# Information Inequality

## Gender Gaps in Knowledge

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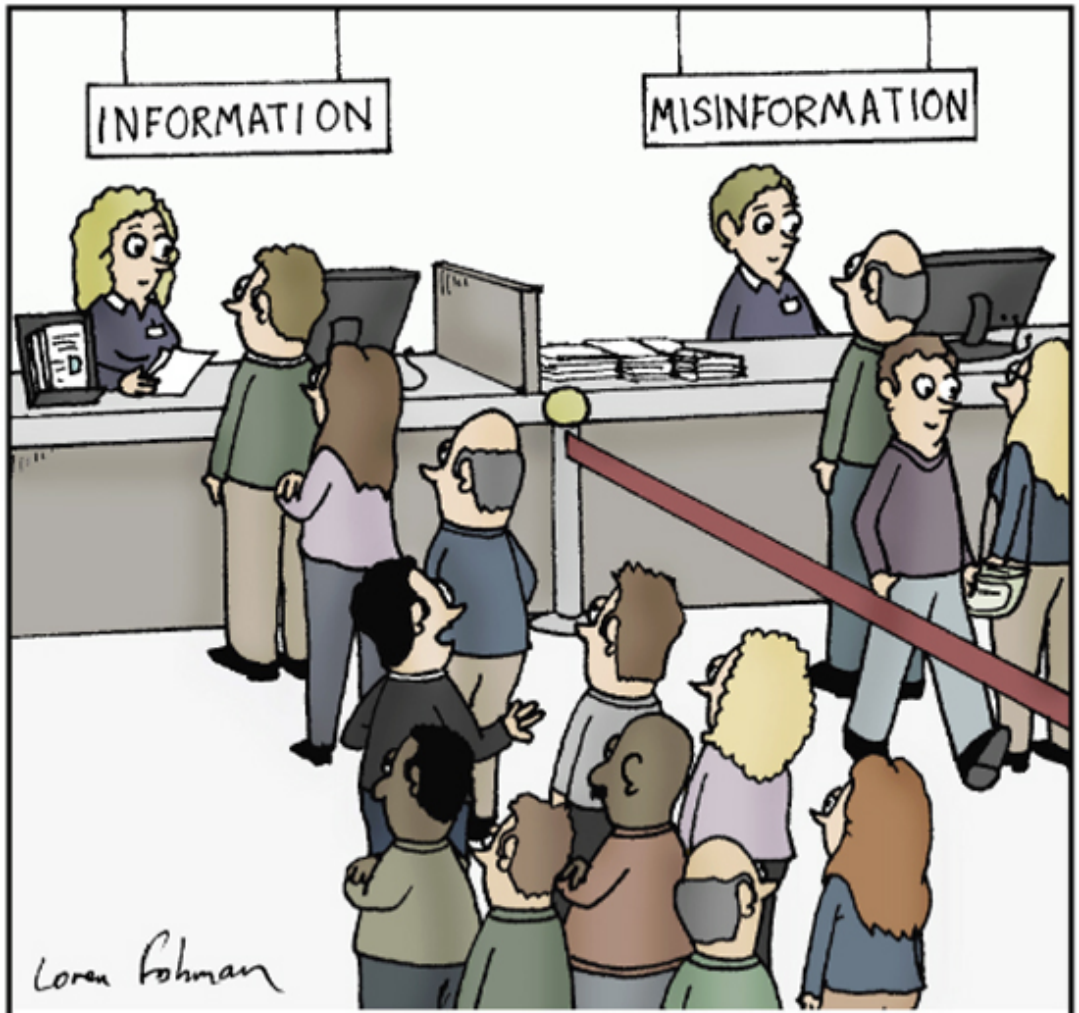
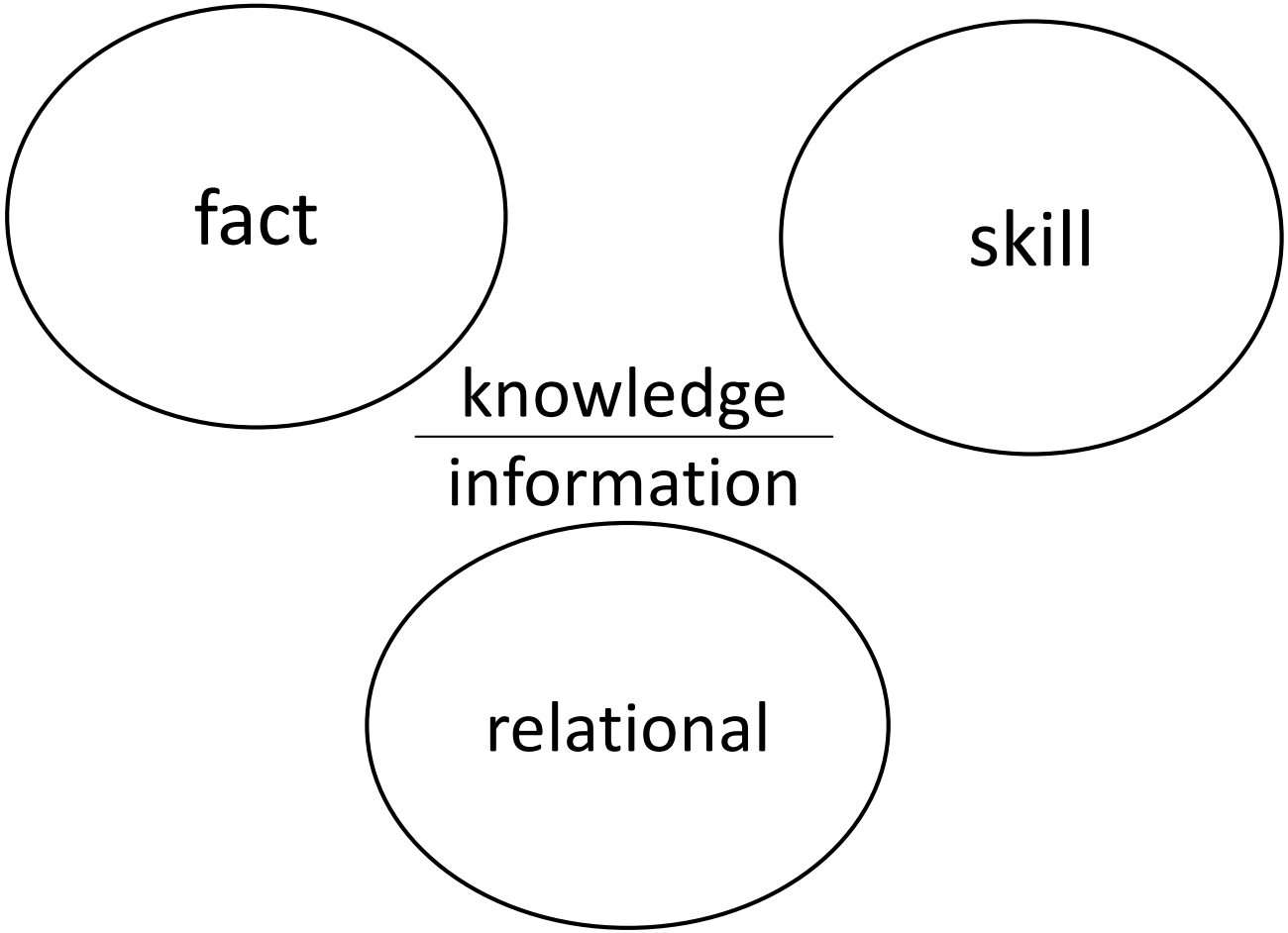



