three ways to rate themself

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"Singular They"

Singular *they* with different antecedents is variably acceptable

(*Bjorkman 2017, Konnelly & Cowper 2020, Conrod 2019, Camilliere et al. 2021*)

Singular *they* with antecedents of variable specificity:

(1) Every professor praises their advisees daily — quantified
(2) The ideal advisor emails their advisees regularly — generic
(3) My committee chair signs their emails with a :) — definite
(4) Richard submits their manuscripts early — proper name

nb. "singular they" = has a [sg] antecedent in the syntax

Reflexive Forms of Singular They

Reflexive form of singular *they* can variably appear as ***themself*** or ***themselves***:

(1) Every professor assesses themself on their teaching
(2) Every professor assesses themselves on their teaching

…variably according to what?

Questions and Hypotheses

RQ 1: How does **antecedent type** affect the ratings of *themself* and *themselves*?

H1a: *themself* > *themselves* with more specific antecedents (*influenced by Ackerman et al. 2018*)
H1b: *themselves* > *themself* with less specific

RQ 2: What **speaker variables** (*macrosocial categories; ideological beliefs*) affect ratings of *themself* / *themselves*?

H2a: *themself* ↗ with {nonbinary, younger, less prescriptive, less gender binarist}
H2b: proper names antecedents (*for either*) ↗ with those folks (*influenced by Conrod 2019*)

RQ3: Are there clear or coherent **'dialect groups'** that align with how people rate *themself/ves* with different antecedents?

H3: speakers will divide into 3 dialect groups: conservative, intermediate, and innovative
(*influenced by Konnelly & Cowper 2019's work on singular they*)

Preview: Theoretical consequences

What can we conclude about English grammar from this data?

- There is variation in how speakers accept themself/themselves
  - **Variation itself will be informative!**
- But how they vary is constrained by phi-matching mechanisms
  - **The mechanisms themselves vary**, across dialect groups

Phi-features of antecedents are not deterministic for phi-features in reflexive anaphors

Background

Background: variation in acceptability of singular *they*

Analyses of **variation with singular *they***:

Bjorkman 2017	2 grammars	Morphosyntactic analysis acceptability ~ antecedent's **definiteness/specificity**
Konnelly & Cowper 2020	3 grammars	Morphosyntactic analysis acceptability ~ antecedent's **specificity & gender** features
Conrod 2019	3 grammars	Morphosyntactic analysis acceptability ~ antecedent's **specificity & gender** features
Camilliere et al. 2021	3 grammars	Experiment (*k-means clustering, proper name antecedents*) acceptability **ratings cluster** ~ grammar

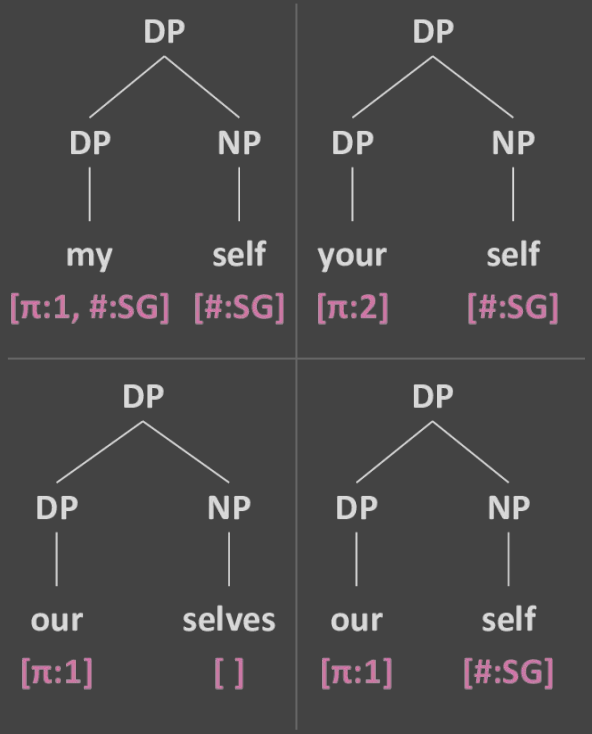
Background: morphosyntax of English number

Some English Pronouns

me	[π:1, #:SG]
us	[π:1]
you	[π:2]
her	[#:SG, g:FEM]
them	[ ]

- **Number phi-features**
  - Pronouns like *my* or *her* are [#:SG], but pronouns like *they* and *our* **lack a # feature**
    (*cf. Bjorkman 2017, Konnelly & Cowper 2020, Conrod 2019*)
  - **Interpretation** and (absence of) SG:
    - Lacking a # feature can be consistent with referring to a single individual (*cf. Wiltschko 2008)*
- ***A null hypothesis***
  - *Constant across dialects: phi-feature specifications for pronouns **and** how they are interpreted*

Background: morphosyntax & *-self* reflexives



- **Two nominals** inside the -self reflexive
  (*see Postal 1966, Helke 1973, Ahn and Kalin 2018*)

- Each nominal has its own **independent phi-features**
  - Note the distribution of SG
  - [SG] self can be used with plural pronouns *(i.e. those without a number feature)* like *your*, *our*, and … *them*

Methods

Pilot Study

Two-part pilot task

- **Online survey** conducted using Qualtrics
- **Large-scale** (*n*=1,127) reach, via social media and Prolific

Demographics and ideology survey

- **Demographics**: Age, gender, location, languages
- **Prescriptivism scale**: how prescriptivist are you? (8 questions)
- **Binarist scale**: how much do you believe there are exactly 2 genders? (3 questions)

Ratings survey

Pilot Task: Ratings Survey

Design:

14 conditions 2 pronoun types (*themself* or *themselves*)

× 7 antecedent types:

Quantified indefinites	**Quantified universals**	**Generic definites**	**Distal definites**	**Specific indefinites**	**Proximal definites**	**Proper names**
Anyone who wants a good grade…	*Every person on this planet…*	*The ideal candidate for this job…*	*The driver of that car over there…*	*An employee at the movie theater…*	*The person I talked to yesterday…*	*Alex, who is quite short, …*

× 2 sentences per condition **= 28 total sentences rated**

Question: "How natural or unnatural does this sentence sound?"

