

The Storybook Image of the Scientist



Coosje Veldkamp, Chris Hartgerink, Marcel van Assen, & Jelte Wicherts
WCRI 29-05-2017

The storybook image of the scientist: research questions

Do **lay people** indeed believe in this image?

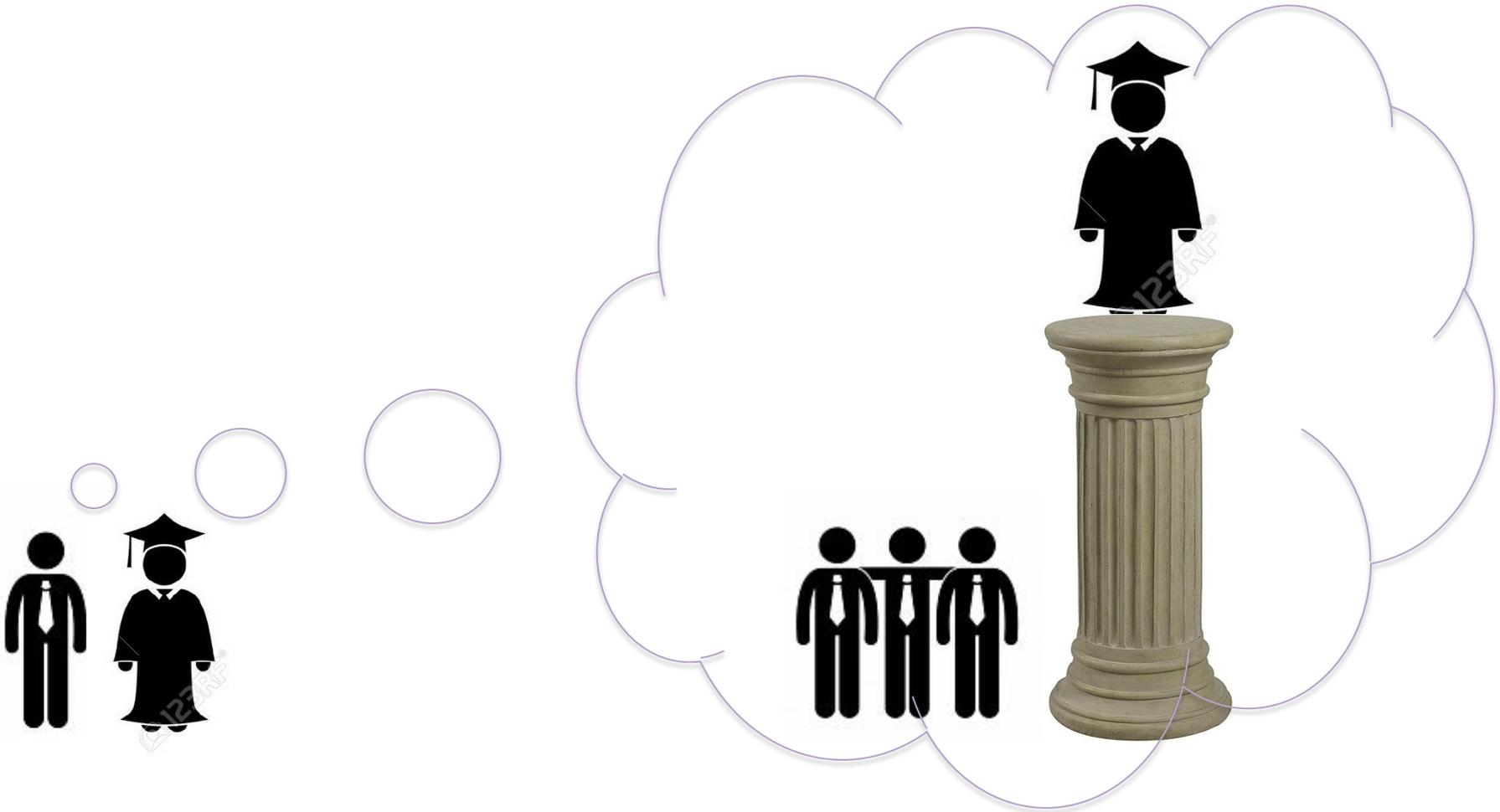
Do **scientists themselves** believe in this image?

Are some scientists believed to fit the storybook image better than other scientists?

The storybook image of the scientist: study 1

Scientists versus other highly-educated people

Hypothesis



The storybook image of the scientist: study 1

Scientists versus other highly-educated people

Methods:

Online survey among:

- 1088 scientists from across the globe (**331** from the USA)
- **312** highly-educated non-scientists from the USA
- 36 science Nobel Prize laureates (extra, descriptive only)

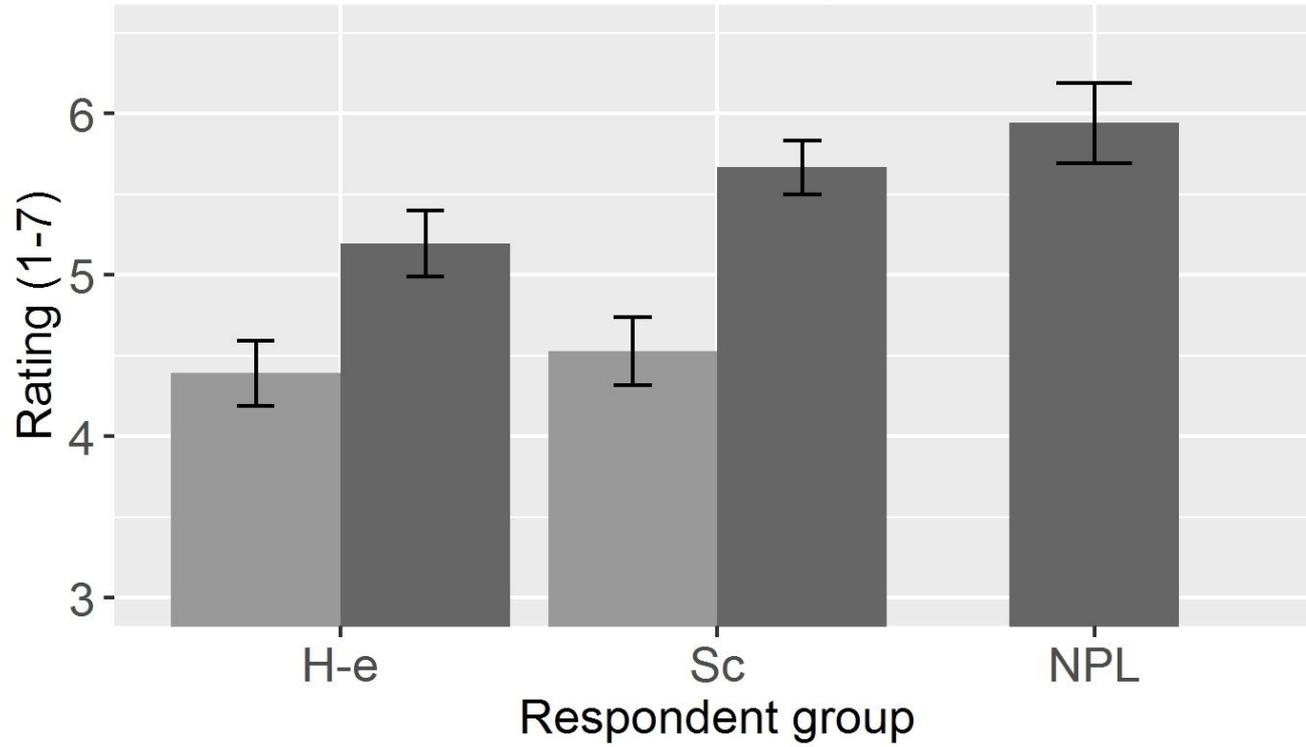
Random assignment to one of two conditions:

- Statements about scientists
- Statements about highly-educated people

Examples:

- A [scientist] / [highly-educated person] does not commit fraud in his/her work
- A [scientist] / [highly-educated person] exhibits little emotionality with respect to his/her beliefs

