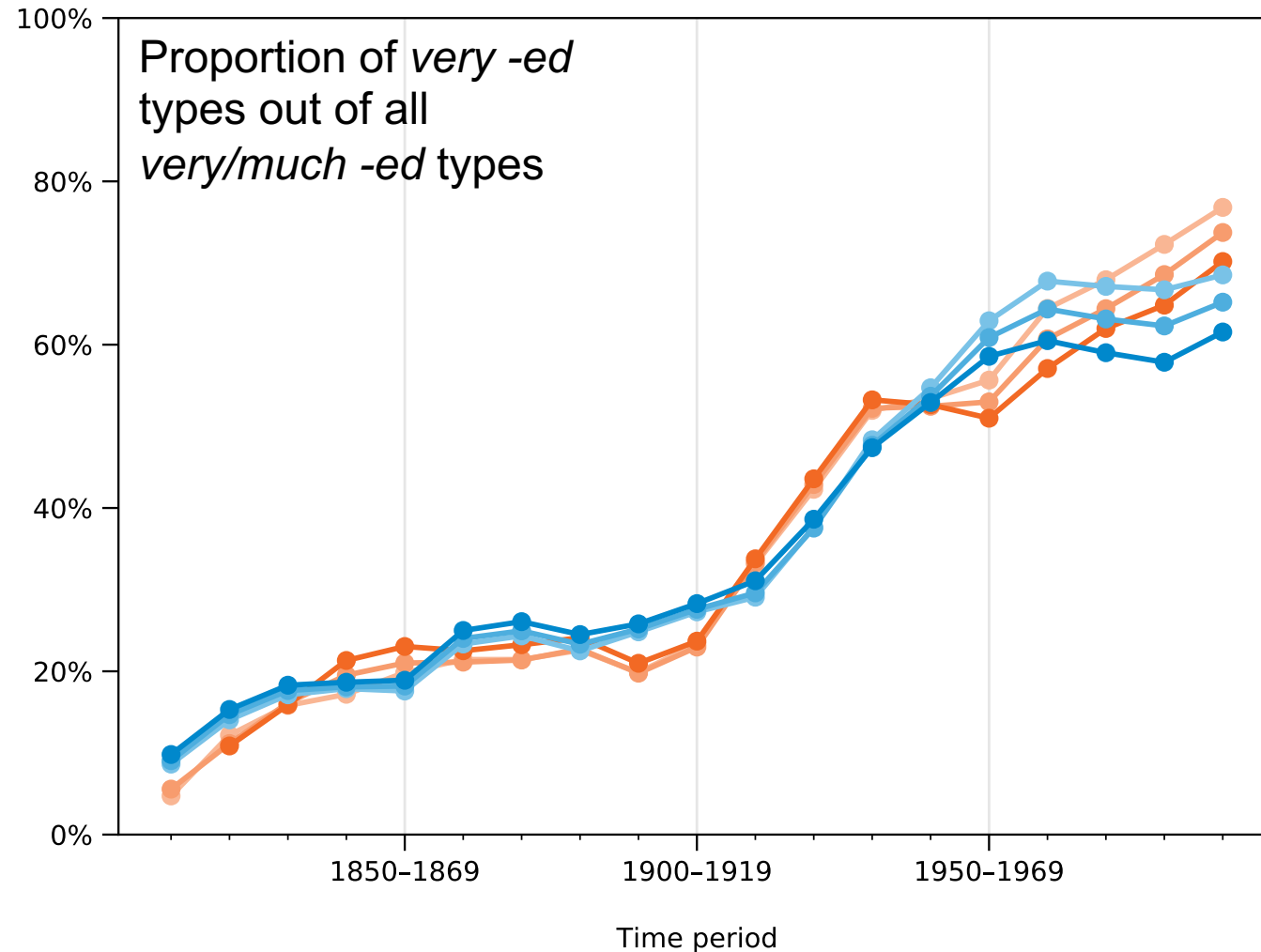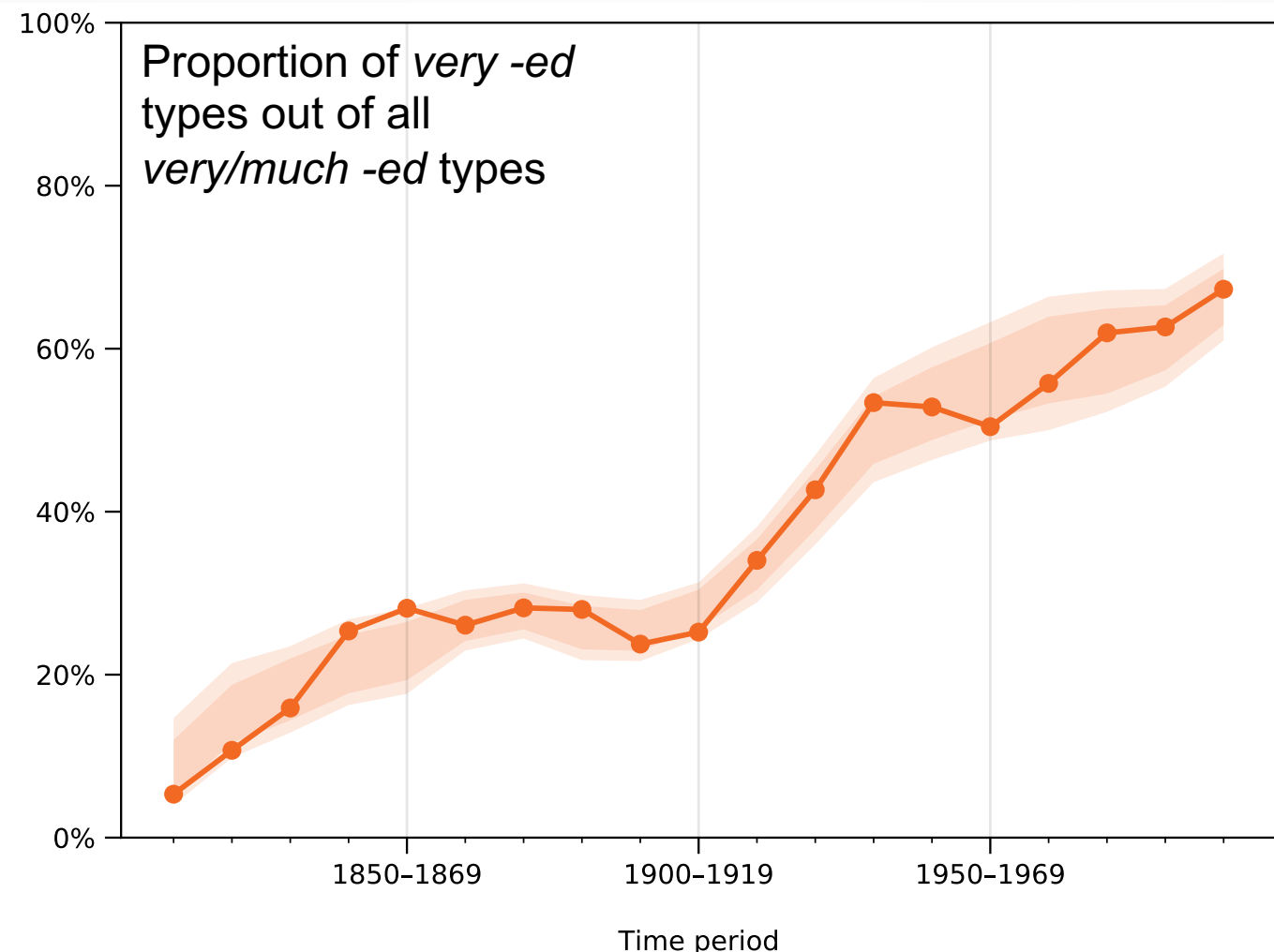
OVERALL DEVELOPMENT OF *VERY -ED*