Likert scale of 1 (*very unnatural*) to 5 (*very natural*)

Results

Preview of Results

Demographics:

- Age, gender, and ideology scales had an impact on ratings

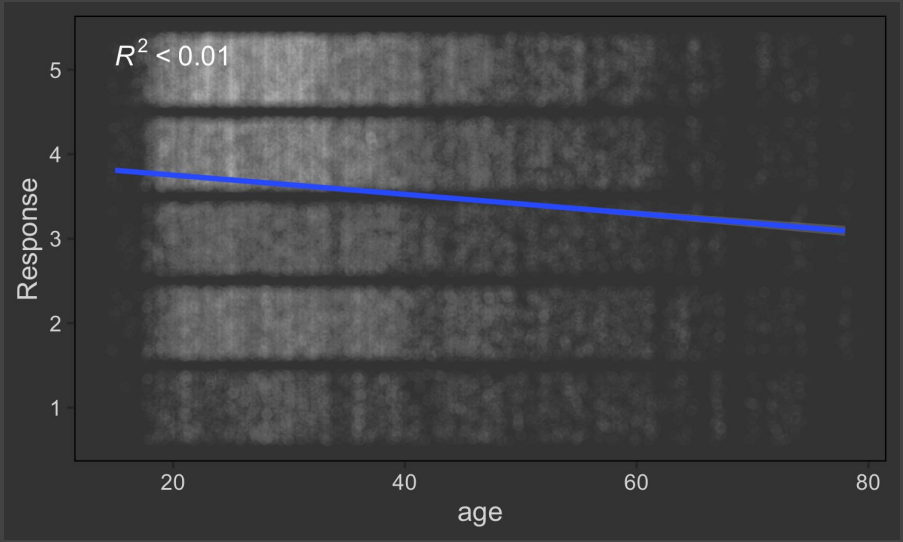
Antecedents:

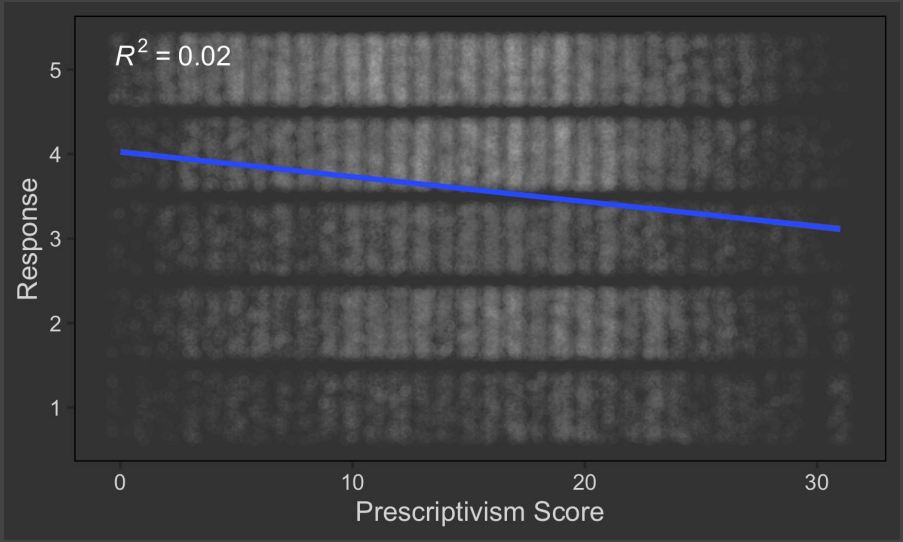
- Impacted ratings, but not readily apparent if *themself/-selves* is collapsed
- Effects of antecedent specificity on ratings not gradient — proper names stood out

K-groups:

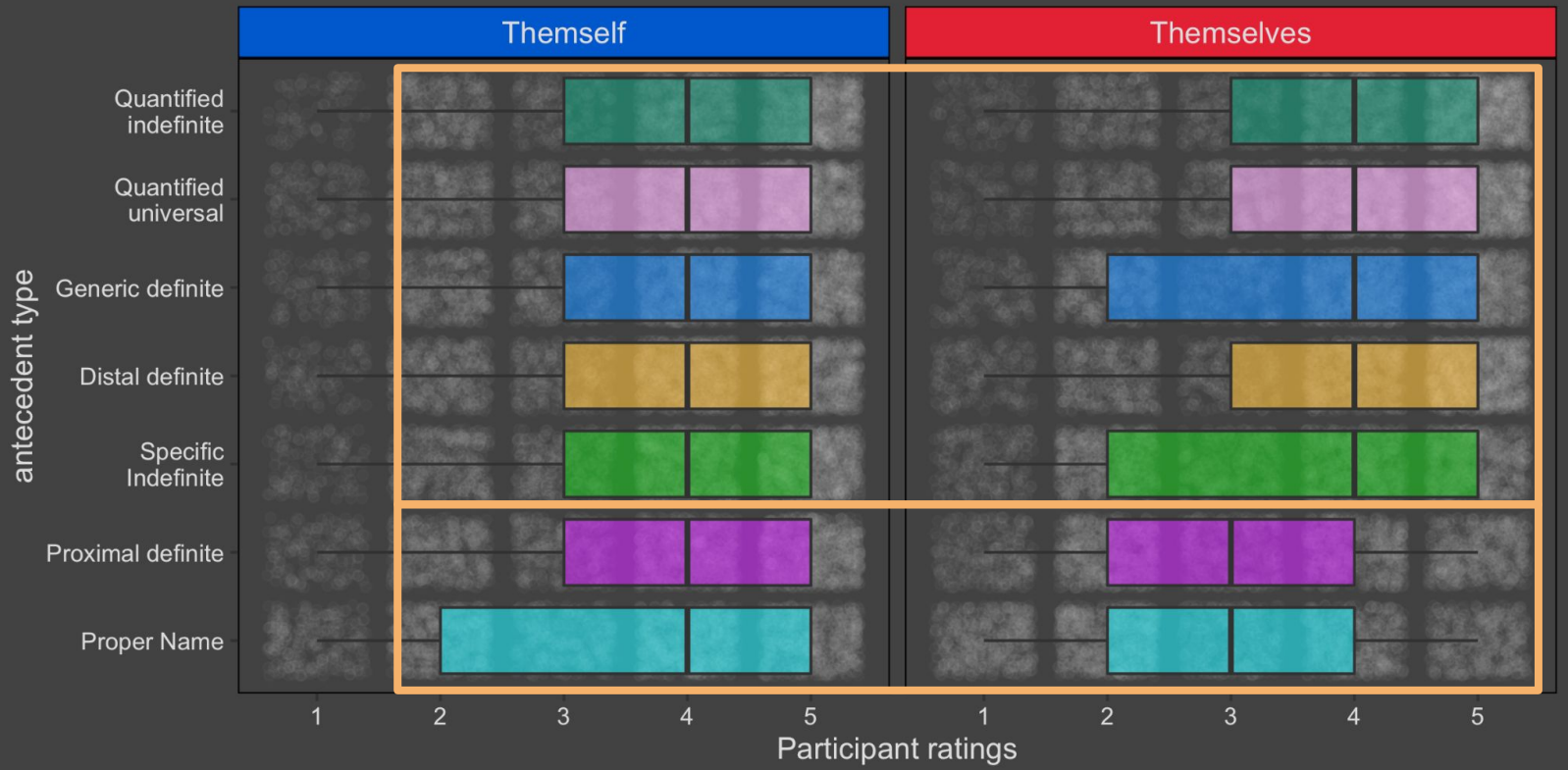
- 3 clusters of participants (based on ratings) were found; interactions with demographic and grammatical variables