"Hey, that line's moving a lot faster!"

*(Related theory: Hidalgo 2015, Simon 1971 | Cartoon credit: Loren Fishman | cartoonstock.com)*

# Types of Knowledge



# Research Questions

*Is there a gender gap in knowledge?*

*Does the gender gap in knowledge vary by domain?*

*What social process(es) explain(s) this gap?*

# Data

| Data Source | No. Datasets | No. Questions |
|---|---|---|
| General Social Survey | 5 | 40 |
| Pew Research Center | 20 | 222 |
| USC's Understanding America Study | 3 | 48 |
| Rand American Life Panel | 2 | 24 |
| National Financial Capability Studies | 3 | 16 |
| Kaiser Family Foundation | 1 | 7 |
| Health Information National Trends Survey | 7 | 125 |
| Integrated Health Interview Series | 1 | 12 |
| 21st Century Americanism survey | 1 | 4 |
| Global Views American Public Opinion | 1 | 2 |
| Outlook on Life Survey | 1 | 6 |
| National Politics Study | 1 | 5 |
| Chicago Survey of Amer. Public Opinion | 1 | 2 |
| Total | 48 | 513 |

# Domains

| |
|---|
| physical science |
| biological science |
| technology |
| math |
| literature |
| social science |
| natural world |
| geography |
| domestic politics |
| foreign politics |
| economics |
| finance |
| health |
| religion |
| war |
| current events |

# What's Missing?

| |
|---|
| human development |
| child care |
| elder care |
| household maintenance |
| cooking |
| car maintenance |
| art |
| music |

# Model

| Factors |
| --- |
| **Gender** |
| Income |
| Race / Ethnicity |
| Age + $age^2$ |
| Education |

=

x 513

| Outcome |
| --- |
| Probability that you get the question correct |

# Model

| Factors |
| --- |
| **Gender** |
| Income |
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| Age + $age^2$ |
| Education |