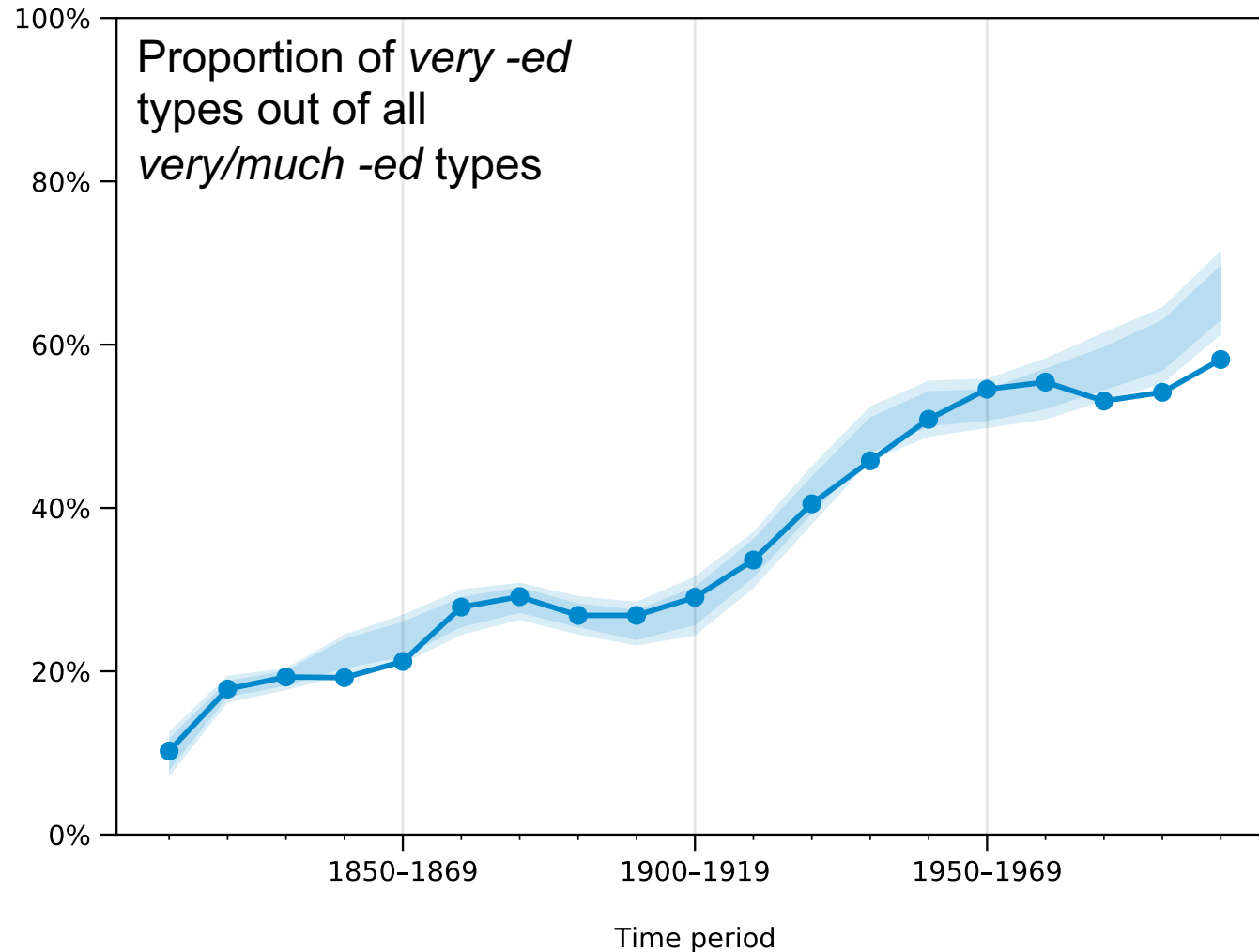Proportion of *very -ed* types out of all *very/much -ed* types

Corpus size:
25
50
100
very/much -ed types

20-year sliding window, 10-year increments

Time period

WOMEN (ORANGE) VS. MEN (BLUE)

Proportion of *very -ed*
types out of all
very/much -ed types

STATISTICAL SIGNIFICANCE (WOMEN)

Proportion of *very -ed* types out of all *very/much -ed* types

STATISTICAL SIGNIFICANCE (MEN)

Proportion of *very -ed* types out of all *very/much -ed* types

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STATISTICAL SIGNIFICANCE (MEN, NOVELS)

Proportion of *very -ed* types out of all *very/much -ed* types

VERY MUCH -ED AS A BRIDGING CONTEXT?

