



# Applying MTME to Panel Conditioning: Social desirability, scale learning, and attitude crystallization among fresh and experienced respondents

Bella Struminskaya & Alexandru Cernat

# Panel Conditioning

- Changes in attitudes & behavior or changes in reporting due to participation in previous survey rounds (Kalton, Kasprzyk, & McMillen, 1989; Waterton & Lievesley, 1989)
- Advantageous:
  - Increased familiarity → respondents provide more truthful answers, fewer „Don't knows“ (Bailar 1975, Binswanger et al. 2013, Waterton & Lievesley 1989)
- Disadvantageous:
  - Negative answers to filter questions to reduce burden (Duan et al. 2007, Eckman et al. 2014, Warren & Halpern-Manners 2012)

# Mechanisms

- Learning the *content* of questionnaires
  - Cognitive stimulus hypothesis
    - Attitude crystallization
    - Increased opinionation (Don't know reduction)
  - Increased satisficing (straightlining, skipping filter follow-up questions)
- Learning the *rules* that govern the interview
  - Social desirability reduction due to trust in the survey organization
  - Scale learning

# Prior studies

- Mixed results in the literature: existence, direction & magnitude
  - No evidence (e.g., Axinn et al. 2015, Clinton 2001, Dennis 2001)
  - Only some for question types (e.g., Binswanger et al. 2013, Kruse et al. 2009, Toepoel et al. 2009)
- Multitude of study designs
- Few randomized experiments that allow separating learning the content from learning the procedure, true changes from panel conditioning

# Mechanisms

- Learning the *content* of questionnaires
  - Cognitive stimulus hypothesis
    - Attitude crystallization
    - Increased opinionation (Don't know reduction)
  - Increased satisficing (straightlining, skipping filter follow-up questions)
- Learning the *rules* that govern the interview
  - Social desirability reduction due to trust in the survey organization
  - Scale learning

# Research questions

1. Are attitudes becoming more stable over time?
2. Is there a social desirability reduction over time?
3. Is there panel conditioning due to scale learning?
4. How do these mechanisms compare for fresh and trained respondents?

# Hypotheses

Reliability is expected to increase over the waves (crystallization)

Social desirability is expected to decrease over the waves

Getting scales with the same direction is associated with higher reliability

Trained respondents will have higher reliability (crystallized attitudes) and lower social desirability

# Data

- Waves 7-9 of UK Understanding Society Innovation Panel, f2f & online
- Randomized experiment
  - Response scales: agree/disagree 2-point vs. 11-point
  - Social desirability: positively vs. negatively worded questions
  - Scale direction: Agree-Disagree or Disagree-Agree
- Asked twice within each wave

The UK should allow **more** people of the same race or ethnic group as most British people to come and live here  
UK should allow **more** people of a different race or ethnic group from most British people to come and live here  
UK should allow **more** people from the poorer countries outside Europe to come and live here  
It is generally **good** for UK's economy that people come to live here from other countries  
UK's cultural life is generally **enriched** by people coming to live here from other countries  
UK is made a **better** place to live by people coming to live here from other countries