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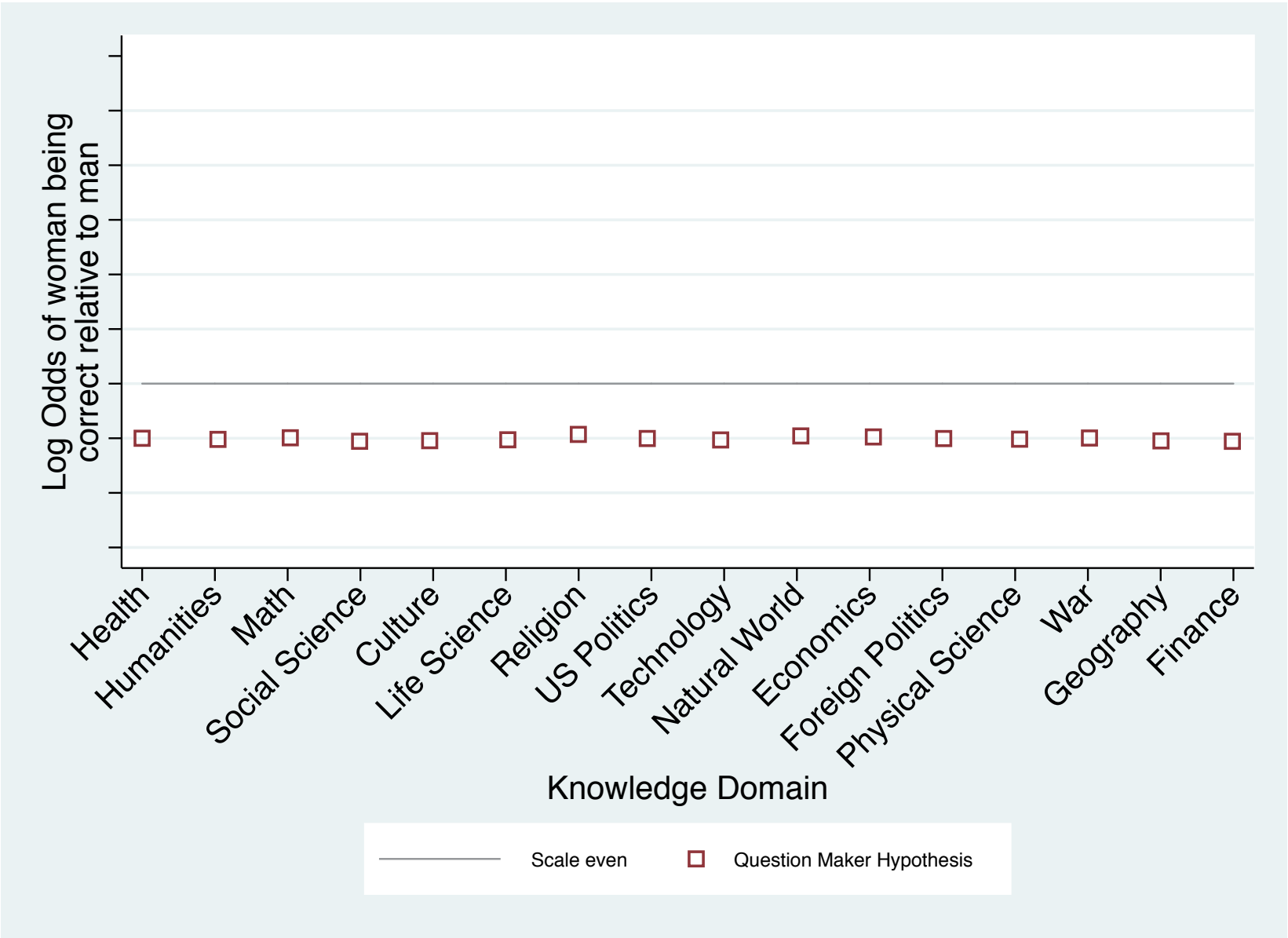
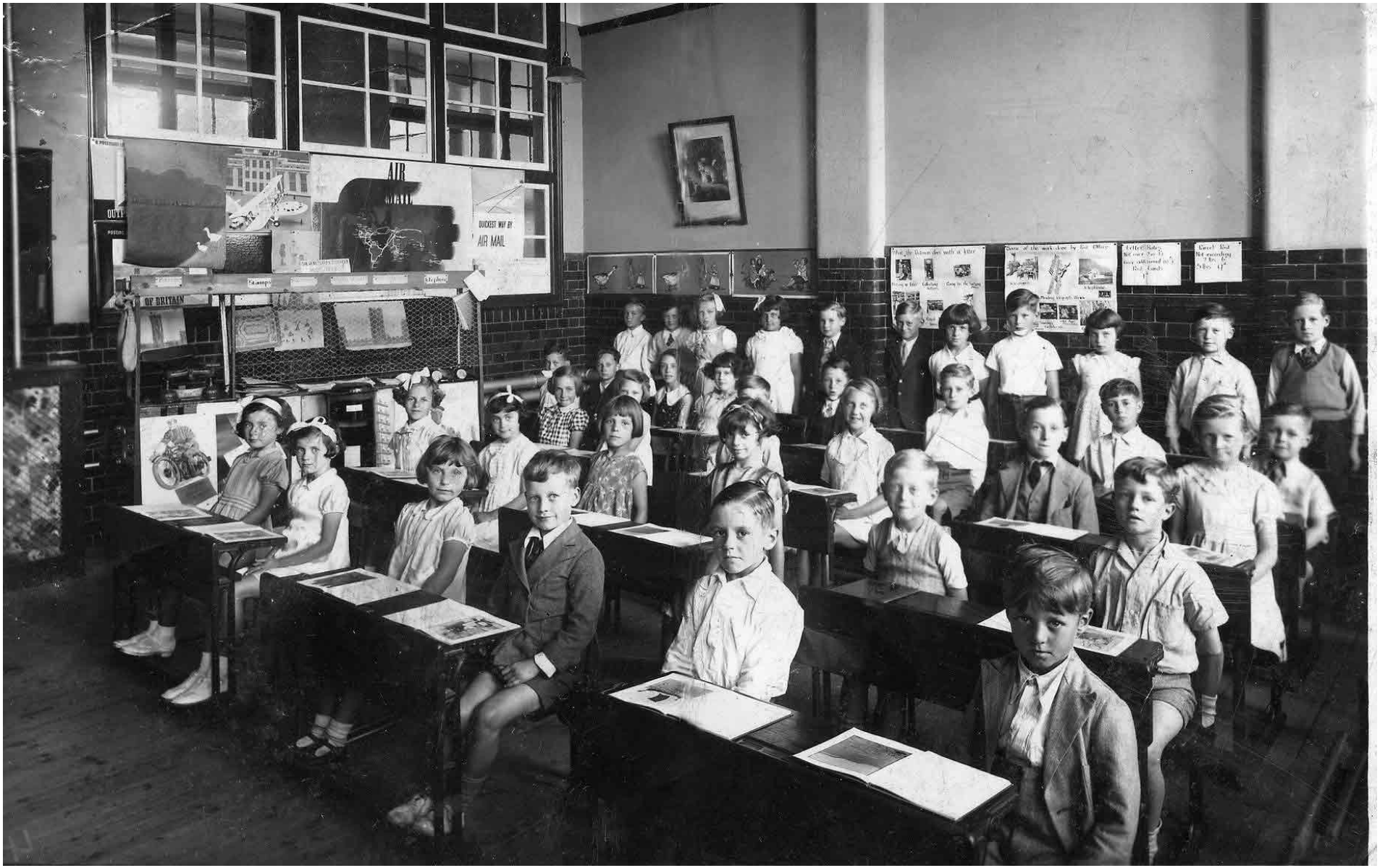
x 513