Proportion of *very much -ed* types out of all *much -ed* types

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OVERALL DEVELOPMENT OF *VERY -ED*

Proportion of *very -ed* types out of all *very/much -ed* types
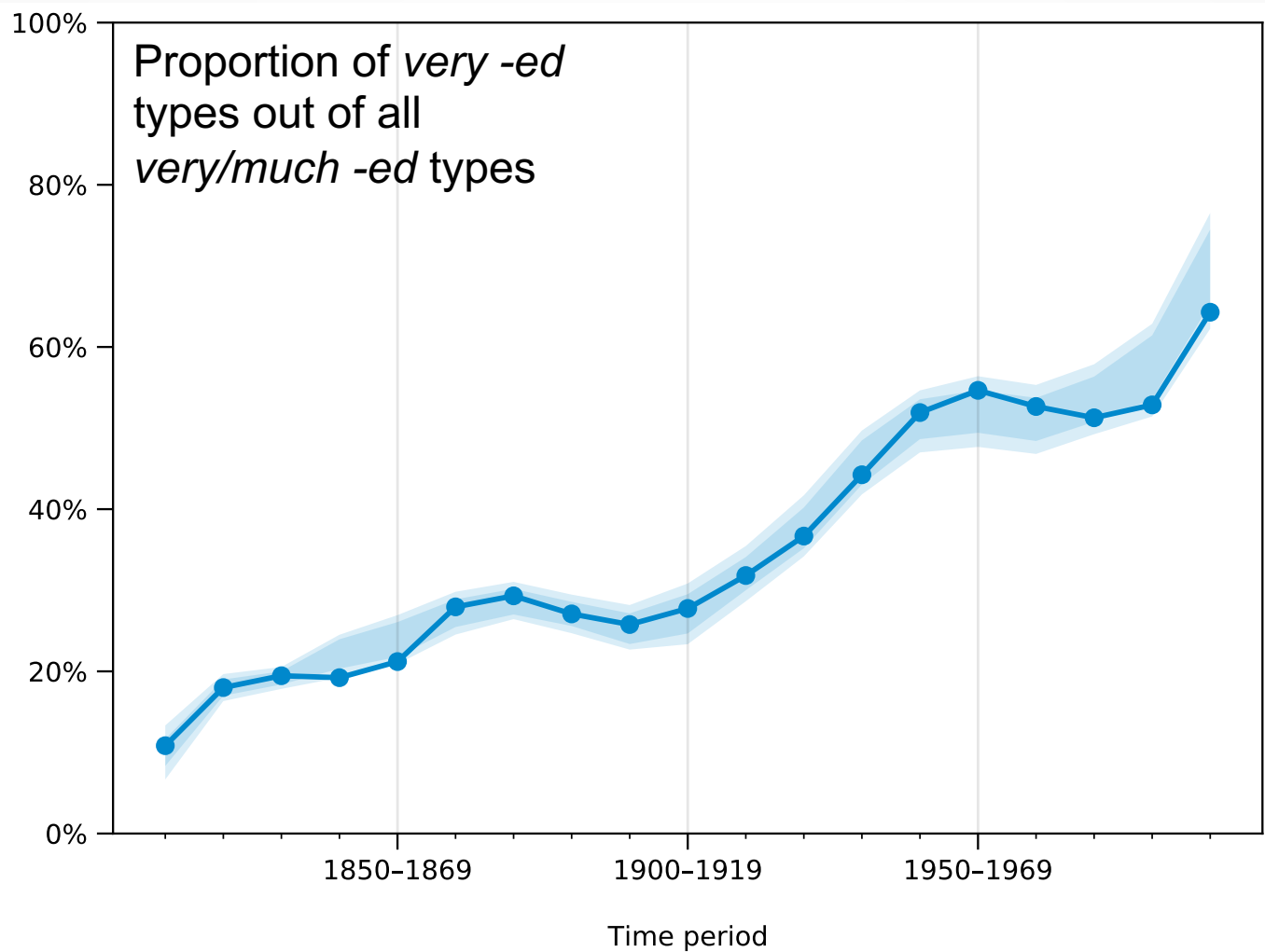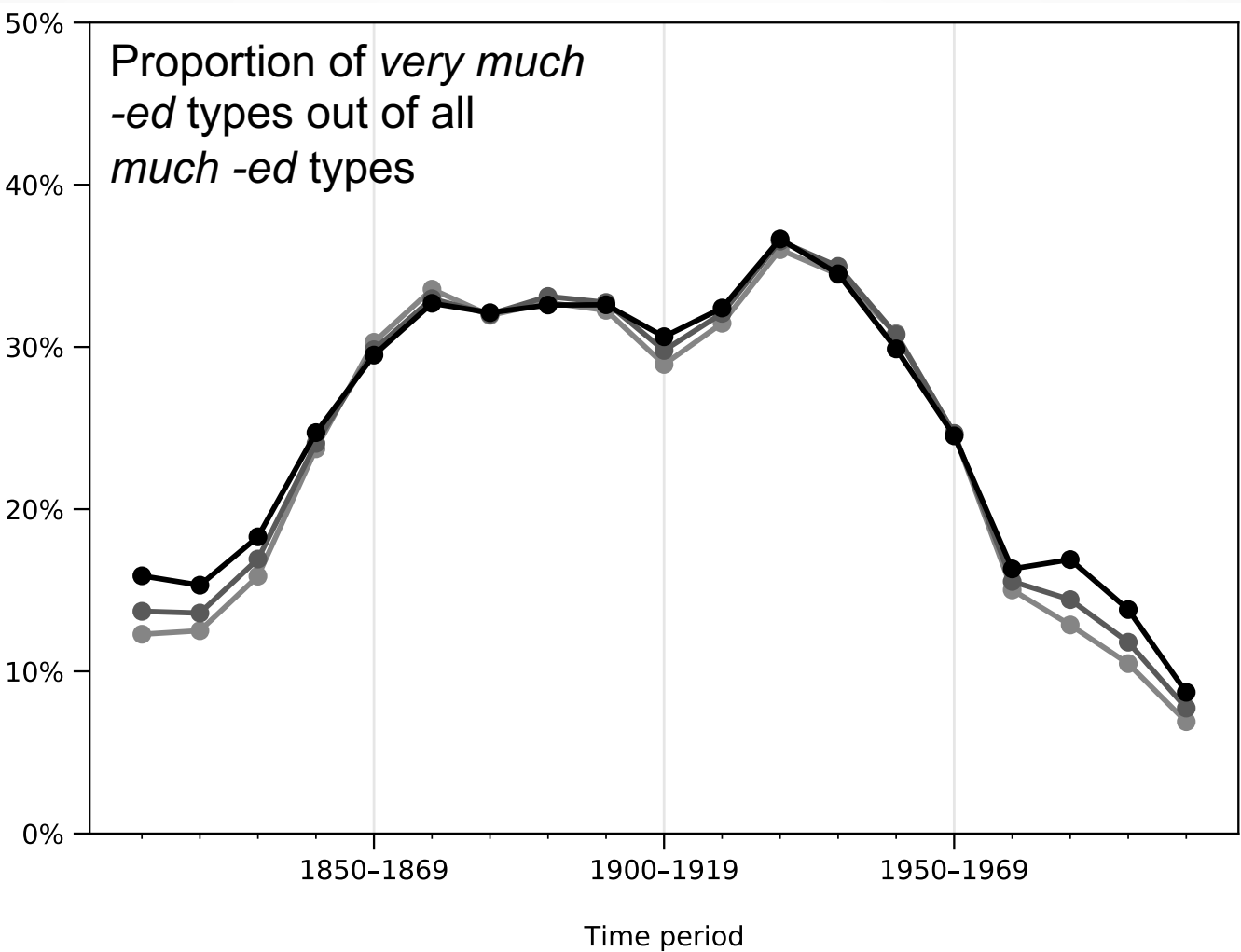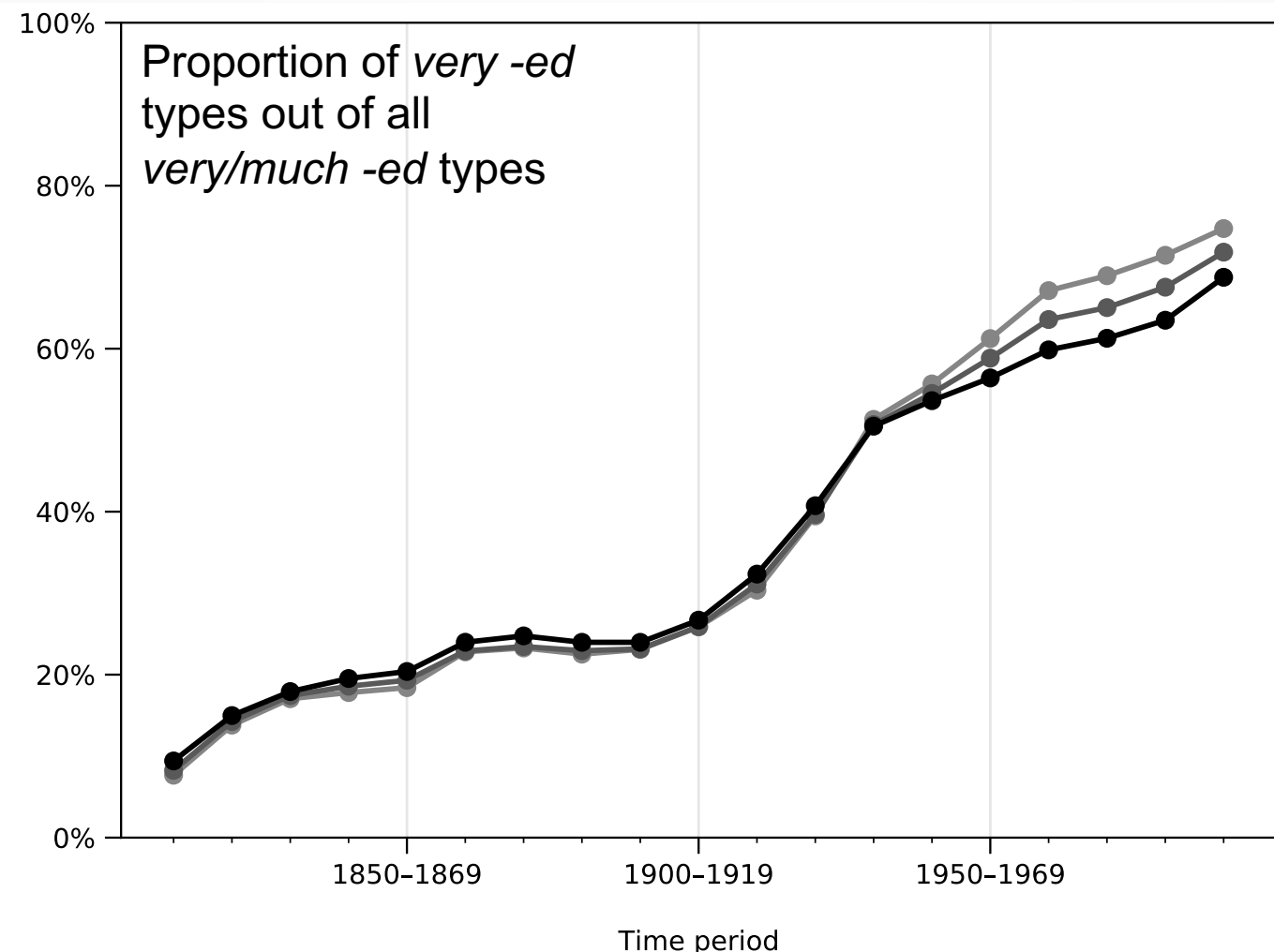
ZOOMING IN: PSYCHOLOGICAL STATES