Results: effect of age and prescriptivism

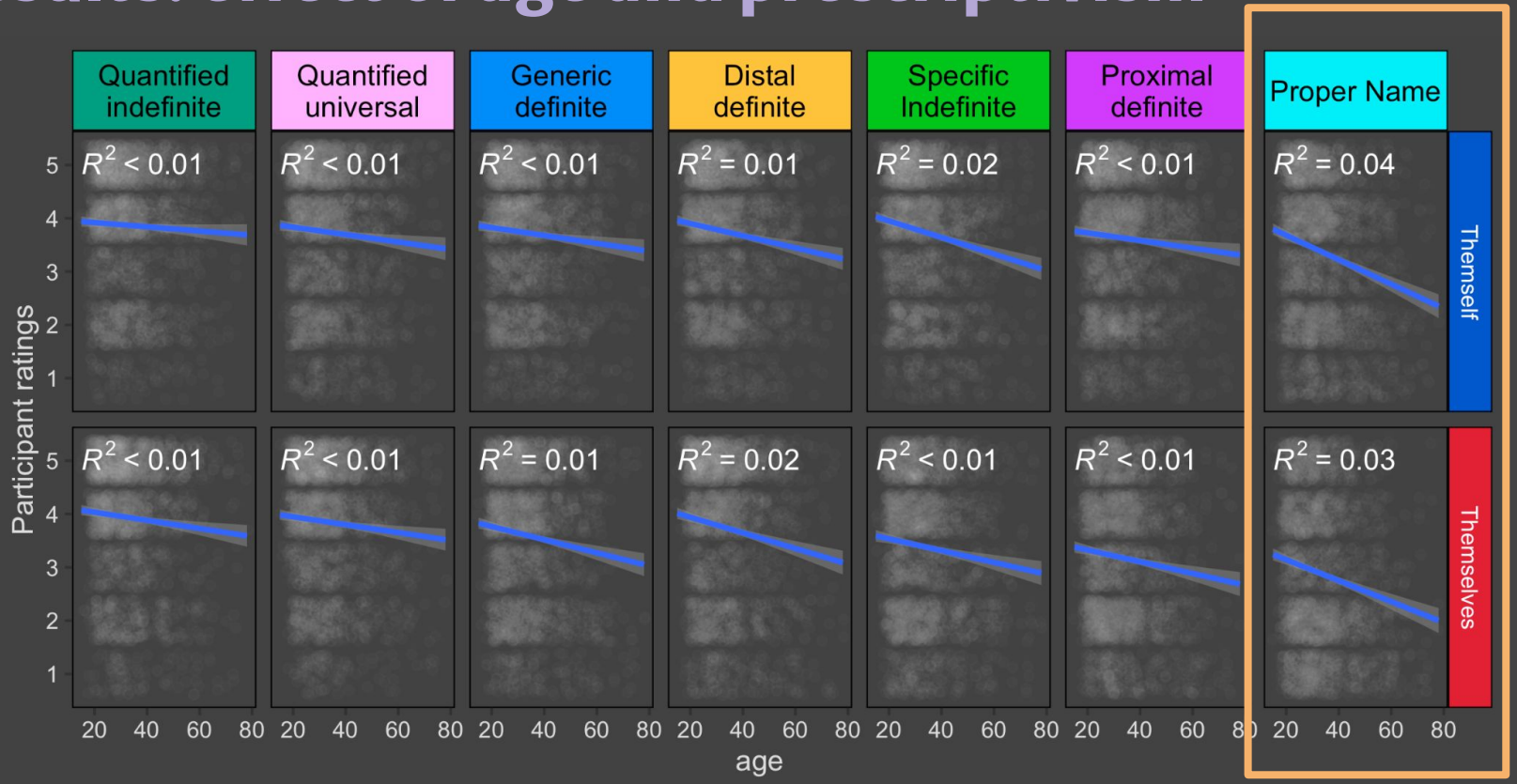




Results: effect of antecedent type x -self/-selves



Results: effect of age and prescriptivism



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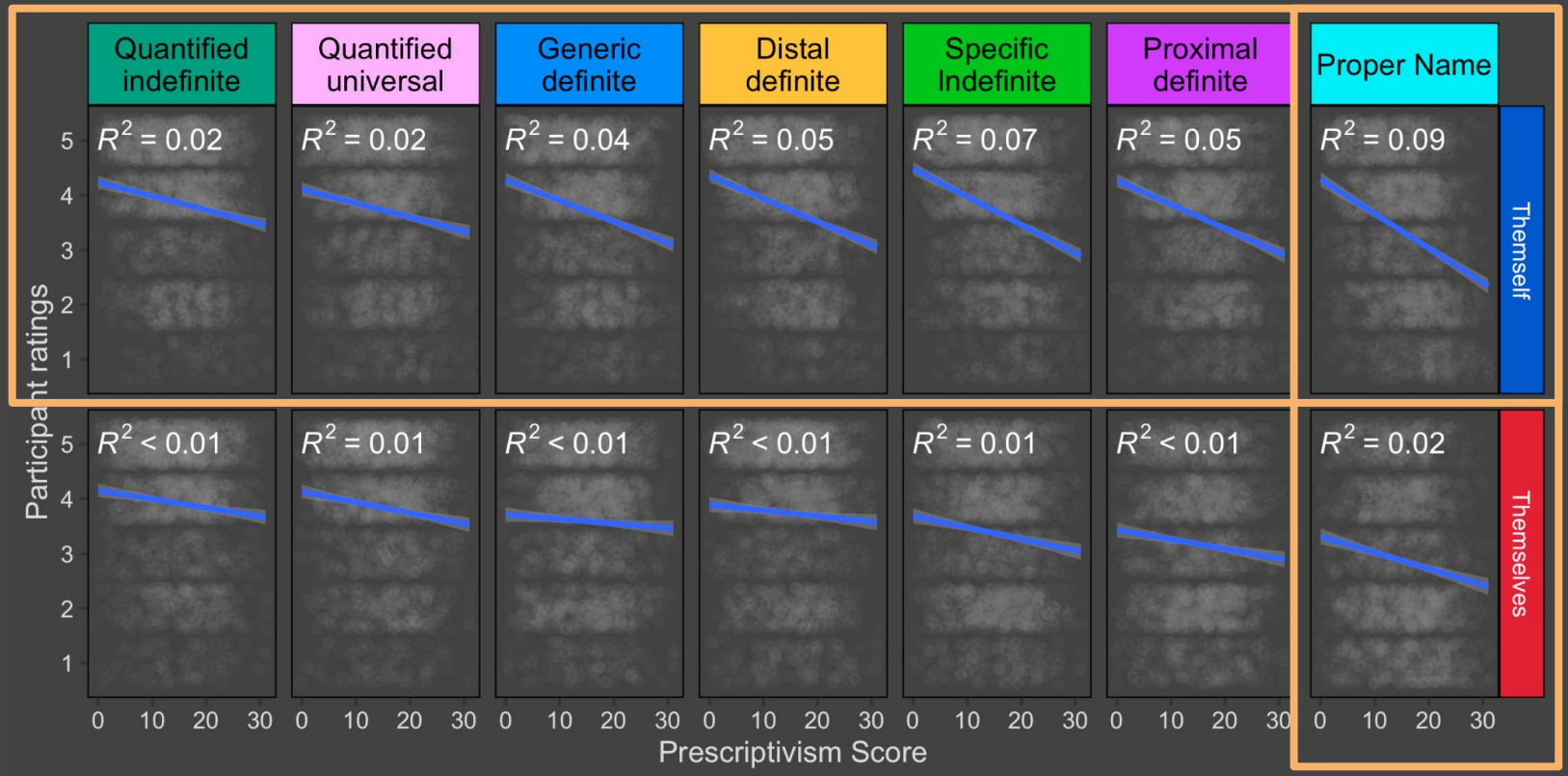


Are there dialects?

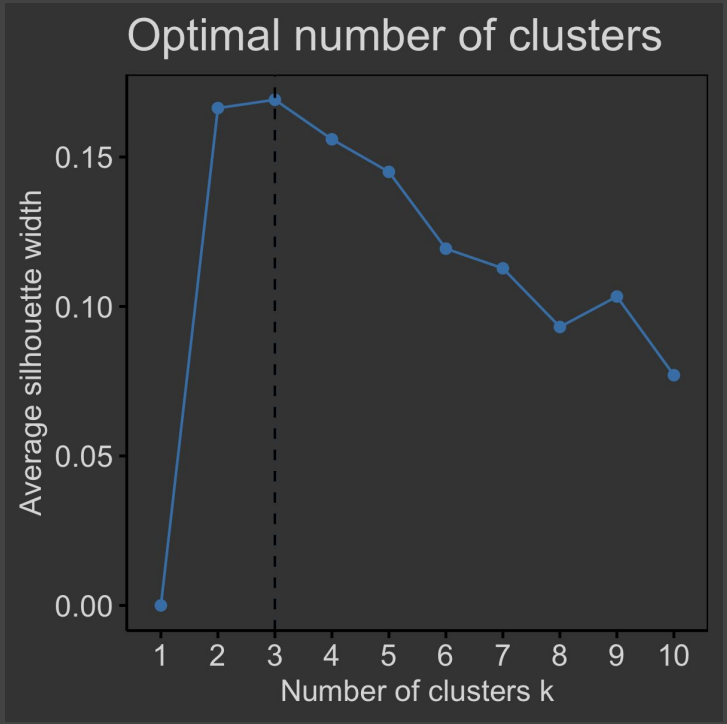
“K-groups”