Integrity

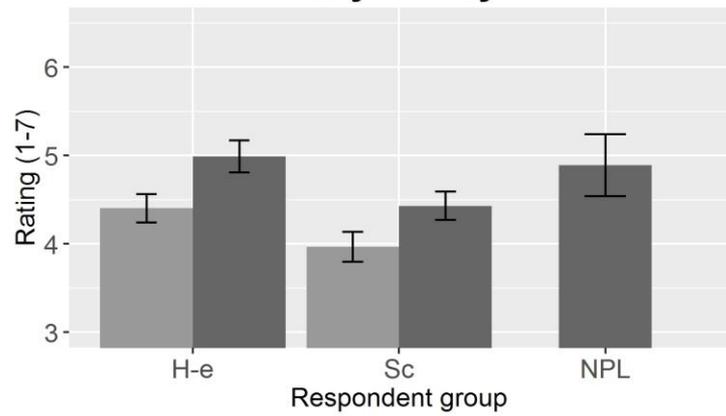


Target

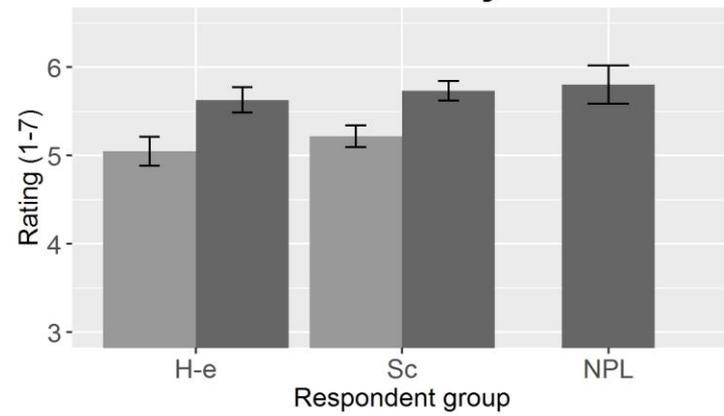
■ A Highly-Educated person

■ A scientist

Objectivity



Rationality

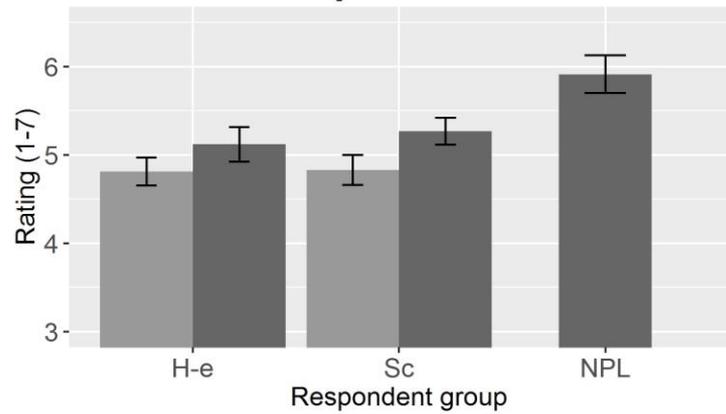


Target

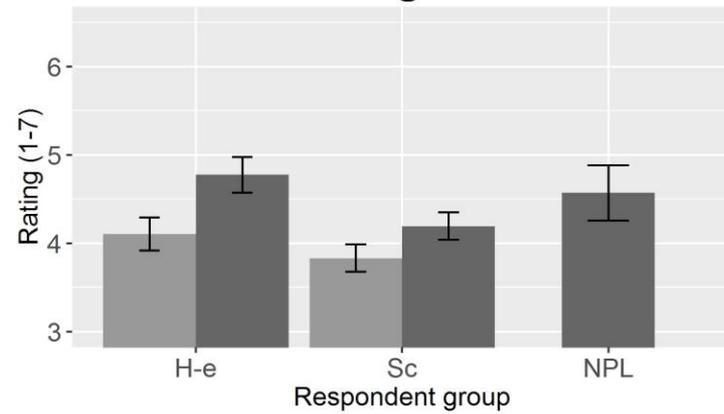
A Highly-Educated person

A scientist

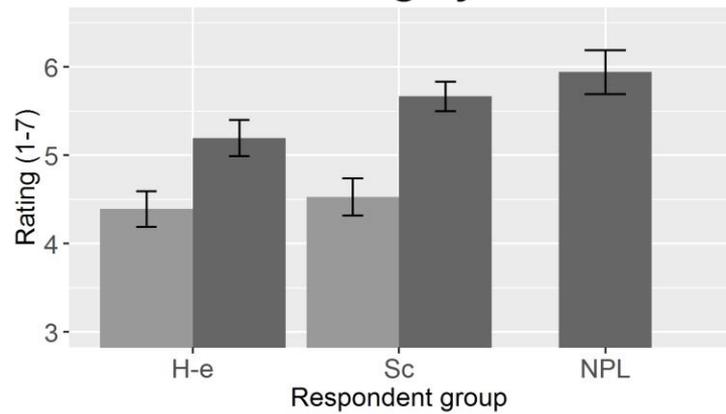
Openness



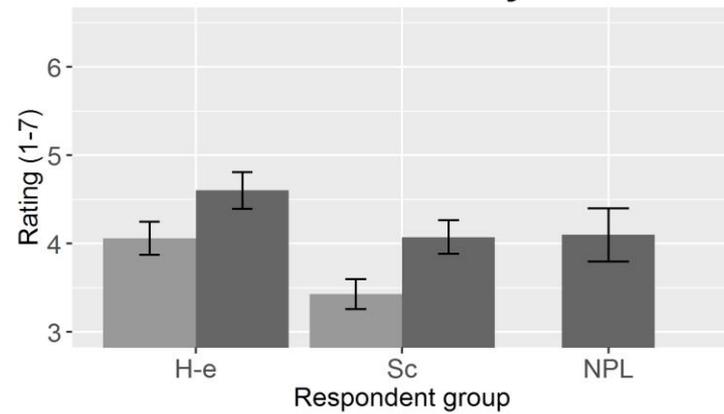
Intelligence



Integrity



Communality



The storybook image of the scientist: study 2

Scientists versus other highly-educated professionals

Methods:

Online survey among:

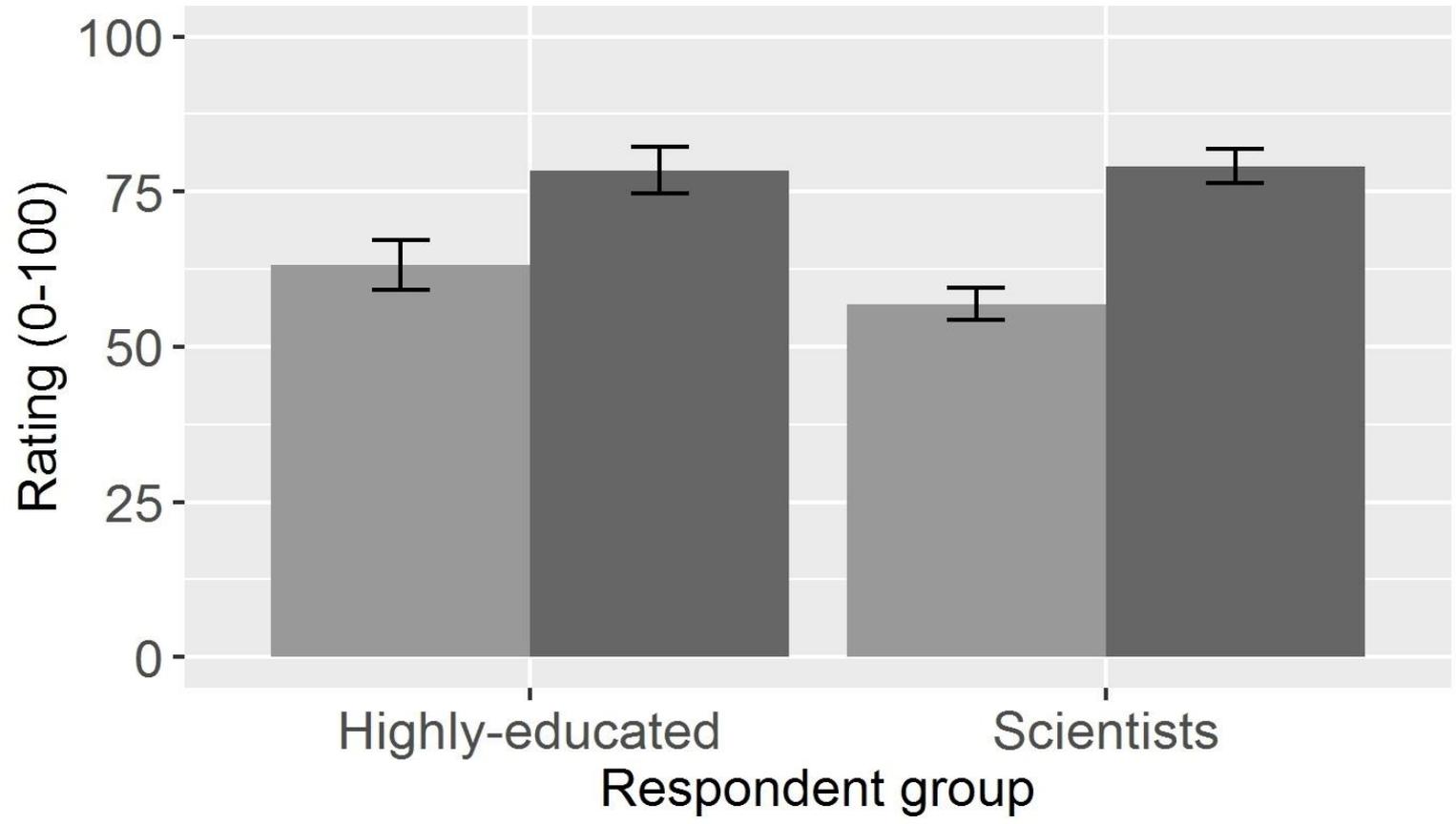
- 404 scientists from across the globe (**111** from the USA)
- **75** highly-educated non-scientists from the USA