Proportion of *very -ed* types out of 'mental' *very/much -ed* types

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NOT PSYCHOLOGICAL STATES

Proportion of *very -ed* types out of 'non-mental' *very/much -ed* types

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17
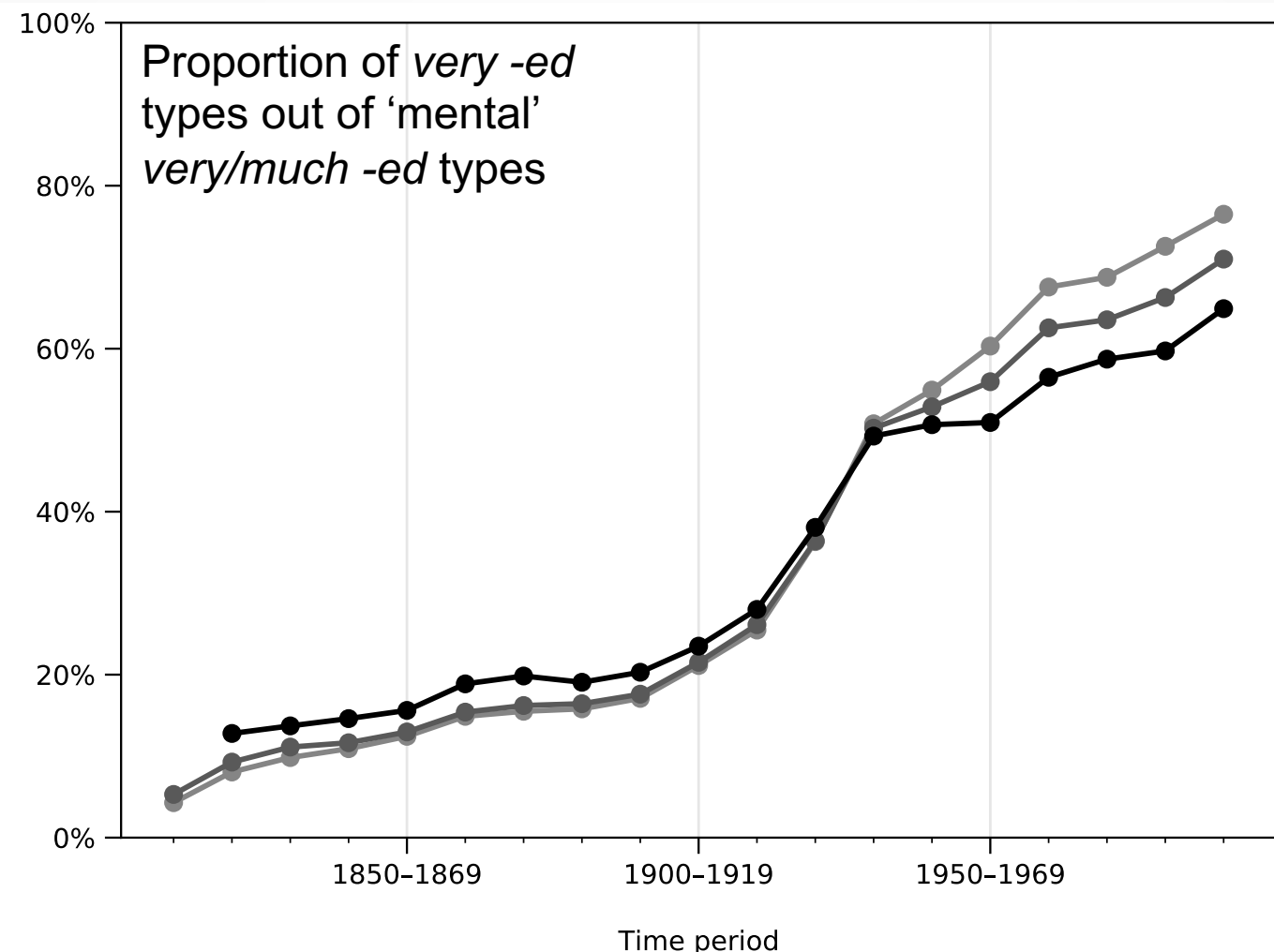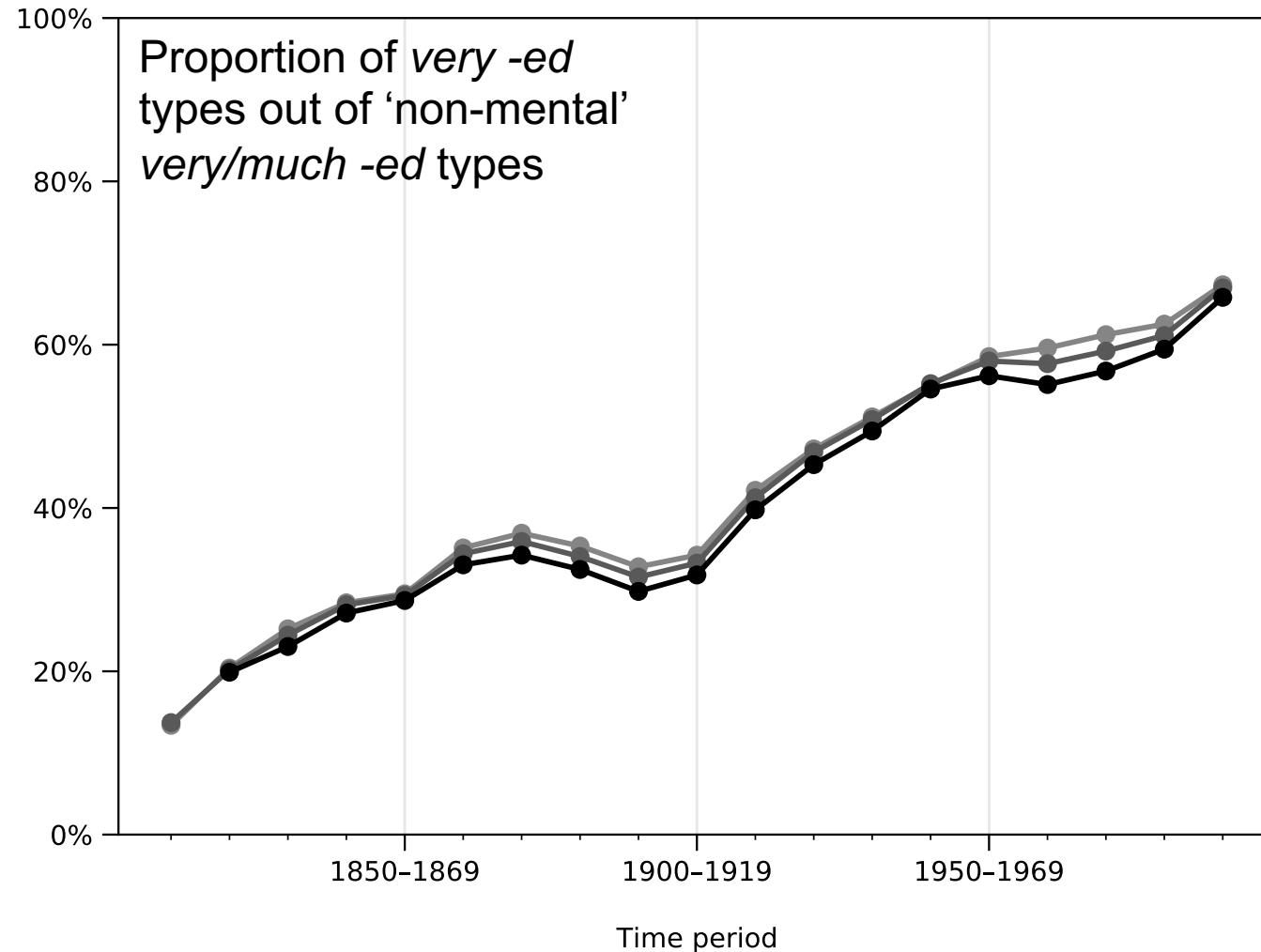
PSYCHOLOGICAL STATES WITHIN *VERY -ED*