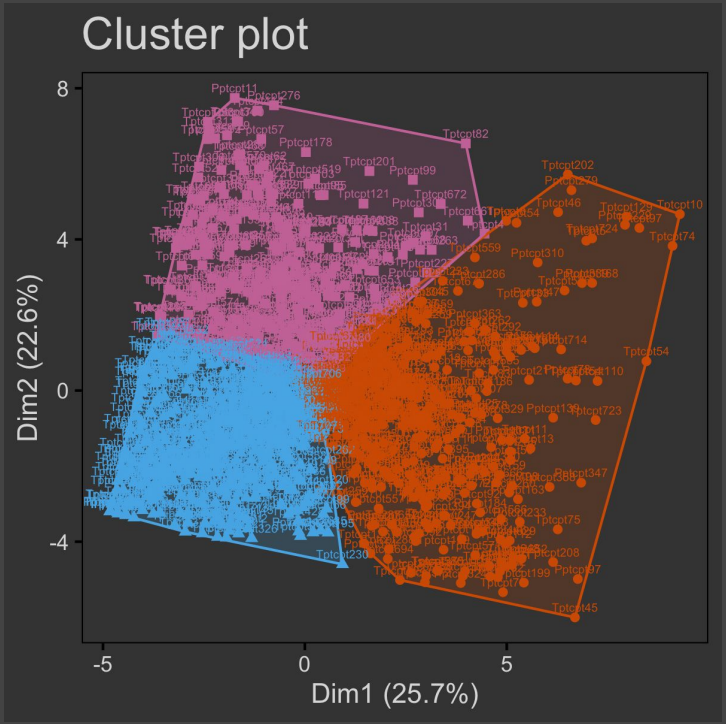
- Clusters of participants that emerge based on a Machine Learning algorithm

Basics of process:

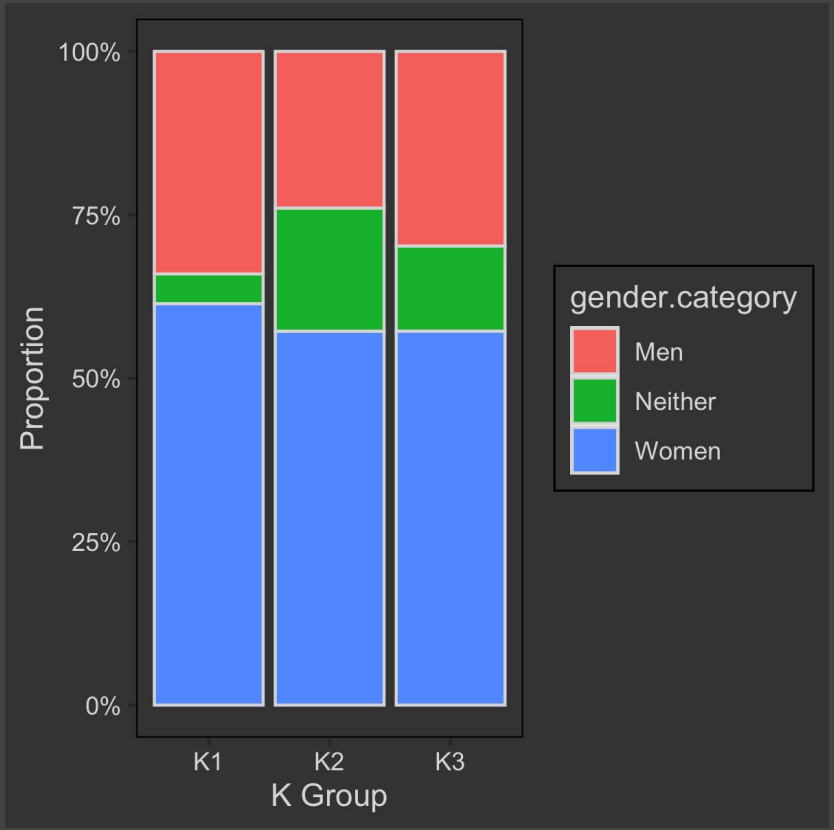
- **Input**: numerical ratings of sentences, grouped by participant
- **Algorithm**: unsupervised classification based on numerical means
- **Output**: grouped participants

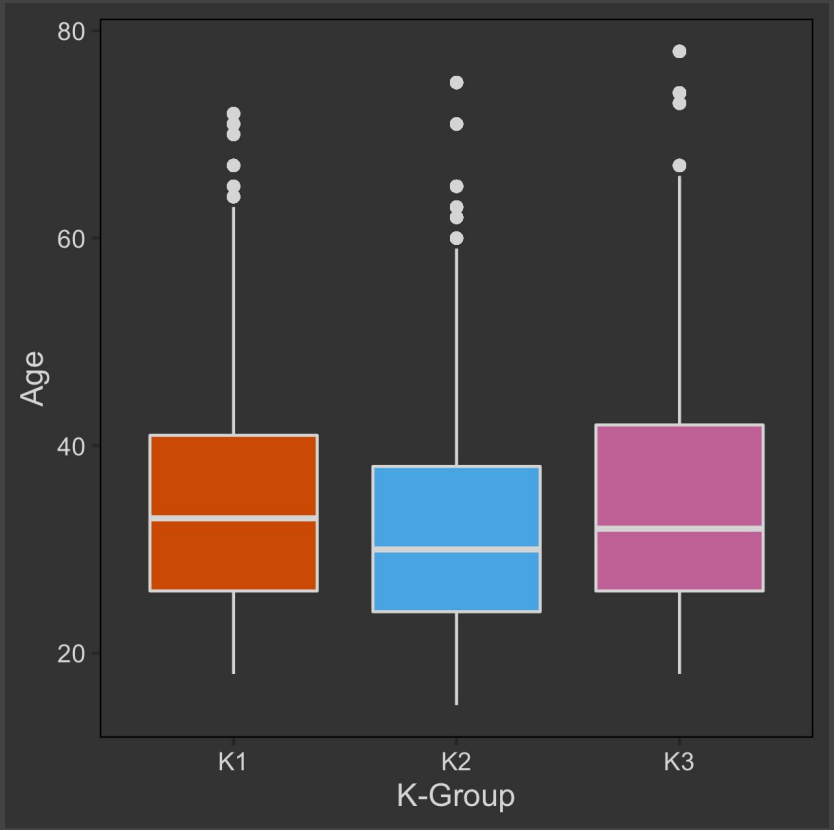
Results: k-groups





K-Groups... Who Are They?