| Outcome |
| --- |
| Probability that you get the question correct |

# Hypothesis: Question Maker Bias

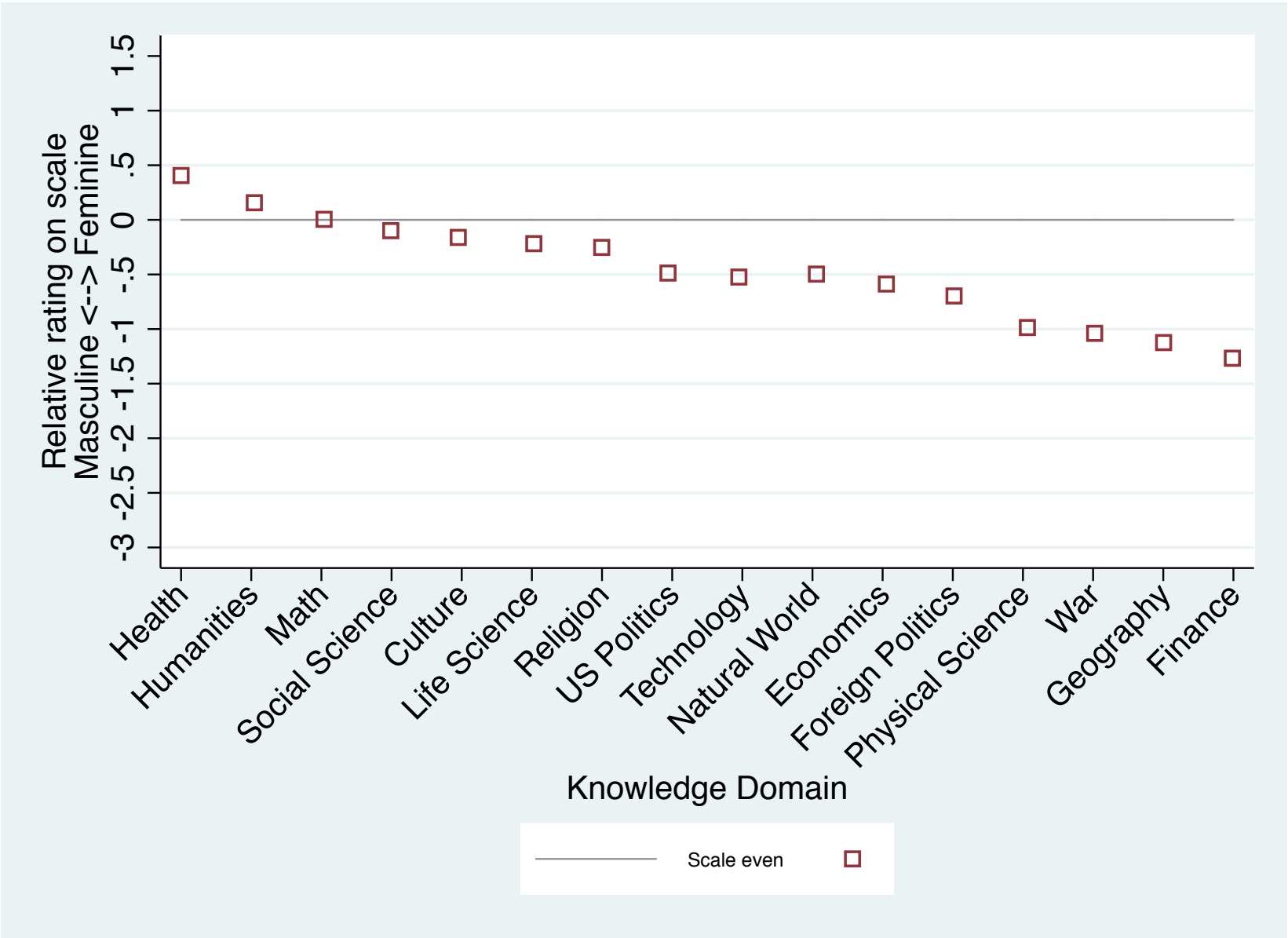