Proportion of 'mental' *very -ed* types out of all *very -ed* types

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18
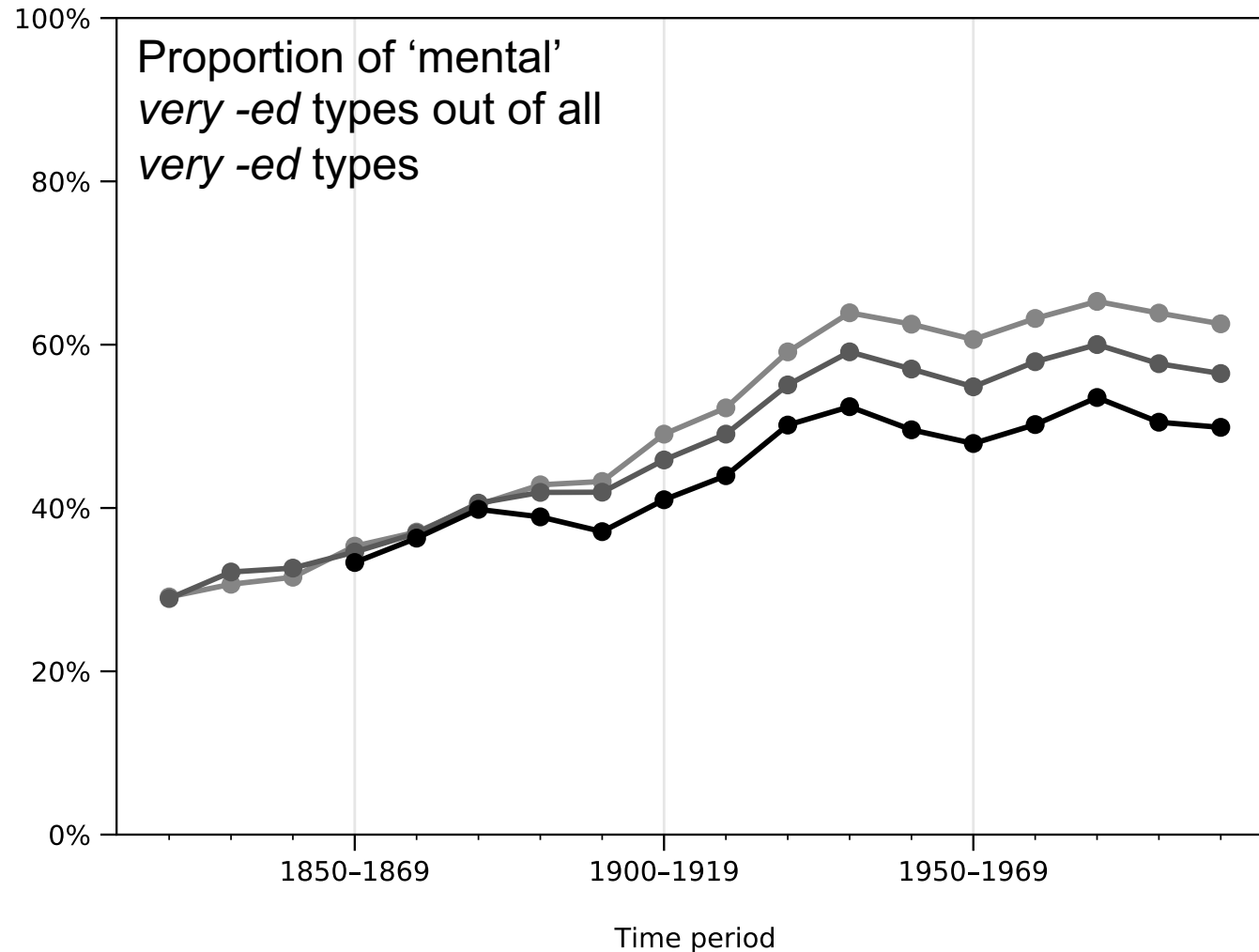
PSYCHOLOGICAL STATES WITHIN *MUCH -ED*

Proportion of 'mental' *much -ed* types out of all *much -ed* types
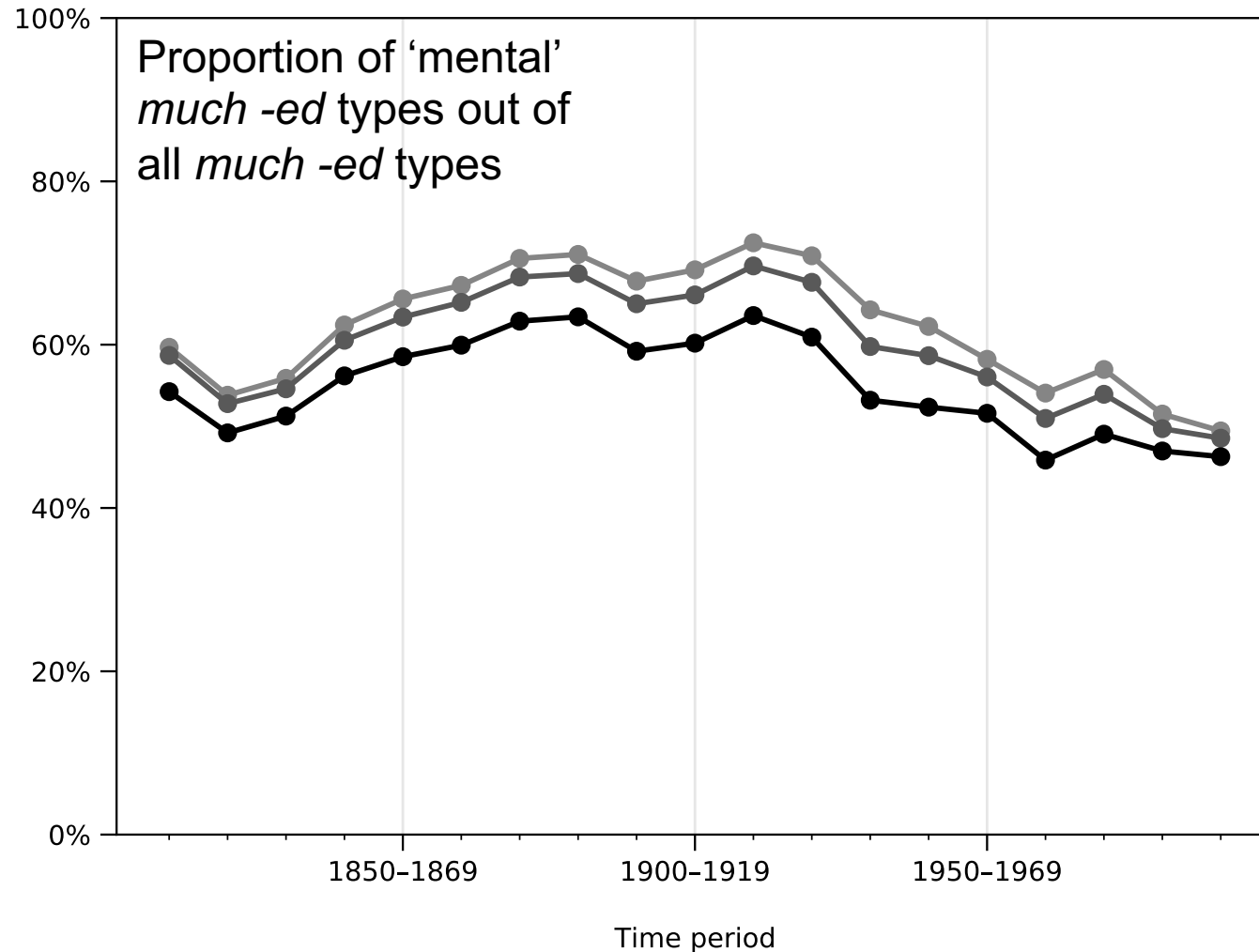
SUMMARY