# Modeling approach

Effects of social desirability, crystallization & scale learning

1) Overall: Multitrait Multierror (MTME) separately for each wave

- N (wave 7) = 2,314
- N (wave 8) = 2,246
- N (wave 9) = 2,154

2) MTME on pooled data

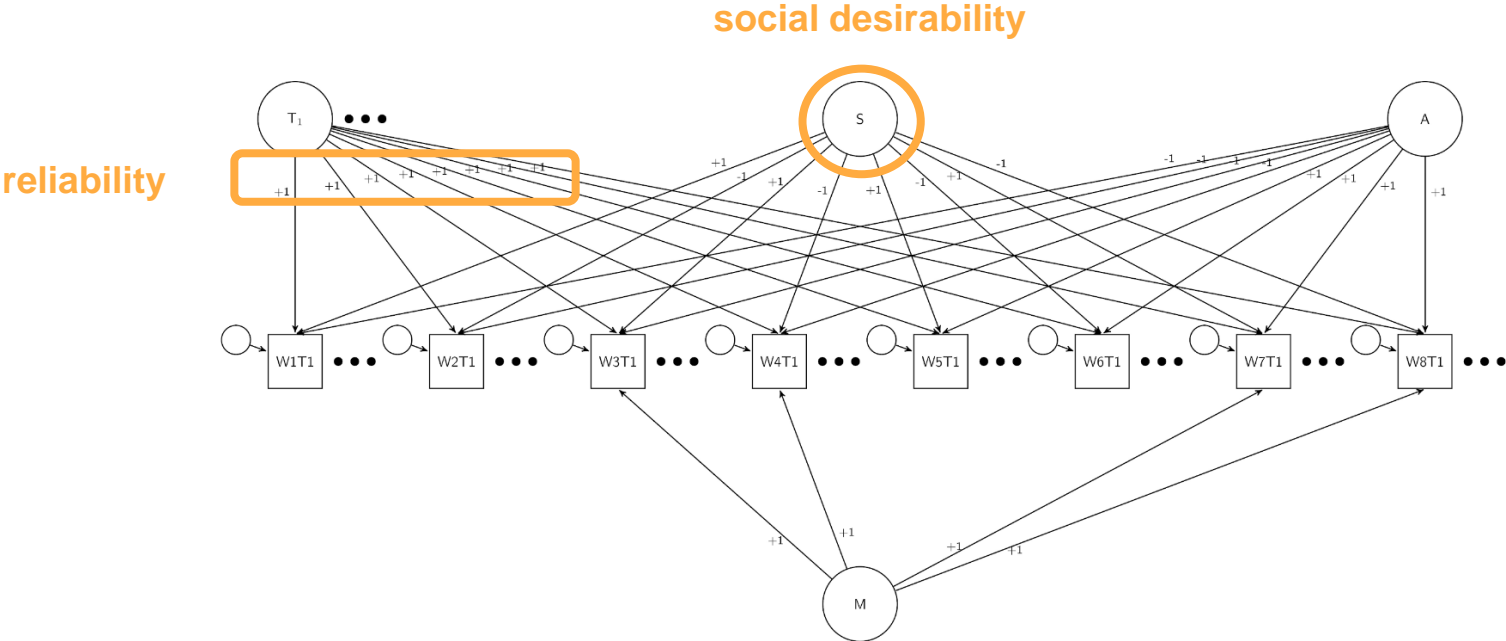
Comparing fresh and trained:

- N (fresh) = 1,665
- N (trained) = 5,063

Scale direction: 5-6 times the same (e.g. Agree-Disagree) vs. fewer

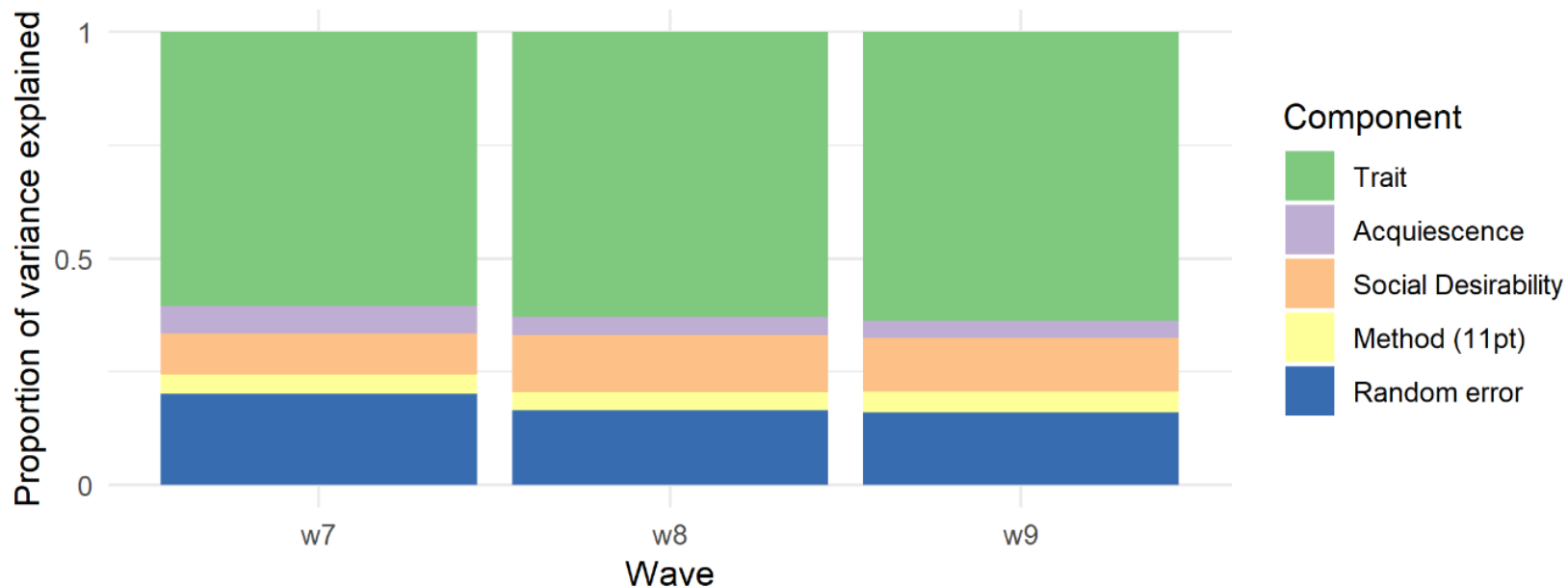