# Hypothesis: Socialized Essentialism

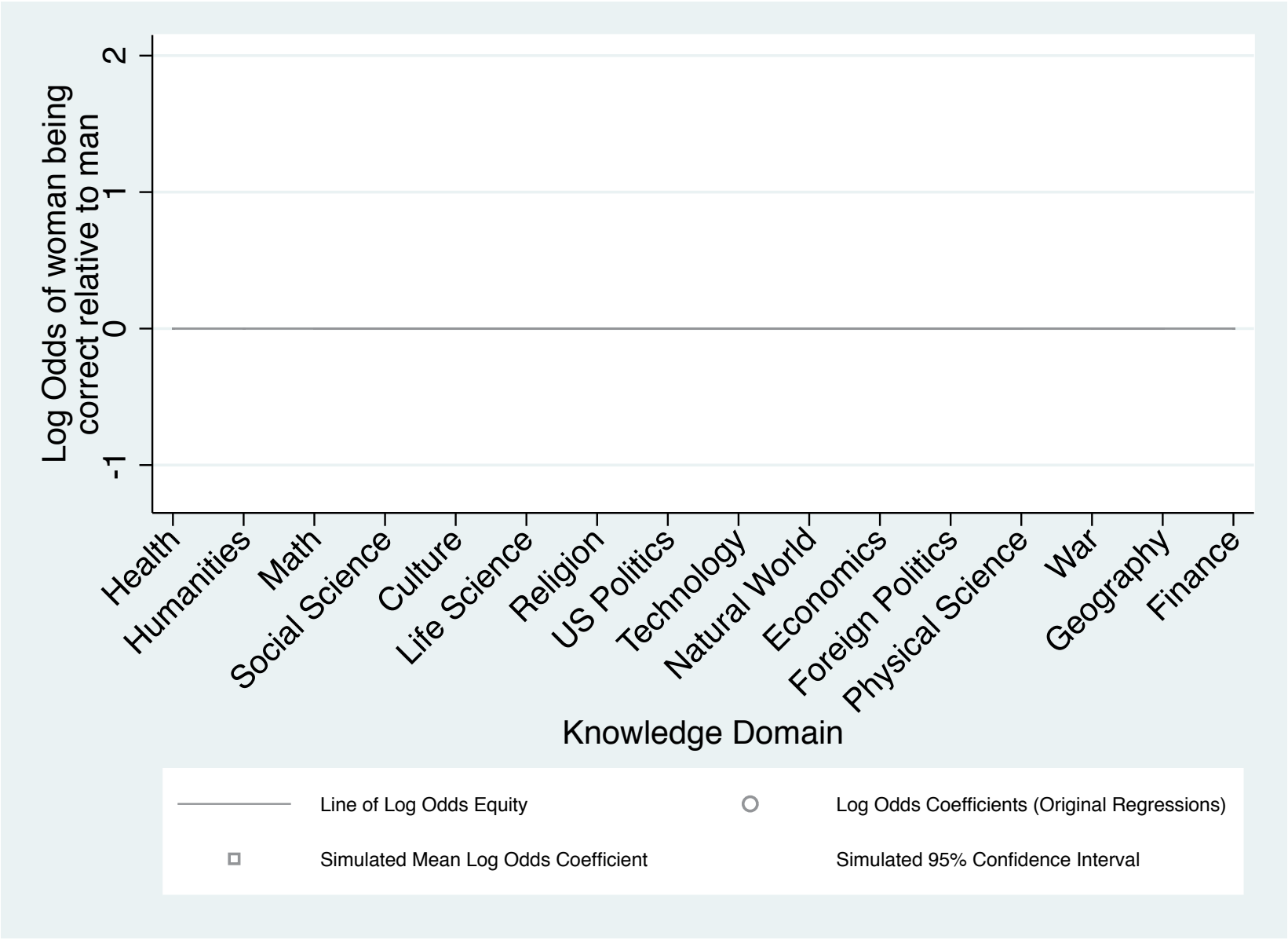



*(Related theory: Ridgeway2006, West1987, Cech 2013, Charles 2009 | Photo credit:*