Rating

- Scientists
- 9 other highly-educated professions
(lawyers, politicians, journalists, medical doctors, accountants, army-lieutenants, bankers, judges, and detectives)

*(9 non-scientist professions **pooled in analyses**: 2 x 2 mixed design)*

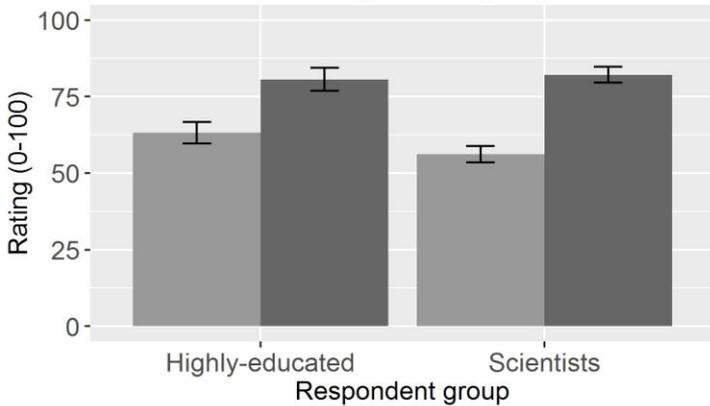
Integrity



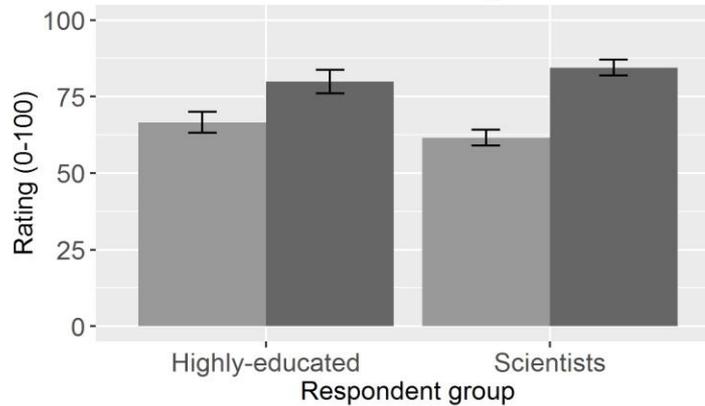
Target

- Other professions
- Scientists

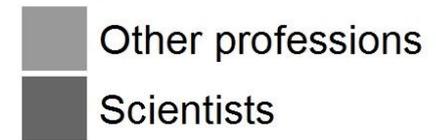
Objectivity



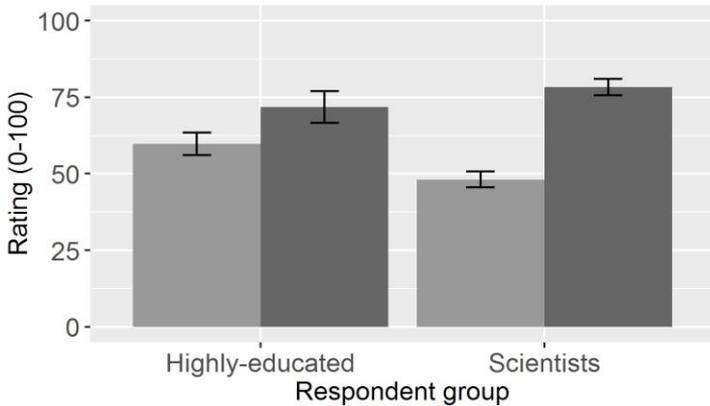
Rationality



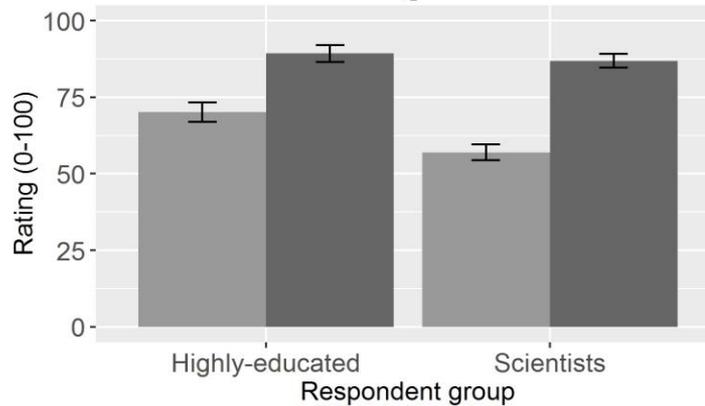
Target



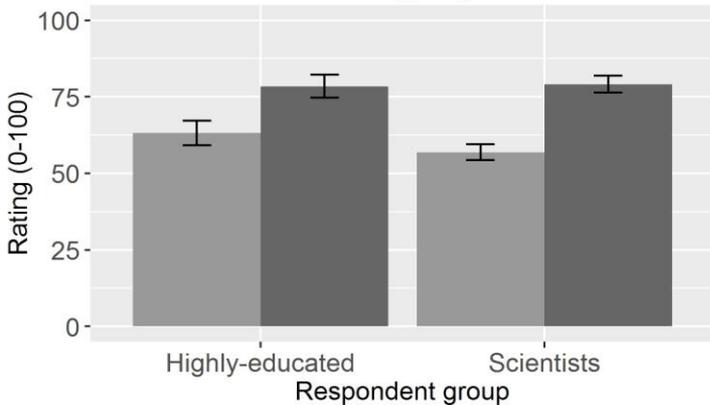
Open-mindedness



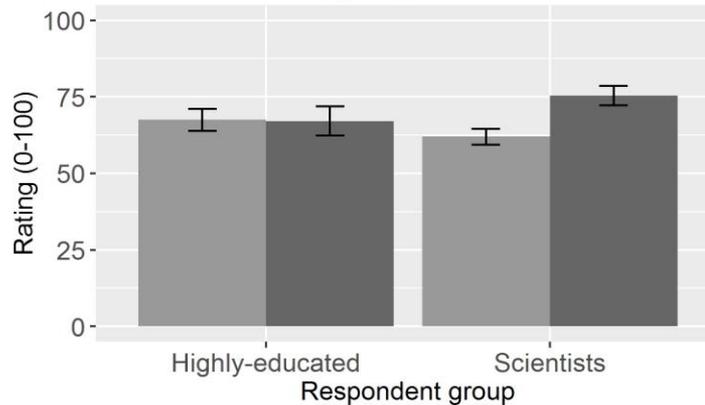
Intelligence



Integrity



Competitiveness



The storybook image of the scientist

Question that remains after studies 1 and 2:

Some scientists better than other scientists?

The storybook image of the scientist: study 3

professional level

Hypothesis



The storybook image of the scientist: study 3

professional level

Method:

Online survey among:

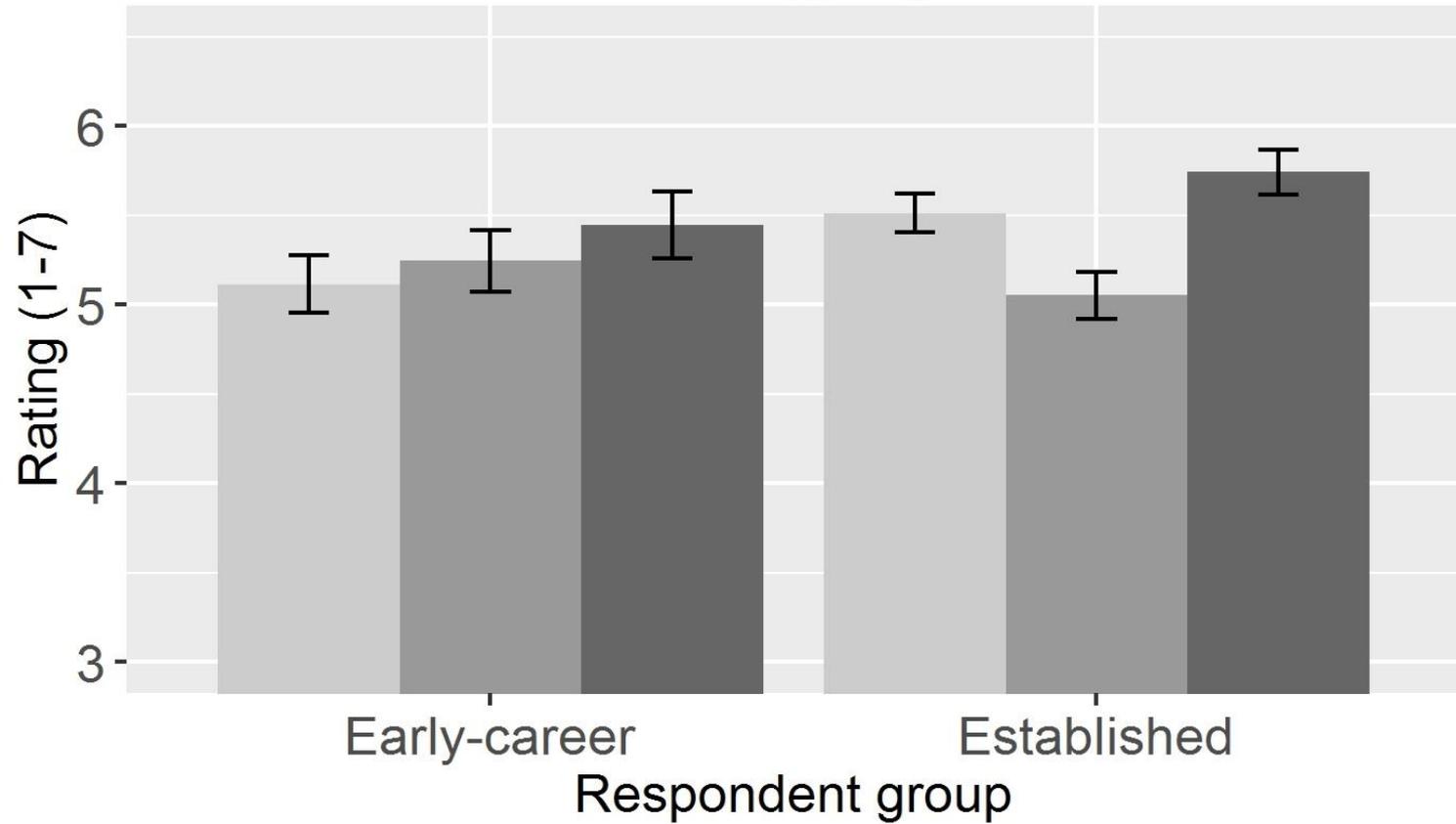
- 515 early-career scientists (PhD < 10 years & no tenure)
- 903 established scientists (PhD ≥ 10 years & tenure)

Random assignment to statements about:

- PhD-students
- Early-career scientists
- Established scientists

→ 2 x 3 between-subjects design (originally 3x3 but too few PhD students in sample)