- N (same direction) = 1,533
- N (different direction) = 5,181

# Method



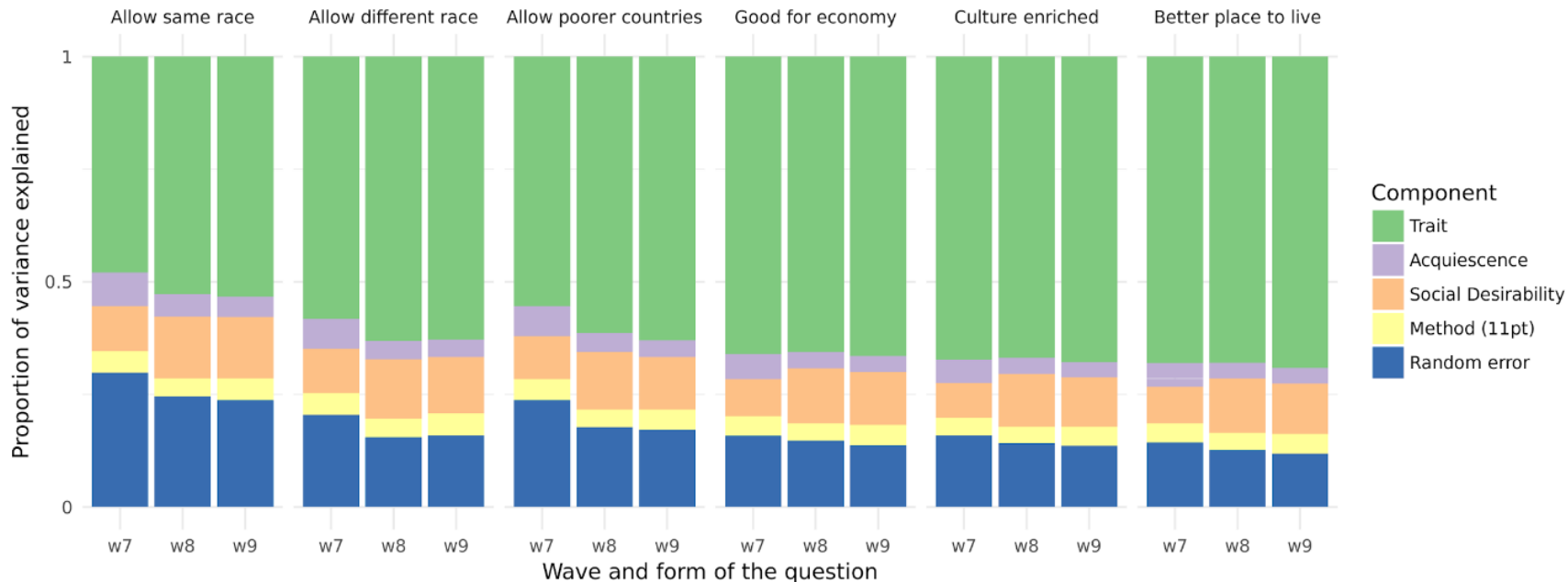
# Results: social desirability & crystallization