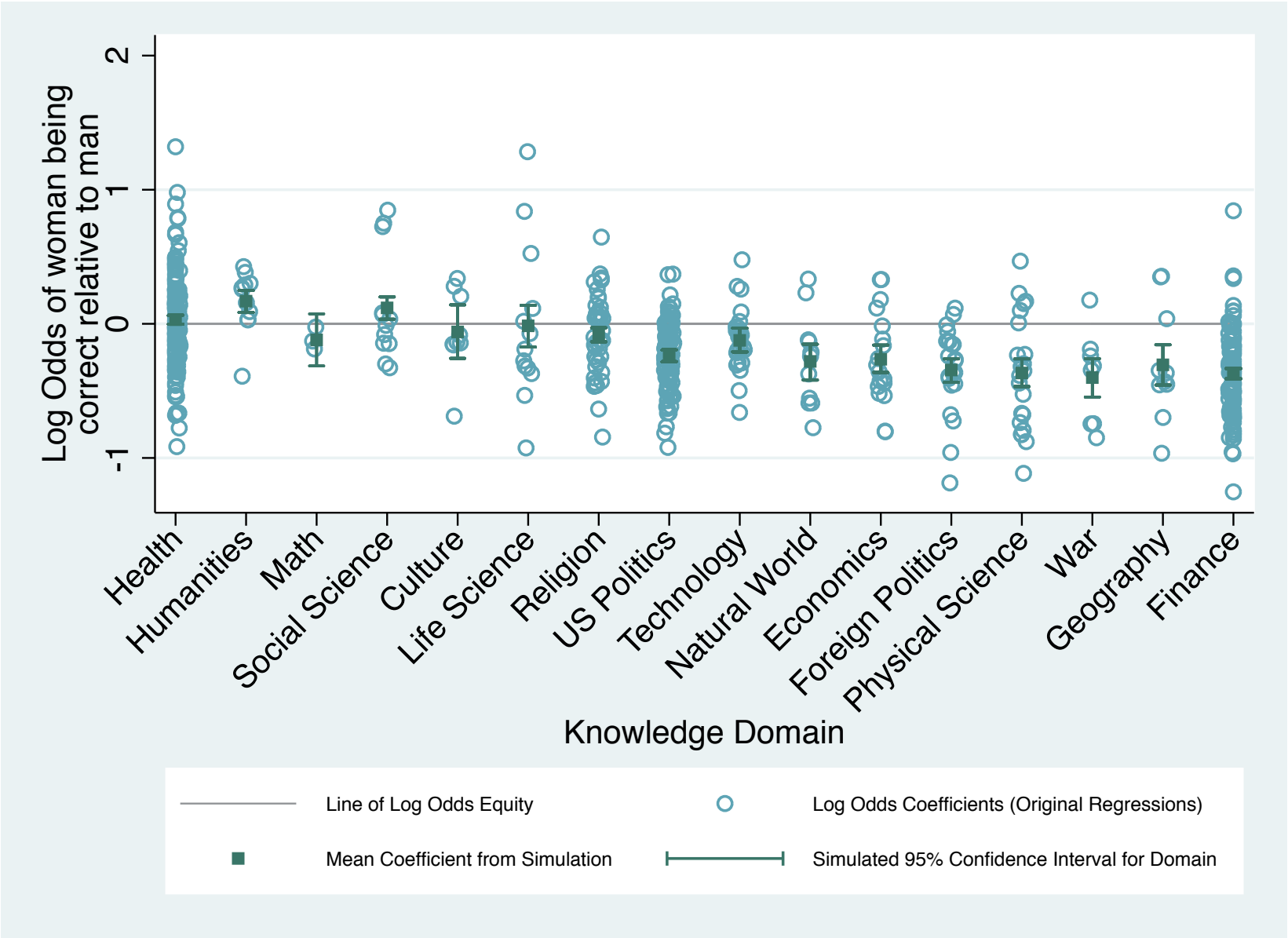
# Hypothesis: Socialized Essentialism



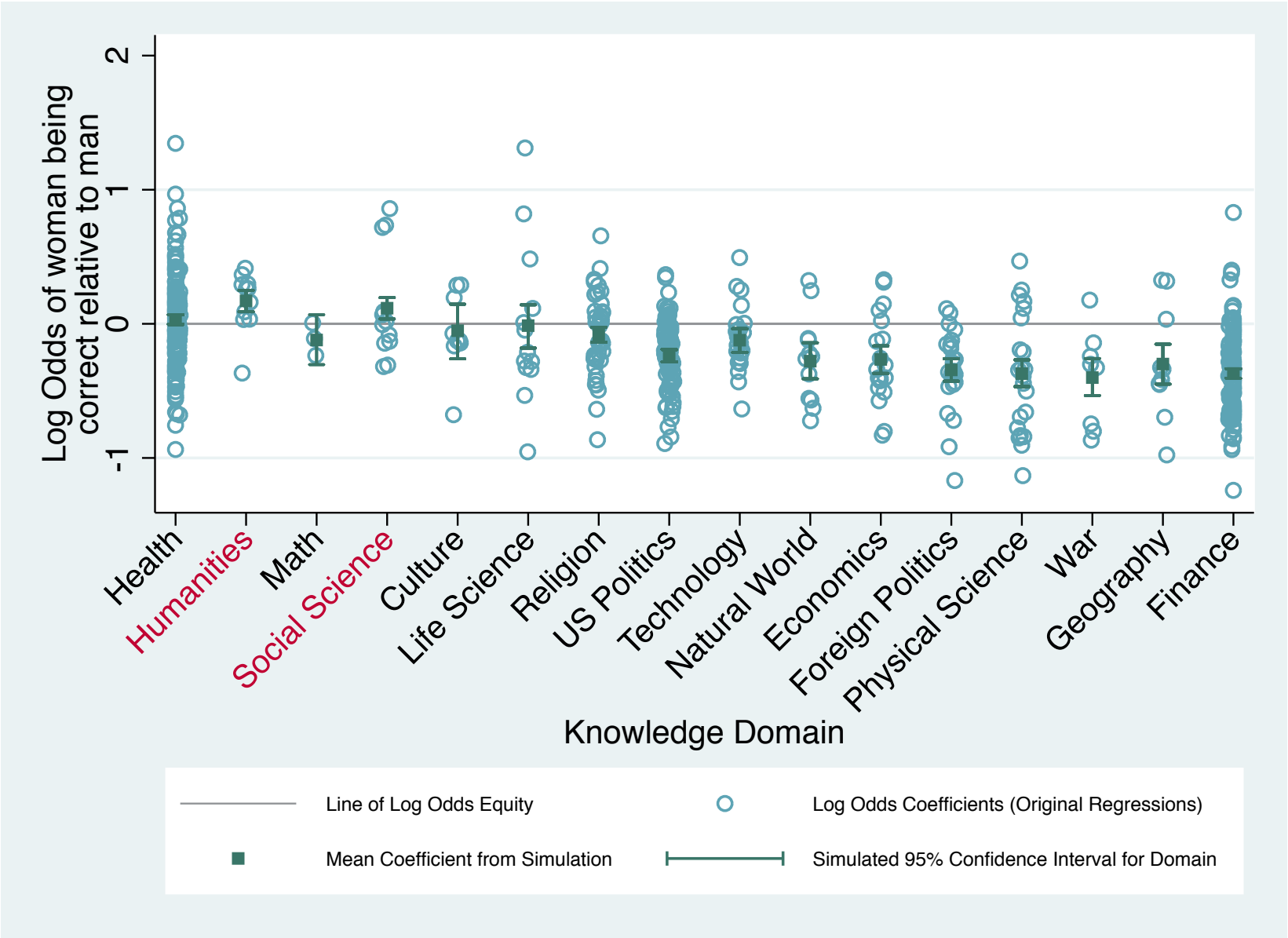