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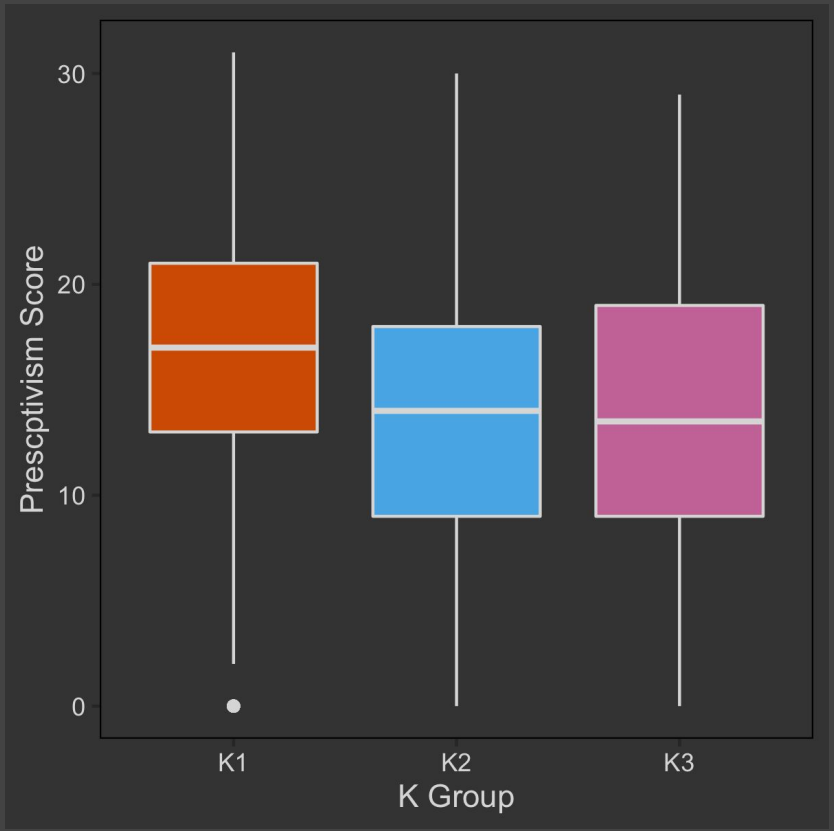
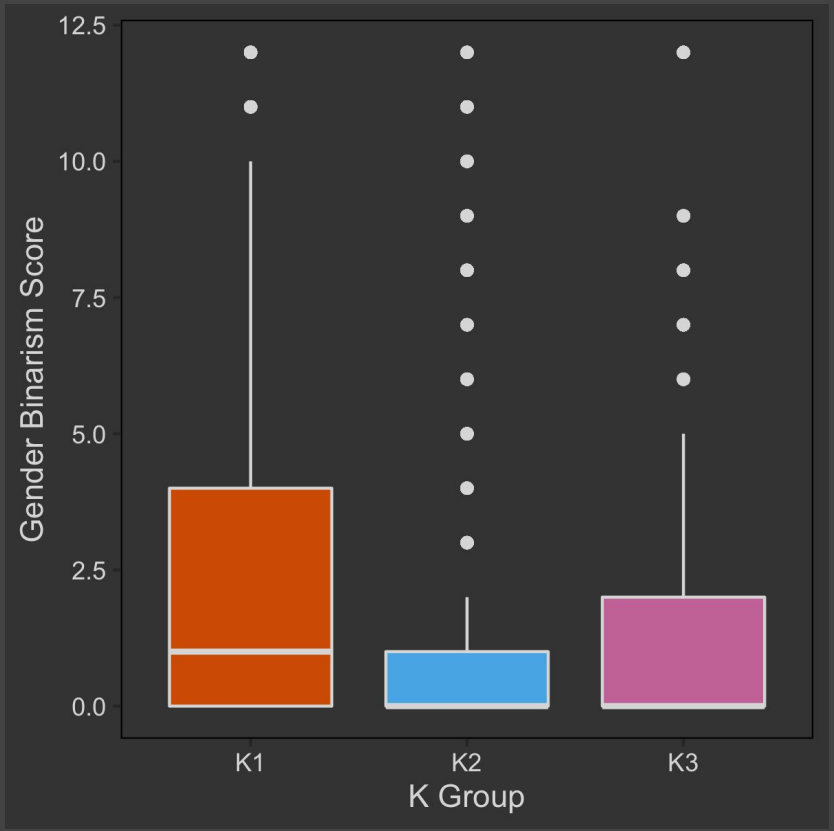
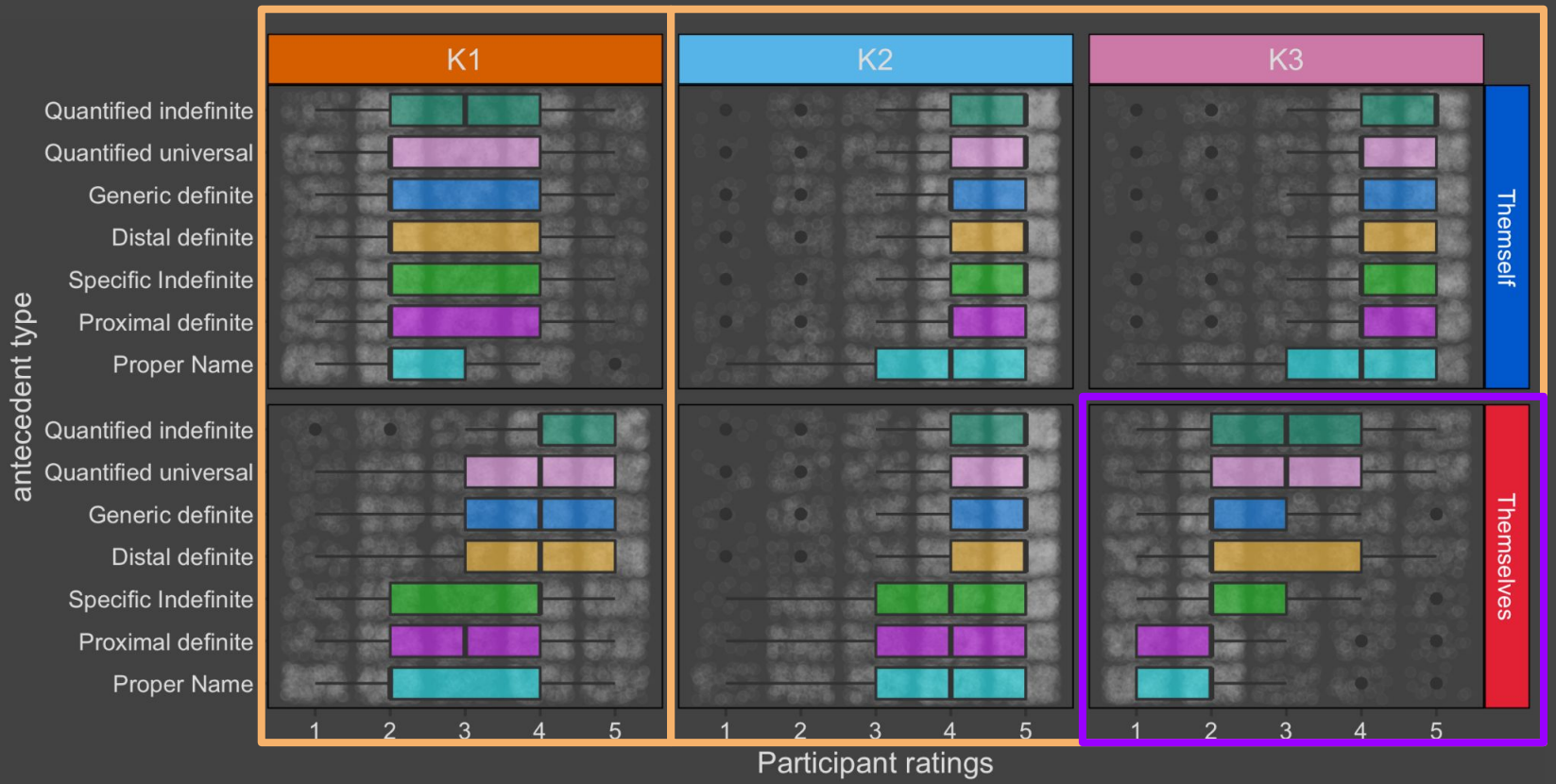