- *Very -ed* gains ground on *much -ed* in AmE fiction, 1810–2009

  - Change in productivity resembles an **S-curve**: slow beginning, rapid middle starting from beginning of C20, slower final decades of the corpus

- No statistically significant **gender differences** when genre imbalance accounted for (novels vs. others)

- *Very much -ed* could have functioned as a **bridging context**

  - High proportion out of all *much -ed* types overlaps temporally with increase in *very -ed*

- Rapid change in *very -ed* especially prominent in participles denoting **psychological states** – spreads to this context previously dominated by *much -ed*

CONCLUSION

- **Future research**
  - Attributive vs. predicative usage (*very* initially used more with attribution)
  - Complementation patterns (*by*-phrases, PP-complements, clausal complements)
  - Modifiers of *much* (C19: often modified by *so/very*, PDE: less frequent)
  - Negation (*much* more associated with negation than *very*)
  - Multivariate analysis with grammatical and social factors?
- **Enriched datasets**: great potential for research
  - We can now do sociolinguistics with COHA!

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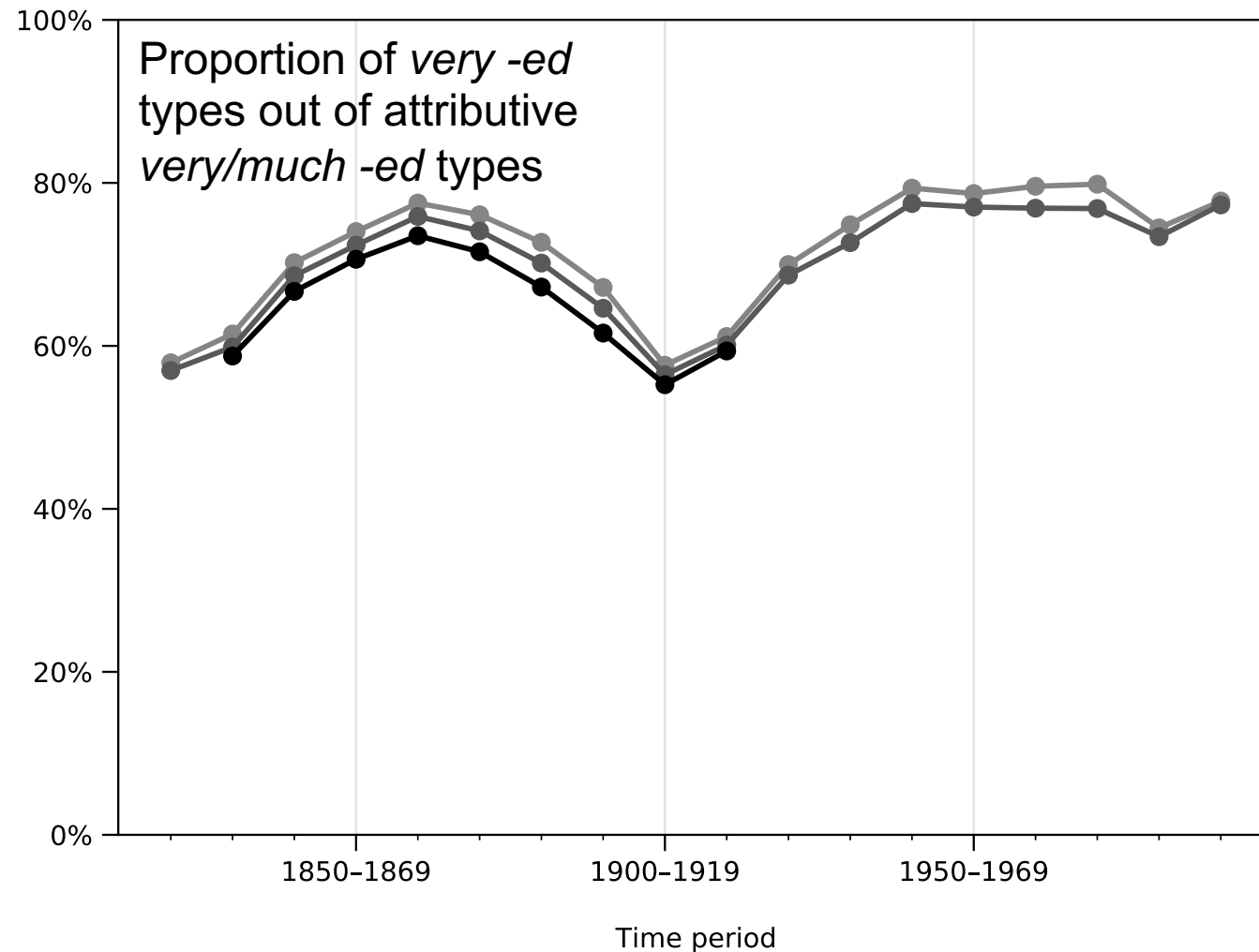
THANK YOU!