# Domains Across X-Axis



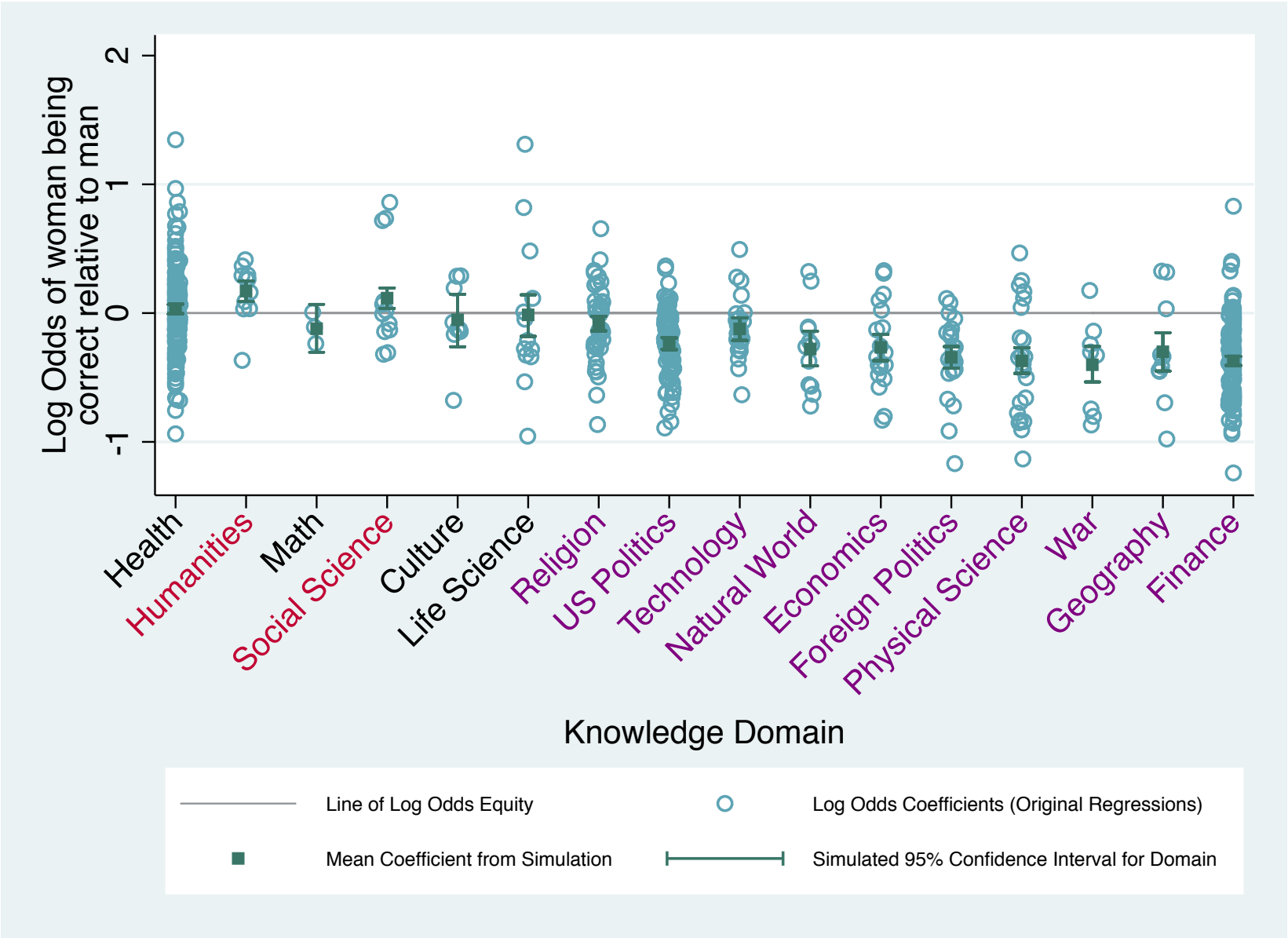
# Each Model as