Variance decomposition by wave



# Results: Social desirability & crystallization

## Variance decomposition by variable

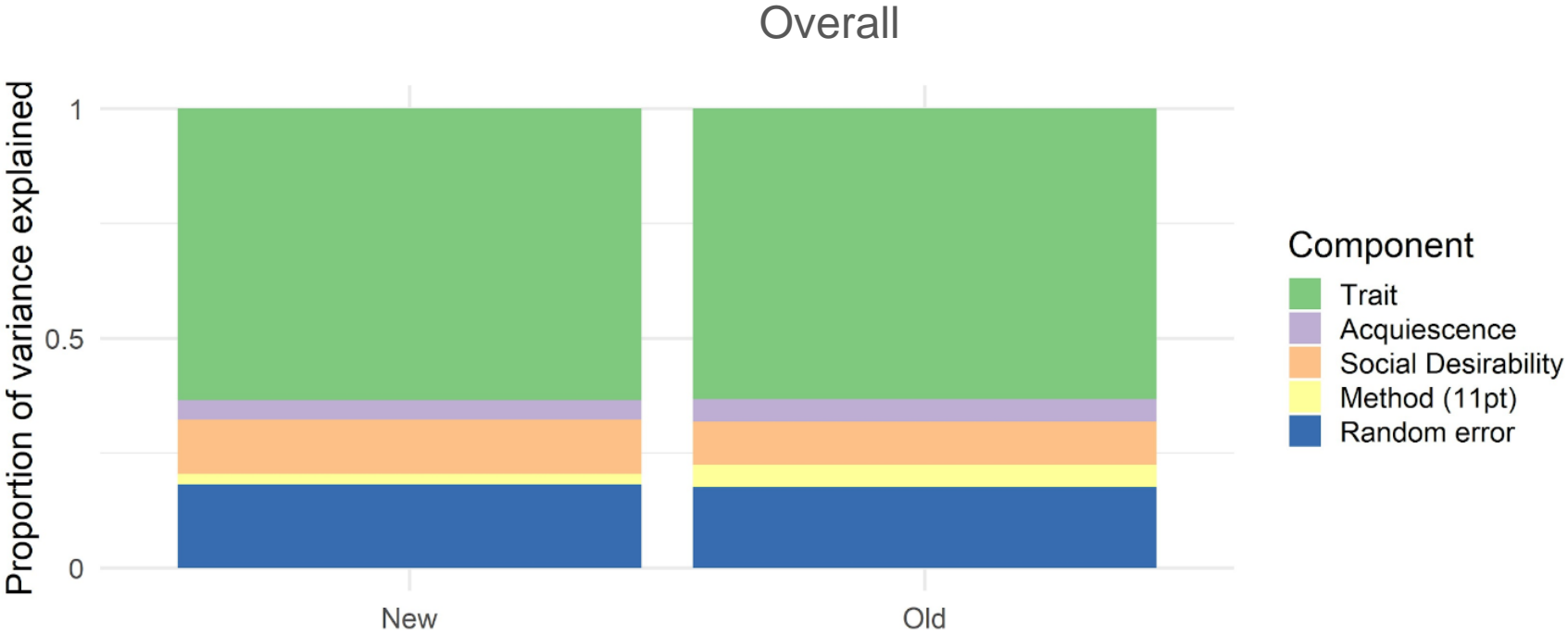


# Results: Social desirability (cont.)

Differences in mean social desirability

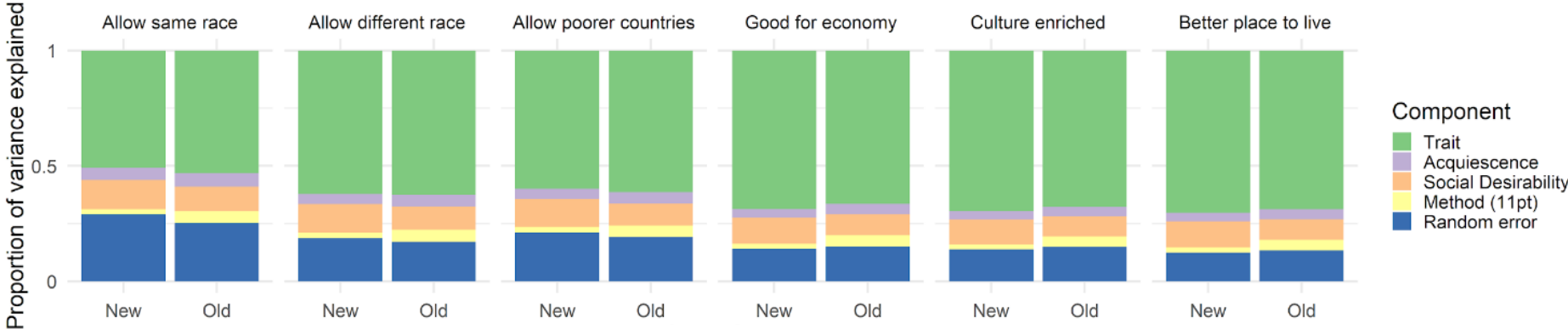
	Mean	Upper CI	Lower CI
Wave 7	-0.18	-0.37	-0.09
Wave 8	-0.13	-0.25	-0.06
Wave 9	-0.30	-1.24	-0.12