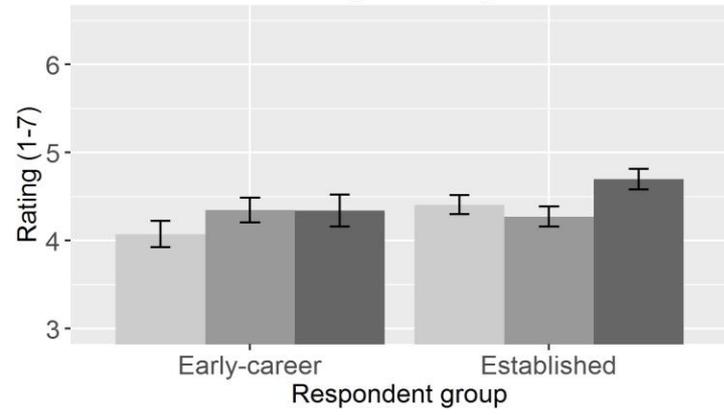
Integrity



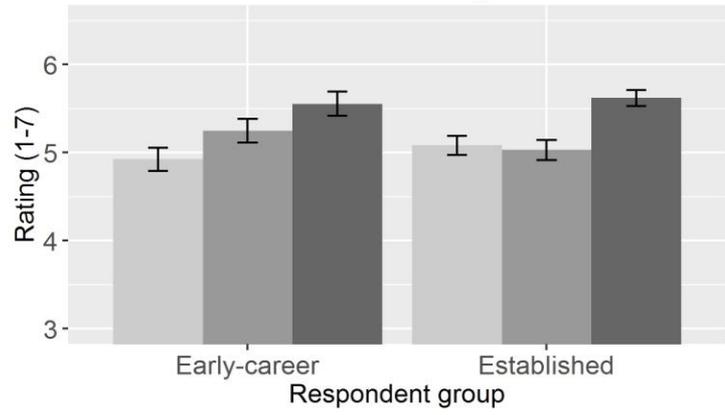
Target

- PhD Students
- Early-career Scientists
- Established Scientists

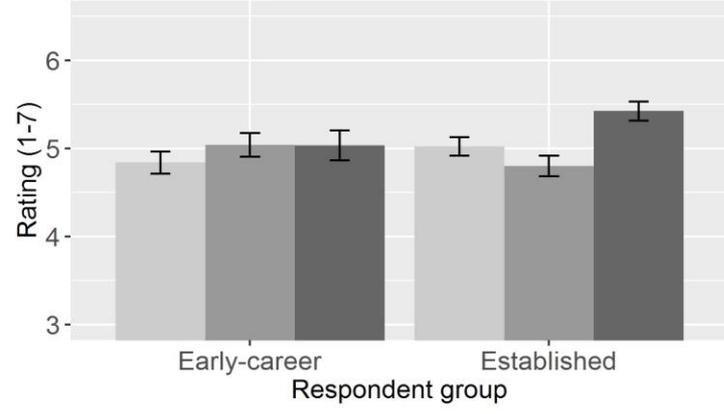
Objectivity *



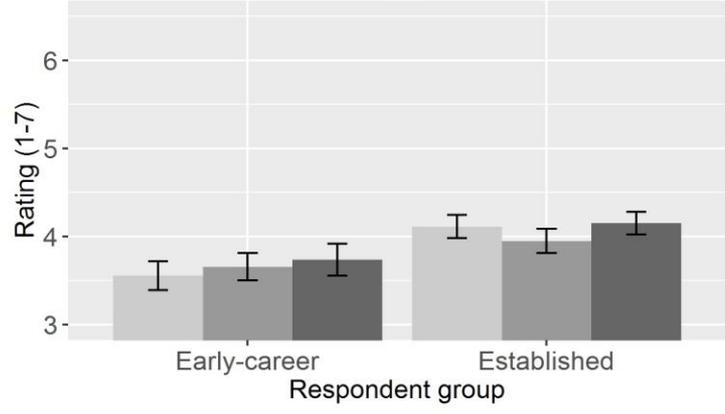
Rationality *



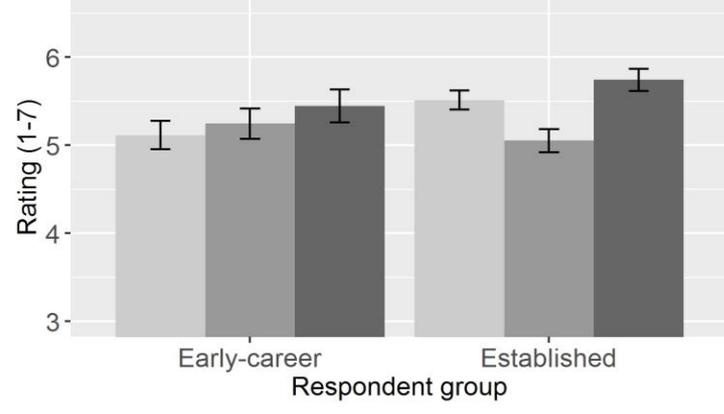
Open-mindedness *



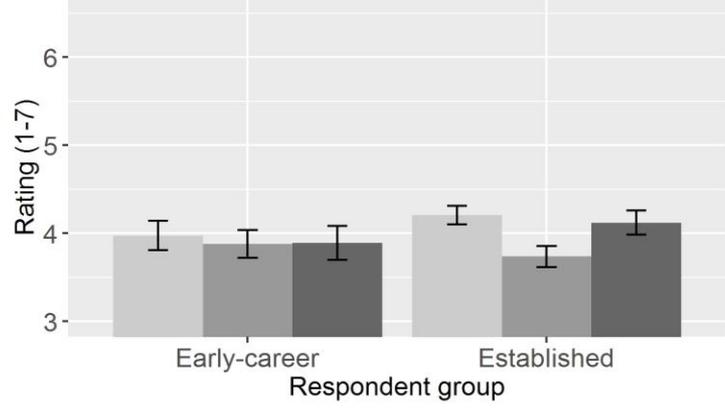
Intelligence



Integrity *



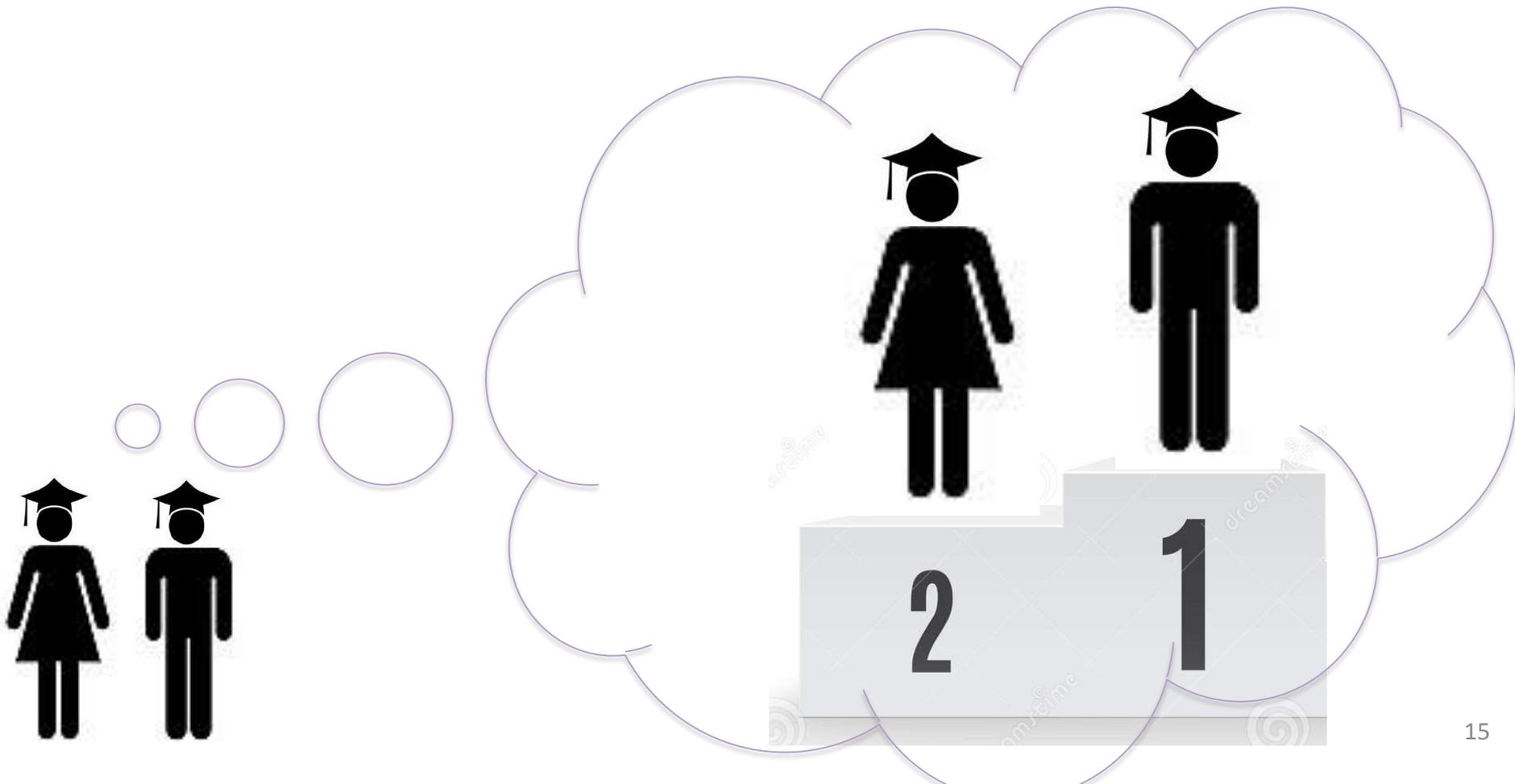
Communality



The storybook image of the scientist: study 4

gender

Hypothesis based on the stereotype of the male scientist



The storybook image of the scientist: study 4

gender

Method:

Online survey among:

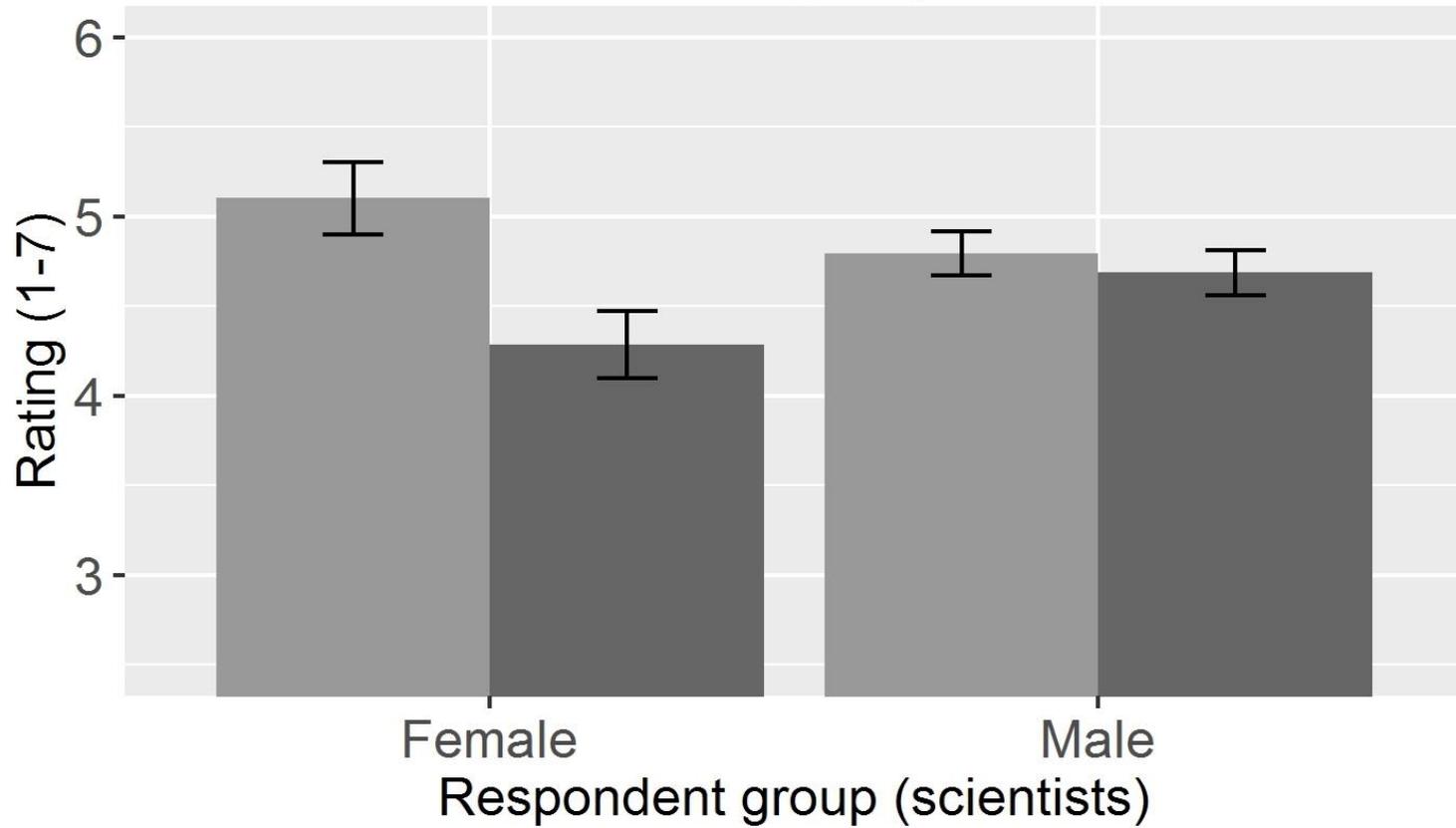
- 186 female scientists
- 711 male scientists

Random assignment to:

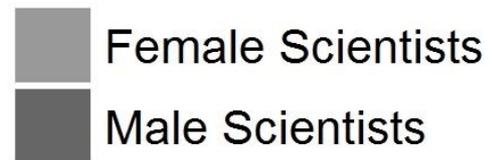
- Statements about female scientists
- Statements about male scientists

→ 2 x 2 between-subjects design

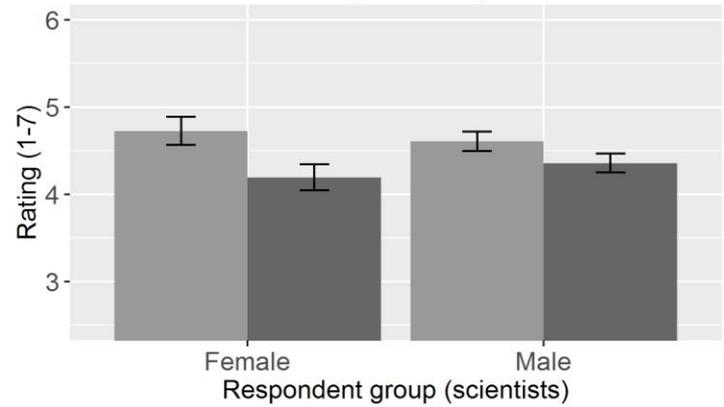
Integrity



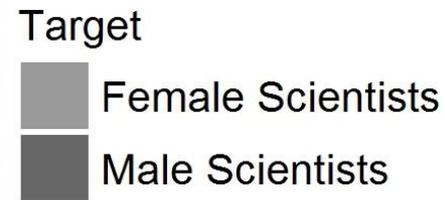
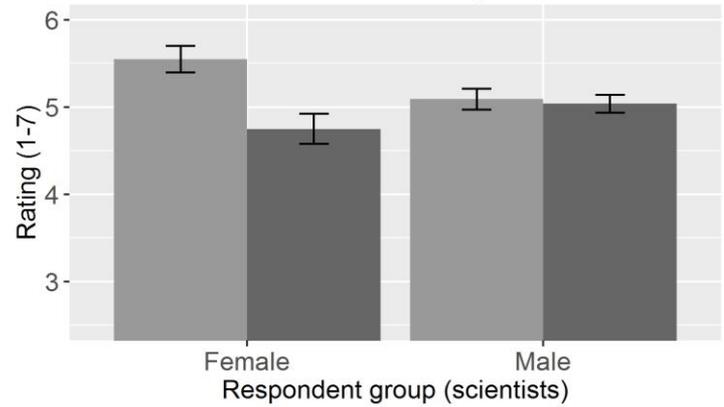
Target