Results Divided by K-Groups: Grammatical Effects



BONUS: We're doing a follow-up!

This pilot task is ***exploratory*** and calls for more robust and methodologically sound experimental techniques

In Progress: Repeated design, with some changes

- Online survey using **PC Ibex** → open-source repository of materials
- Acceptability judgments using **continuous sliders** → sharper statistical analyses
- **Fillers and controls** → more confident in what's (un)acceptable
- **Latin square design** → everyone sees every condition in a balanced way

Results: ***PENDING***

Discussion

Return to Questions

RQ 1: How does **antecedent type** affect the ratings of *themself* and *themselves*?

H1a: *themself* > *themselves* with more specific antecedents
H1b: *themselves* > *themself* with less specific

- **As presupposed, acceptability of themself vs themselves depends on antecedent type**
  - **Overall very similar**
  - **Antecedents differ syntactically** (*functional structure*) **and pragmatically** (*specificity*)
- **Which is preferred when depends on dialect**
  - **H1a only true for K3**
  - **H1b only true for K1**

Return to Questions

RQ 2: what **speaker variables** (macrosocial categories; ideological beliefs) affect ratings of *themself* / *themselves*?

H2a: *themself* ↗ with {nonbinary, younger, less prescriptive, less gender binarist}
H2b: proper names antecedents (*for either*) ↗ with those folks

- ***Both confirmed*: age, prescriptivism, gender binarism, and gender all had significant effects on ratings *(in the direction predicted!)***
  - (Note that the social variables with the biggest effect on k-group are also the social variables that affected ratings [as in H2a,b])

Return to Questions

RQ3: are there clear or coherent **'dialect groups'** that align with how people rate *themself/ves* with different antecedents?