# Results: Fresh and trained respondents

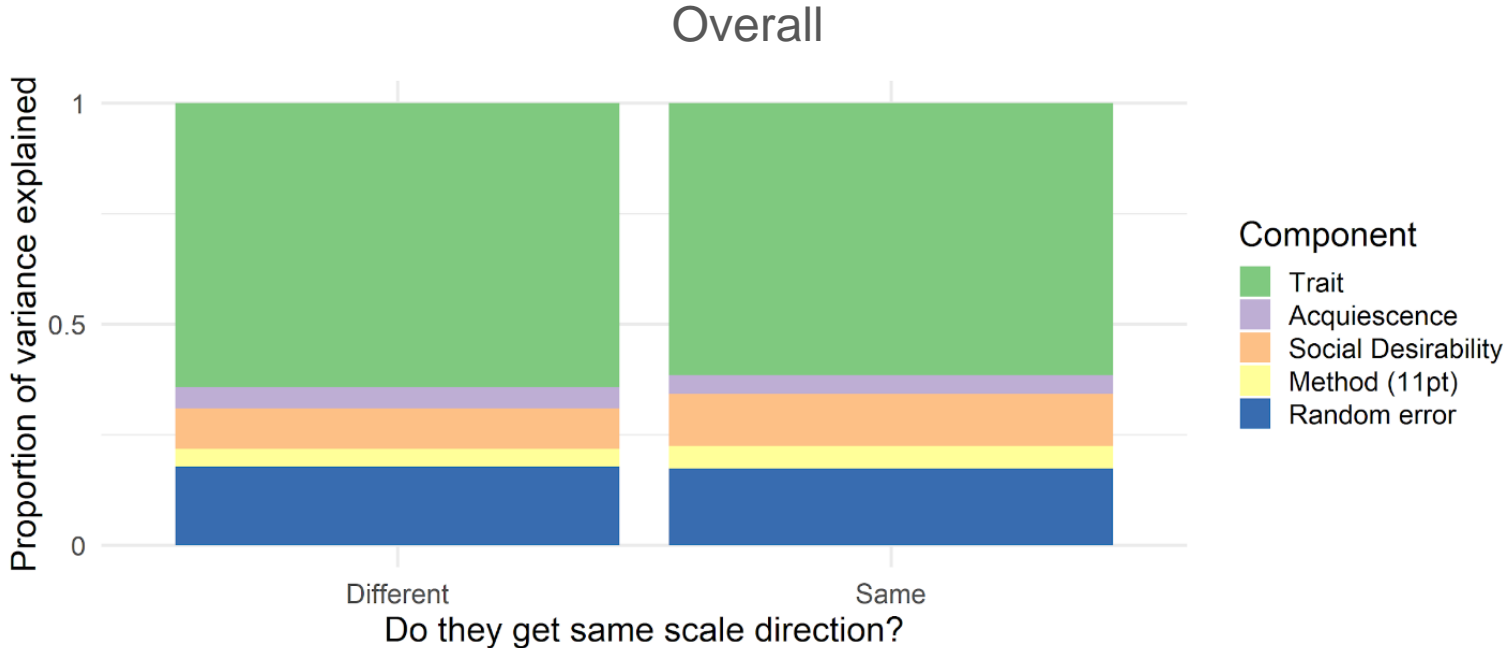


# Results: Fresh and trained respondents

By variable



# Results: Scale direction

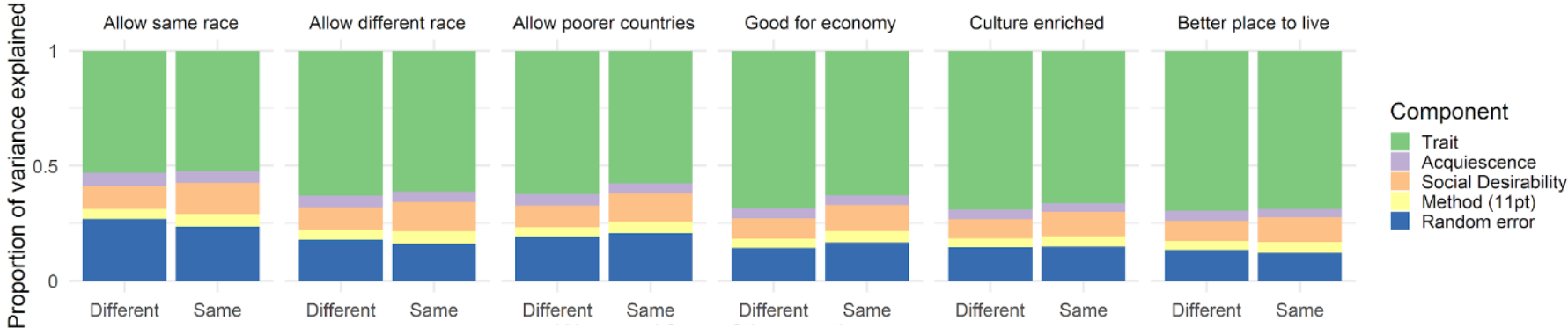


Same direction = getting the same direction (A-D or D-A) 5 times



# Results: Scale direction

By item



# Summary & next steps

- No evidence of social desirability reduction
- Some weak evidence for crystallization with differences by items
- Trained respondents show slightly lower social desirability (not significant) and no difference in random error (evidence of crystallization)
  
- Estimation issues with scale learning
- Control for attrition
- Take clustering into account for pooled models
- Mode effects (interviewer- vs. self-administered)

# Questions?

[b.struminskaya@uu.nl](mailto:b.struminskaya@uu.nl)

[alexandru.cernat@manchester.ac.uk](mailto:alexandru.cernat@manchester.ac.uk)