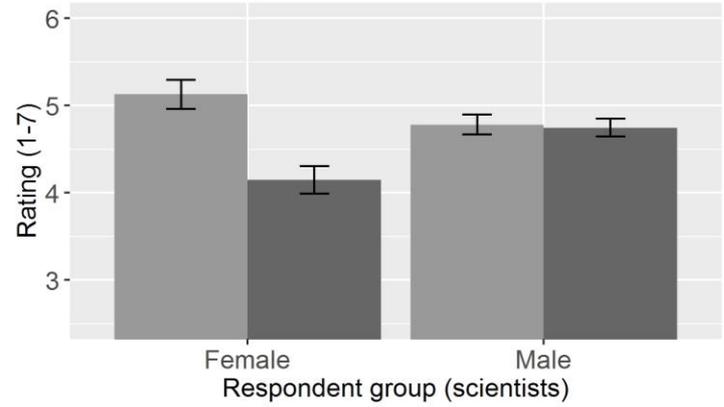
Objectivity



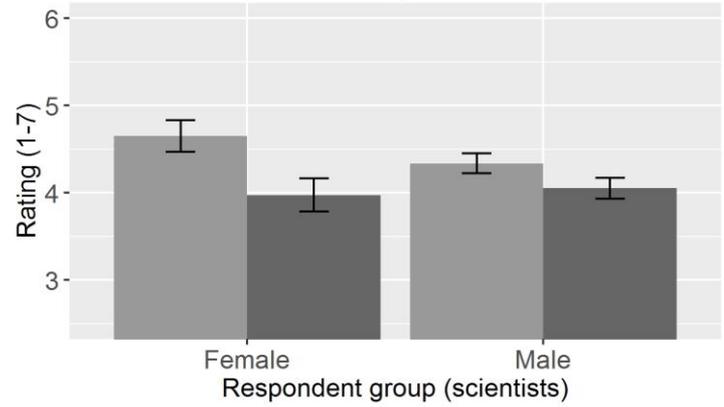
Rationality *



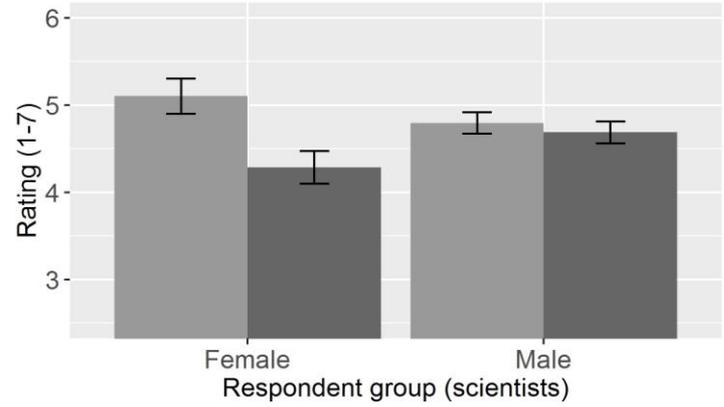
Open-mindedness *



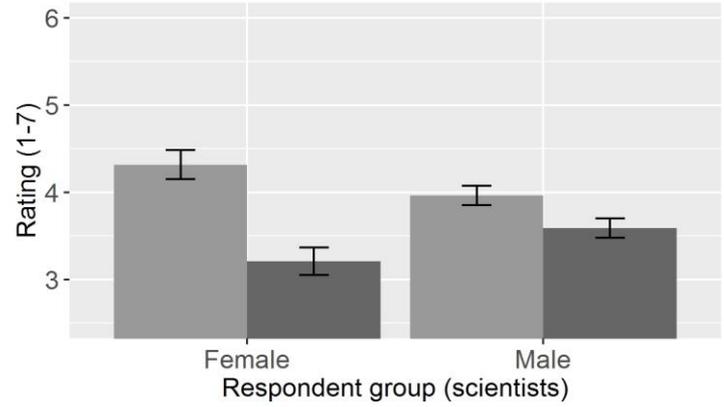
Intelligence



Integrity *



Communality *



The storybook image of the scientist: conclusions

Belief in stereotypical image seems quite strong

Most ideal scientist: established & female

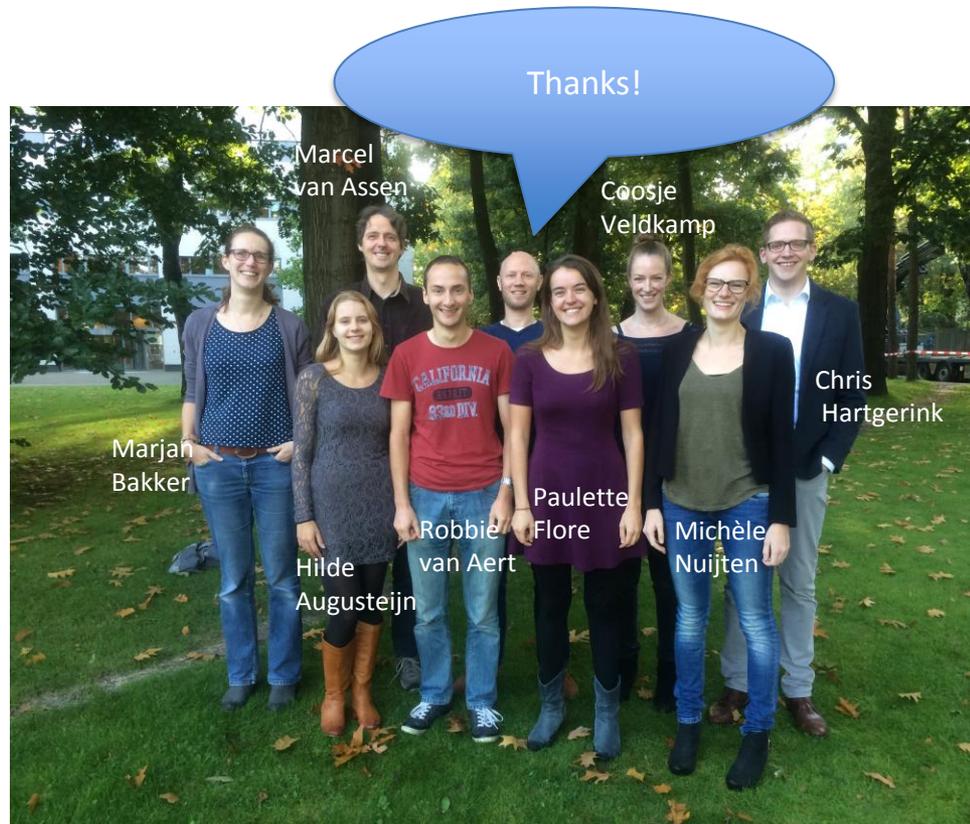


Established scientists have a more positive image of PhD students than of early-career scientists

Denial of own human fallibility?

→ Willingness to adopt practices /policy aimed at reducing human factors in science?