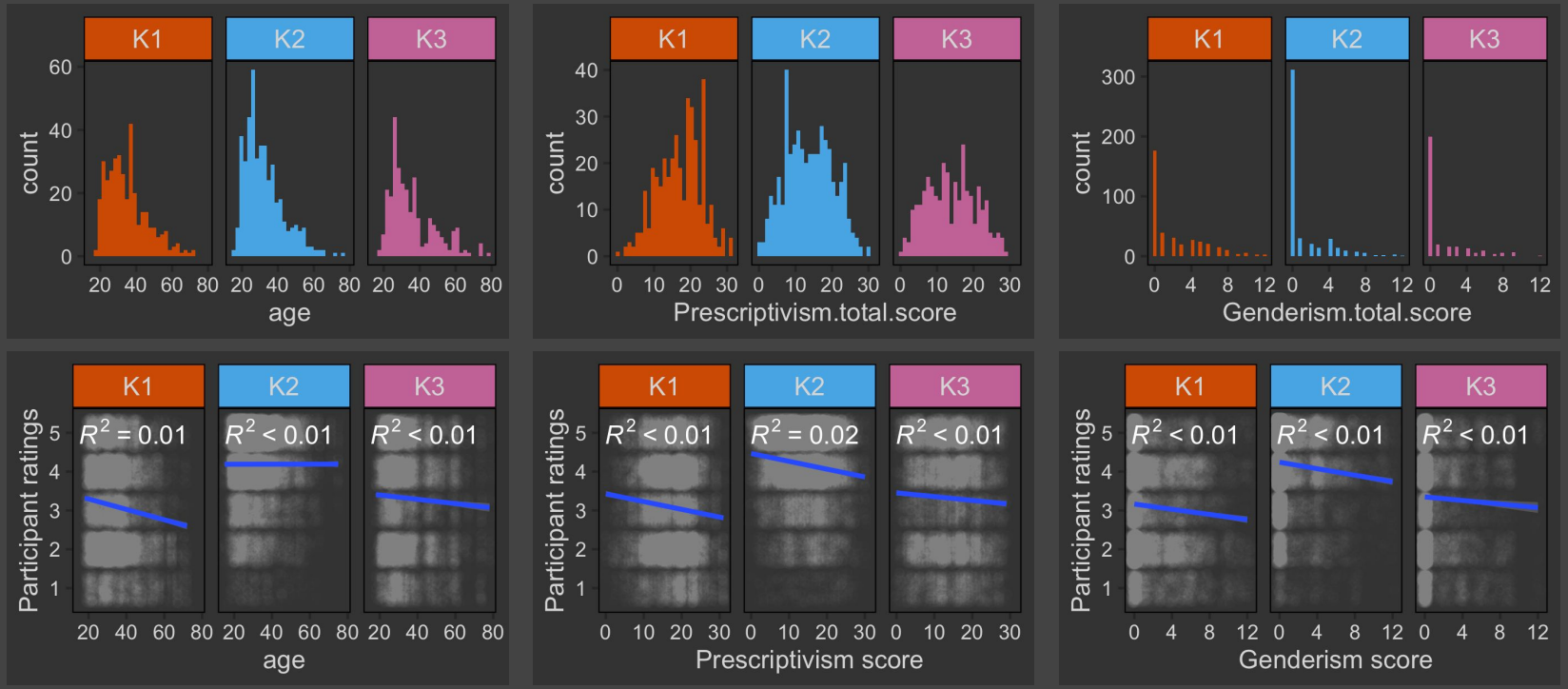
> **H3: speakers will divide into 3 dialect groups: conservative, intermediate, and innovative** ***(influenced by Konnelly & Cowper 2019's work on singular they)***

- ***We did find 3 groups — but along different dimensions***

K1	**Conservative**	Themself << Themselves	*(but proper name antecedents generally bad)*
K2	**Innovative (A)**	Themself ≈ Themselves	*(proper name antecedents had highest variability)*
K3	**Innovative (B)**	Themself >> Themselves	*(themselves is best with quantificational antecedents)*

Bigger Discussion: Grammar and Demographics

- K-group membership is independent of demographic variables



Bigger Discussion: Grammar and Demographics

- There are different grammars of English, varying on how to deal with [sg]-anteceded genderless 3rd person reflexives

	K1		K2		K3	
	Themself	Themselves	Themself	Themselves	Themself	Themselves
Quantified indefinite	3	4	5	5	5	3
Quantified universal	2	4	5	5	4	3
Generic definite	2	4	4	5	4	2
Distal definite	2	4	5	5	4	2
Specific Indefinite	2	4	5	4	4	2
Proximal definite	2	3	4	4	4	2
Proper Name	2	2	4	4	4	2

Bigger Discussion: Grammar and Demographics

- There are **different grammars of English**, varying on how to deal with [sg]-anteceded genderless 3rd person reflexives

    - Expected for language change in progress where **input can underdetermine plausible grammatical systems** in learner
        - *(see Conrod 2019's findings about change in progress for singular they)*

    - Analysis: **Differing in reflexive phi-feature matching** (microparameter settings / constraints formalizations)
        - *(see Ahn 2019's findings about other cases of reflexive phi-mismatches)*

Points of Grammatical Variation

2 parameters: one on *they* and one on *-self*

	Can I use a pronoun w/ no [gender] (*they*) with a definite specific antecedent?	Can I use *-self* when there's no [sg] feature on the pronoun (*them*)?
K1	obligatory for gendered antecedents	[SG] *-self* requires [SG] on the pronoun
K2	—*N/A: no requirements*—	—*N/A: no requirements*—
K3	—*N/A: no requirements*—	[SG] antecedent requires [SG] on *-self*

PREDICTION: K1 might actually contain two groups – a group who can tolerate *ourself* (a pronoun lacking [sg] + *-self* is okay), and another group who cannot. Why? Because K1 is currently defined only by tolerance of singular *they*, not *-self/ves*

Takeaway Messages

- **Methodological takeaway**
  - With sufficient ratings + sociolinguistic data, **K-means clustering can help disentangle** what variation is due to…
    - linguistic (grammatical) influences,
    - social influences,
    - or interactions between them

Takeaway Messages

- **Grammatical takeaways**
  - English reflexive phi-matching **is pretty complex** (and in some ways variant across dialects!)
    - Phi-matching between reflexive pronoun and antecedent → *Can a pronoun have fewer features than its antecedent? Sometimes!*
    - Phi-matching between pronoun and *-self* inside self-reflexives → *Can the* -self *have more features than the pronoun it's attached to? Sometimes!*

Stay Tuned!

- Other methodologies in this domain:
  - Real-time methodology (e.g. maze tasks)
  - EEG / neurolinguistic measures with *self/selves*
  - Picking apart active acceptability (“I would say this”) and passive acceptability (“I would expect others to say this”)
- Other reflexive anaphors (e.g. *theirself, theyself*, &c)
- Explicit model of feature-matching in binding

Thank you!

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