… and thanks to Jukka Suomela for applying the methods to our data 📈

BONUS SLIDES

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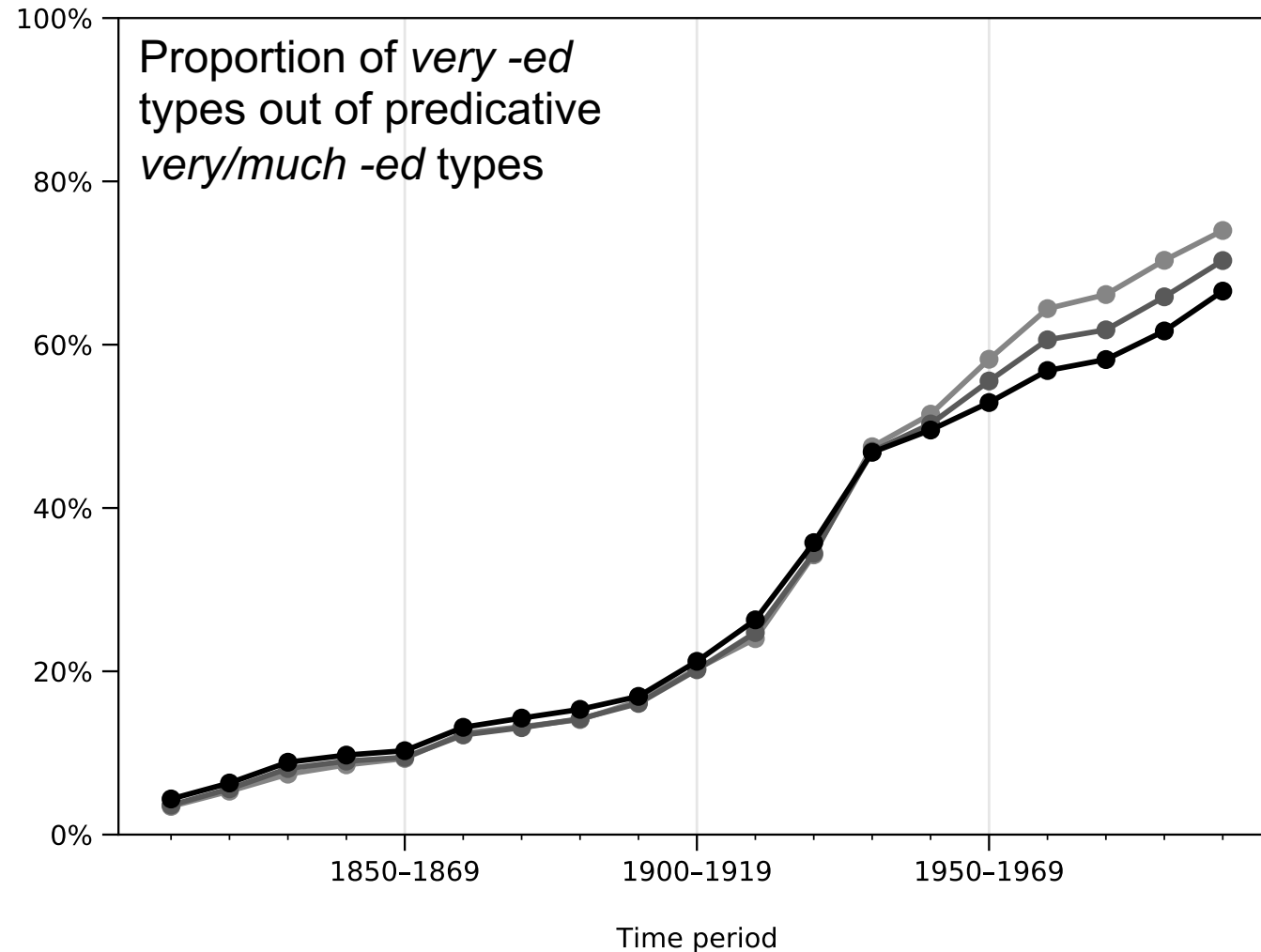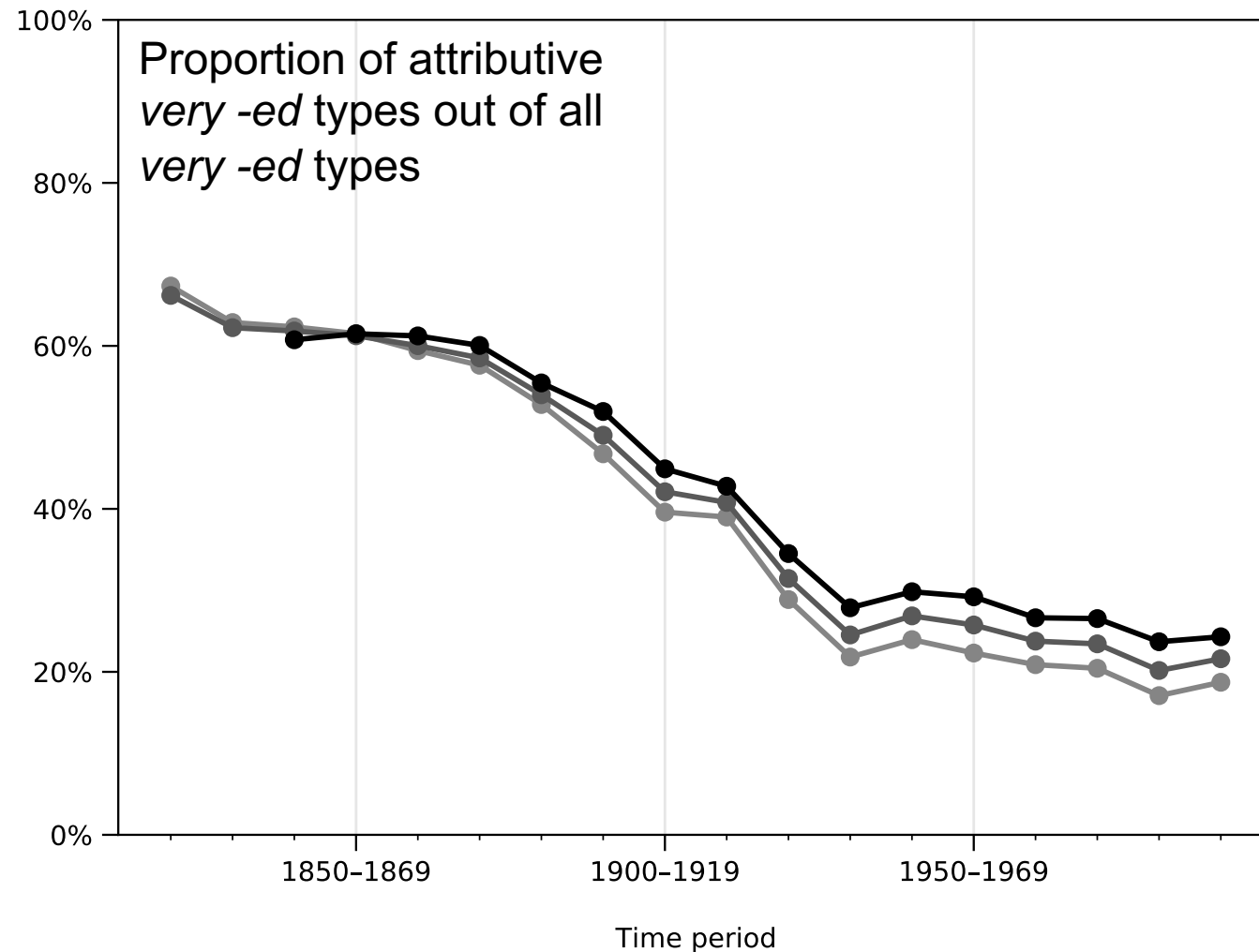HELSINGFORS UNIVERSITET
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ATTRIBUTIVE USAGE

Proportion of *very -ed* types out of attributive *very/much -ed* types

PREDICATIVE USAGE

Proportion of *very -ed* types out of predicative *very/much -ed* types

ATTRIBUTIVE USAGE WITHIN *VERY -ED*

Proportion of attributive *very -ed* types out of all *very -ed* types

Time period

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NEGATION

Proportion of *very -ed* types out of *very/much -ed* types in negative contexts

NEGATION WITHIN *MUCH -ED*

Proportion of *much -ed* types in negative contexts out of all *much -ed* types

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29