Metaresearch.nl

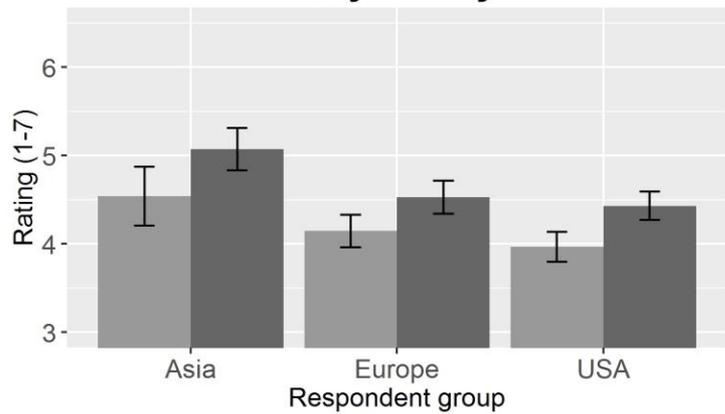


European Research Council

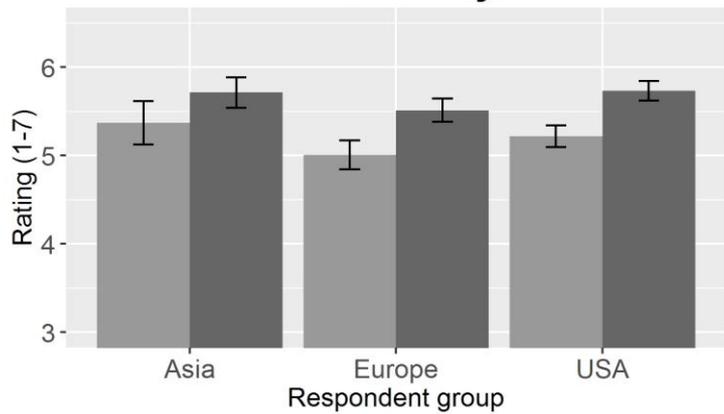


J.M.Wicherts@uvt.nl

Objectivity



Rationality

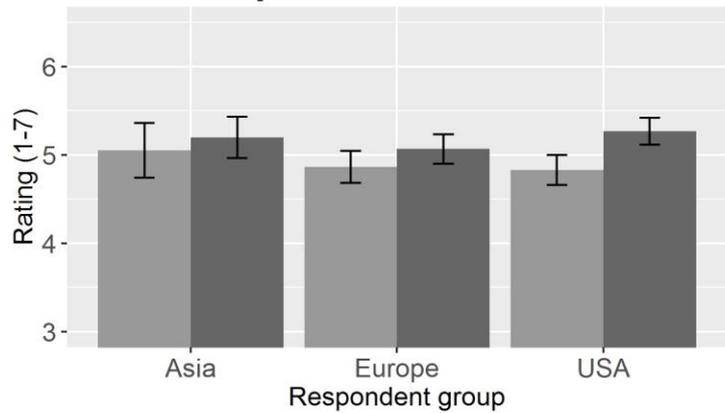


Target

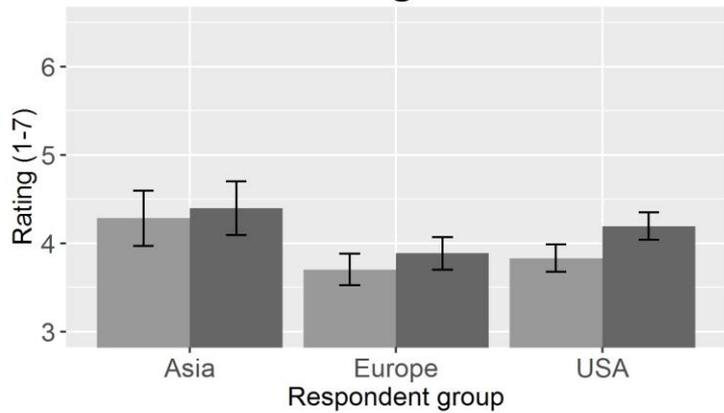
A Highly-Educated person

A scientist

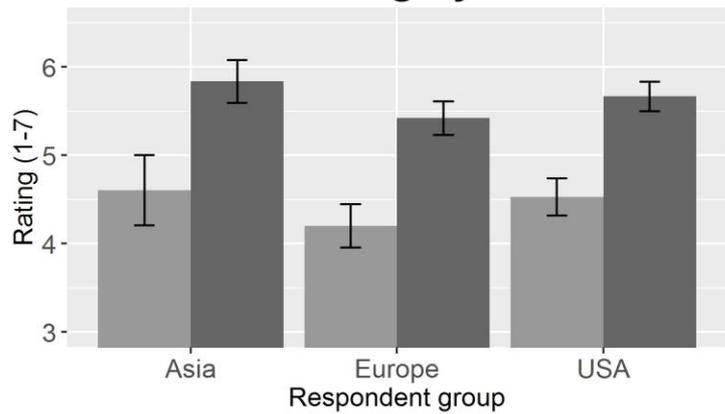
Open-mindedness



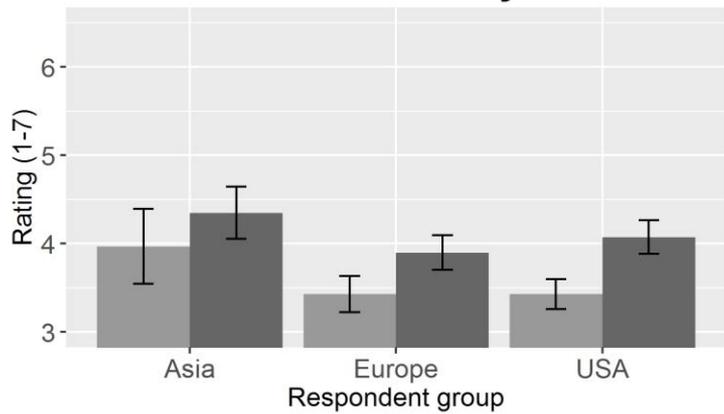
Intelligence



Integrity

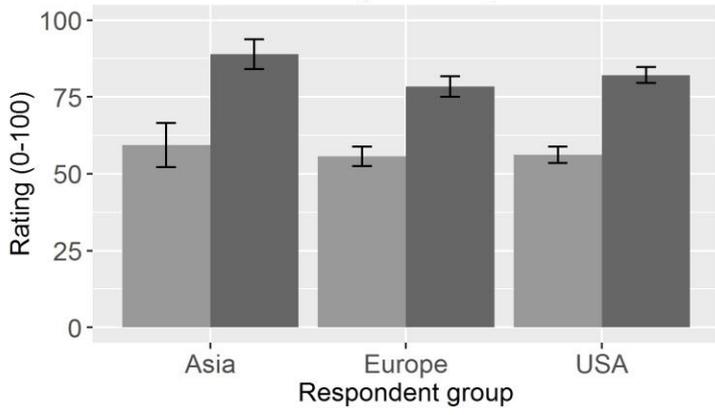


Communality

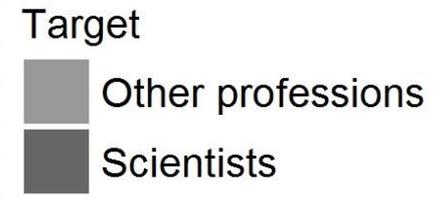
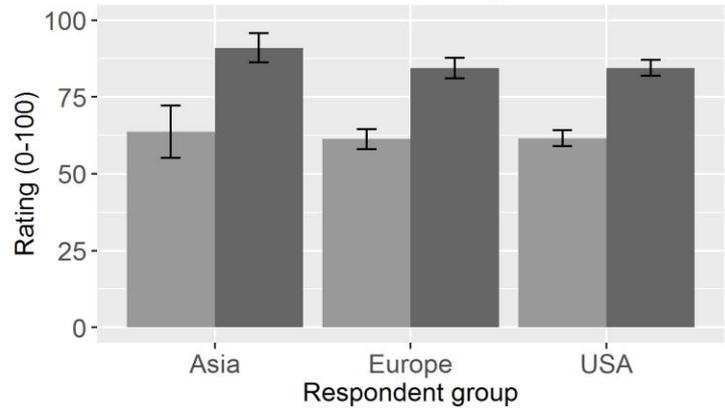


Study 1 international

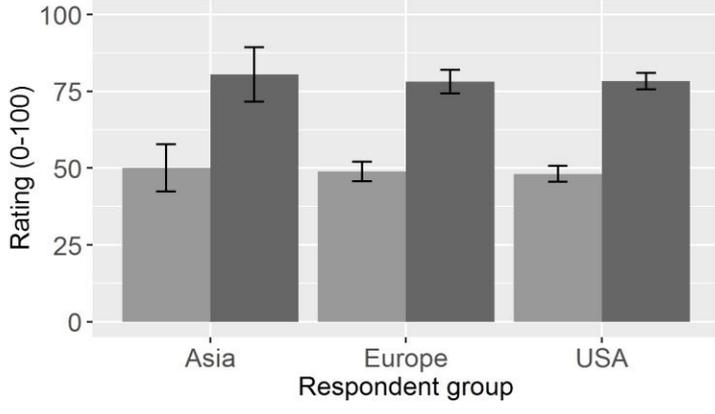
Objectivity



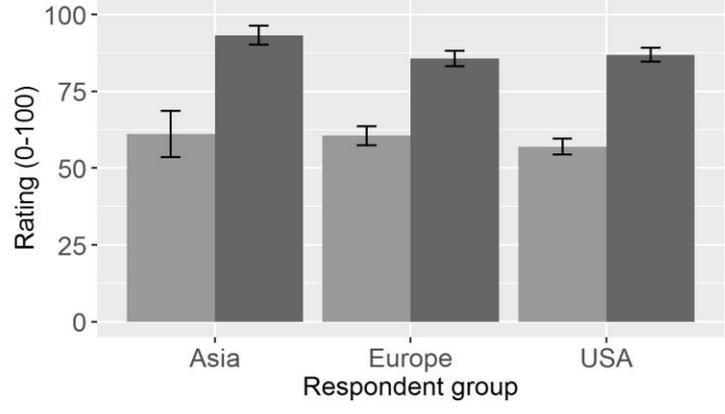
Rationality



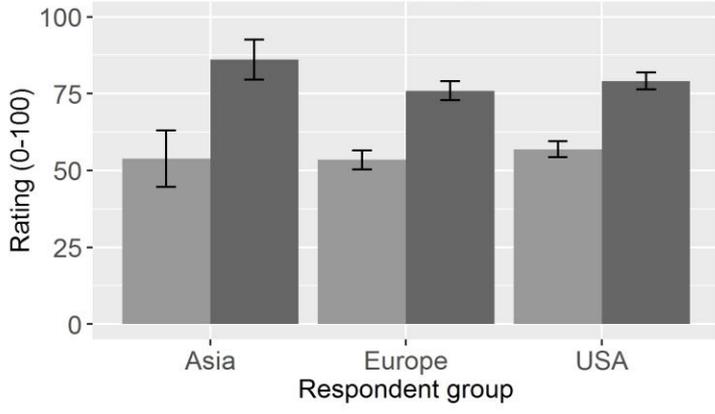
Openness



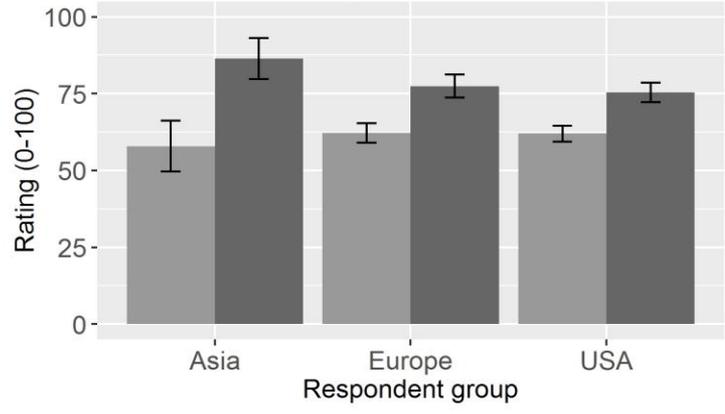
Intelligence



Integrity

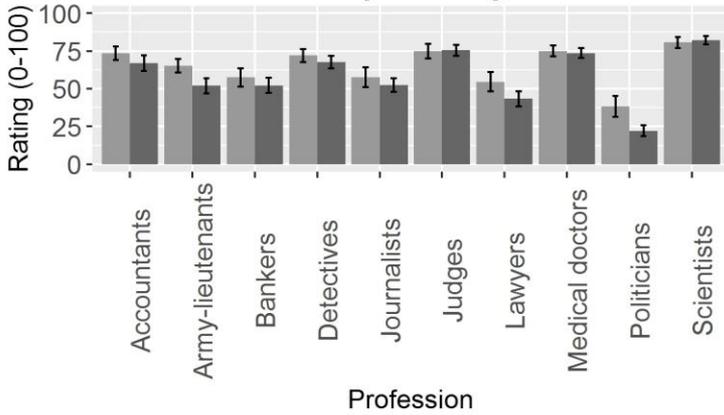


Competitiveness

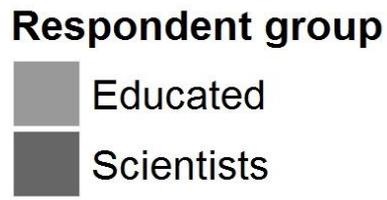
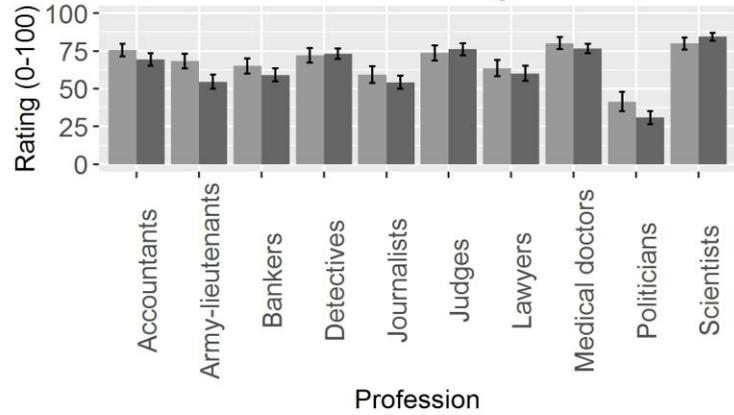


Study 2 international

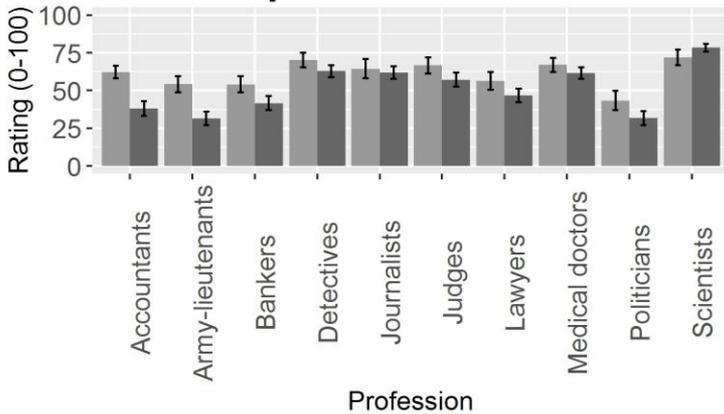
Objectivity



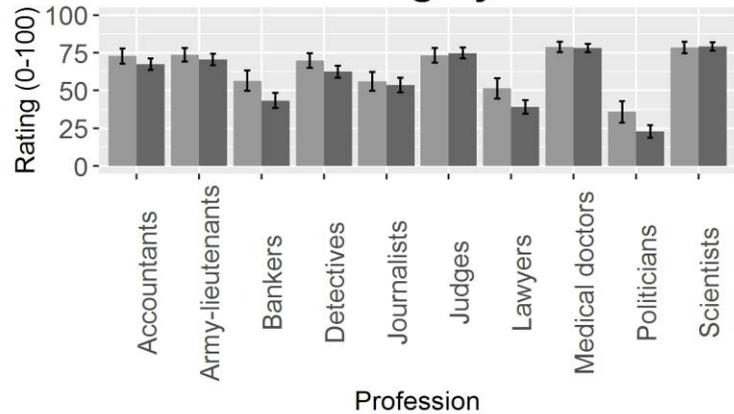
Rationality



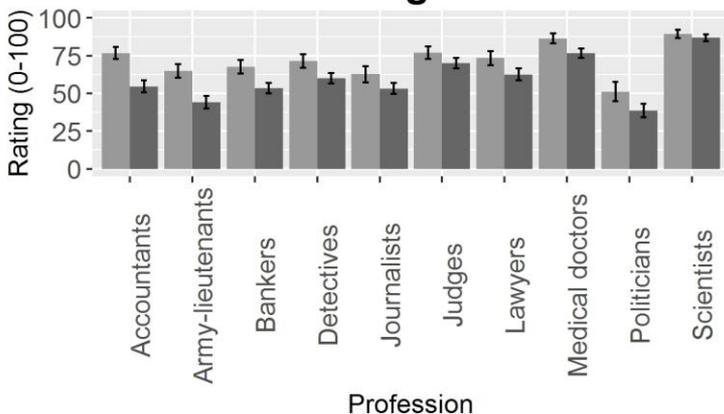
Open-mindedness



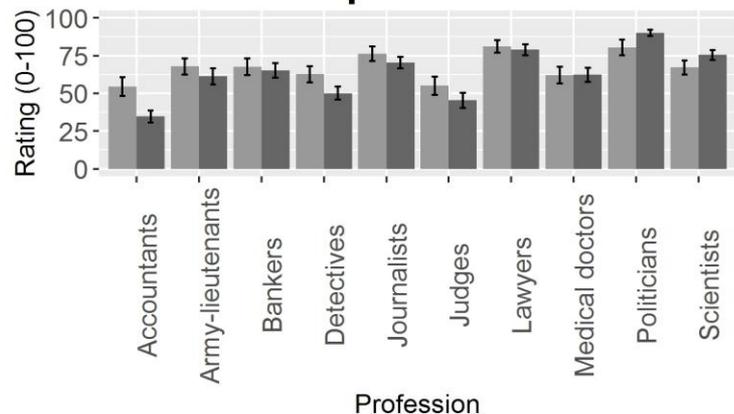
Integrity



Intelligence



Competitiveness



Study 2 all professions