a Data Point



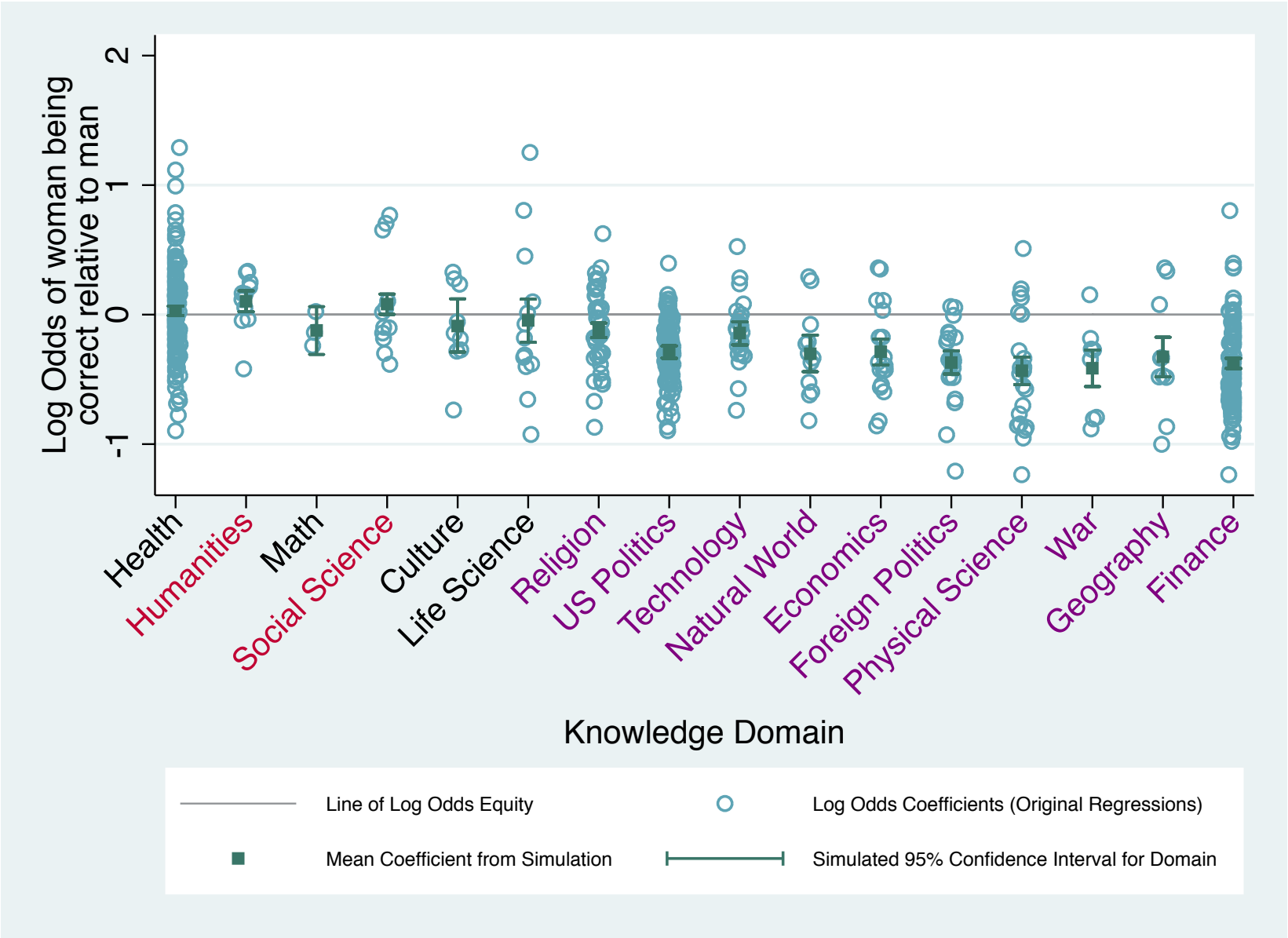
# No mean gender difference in 4/16 domains



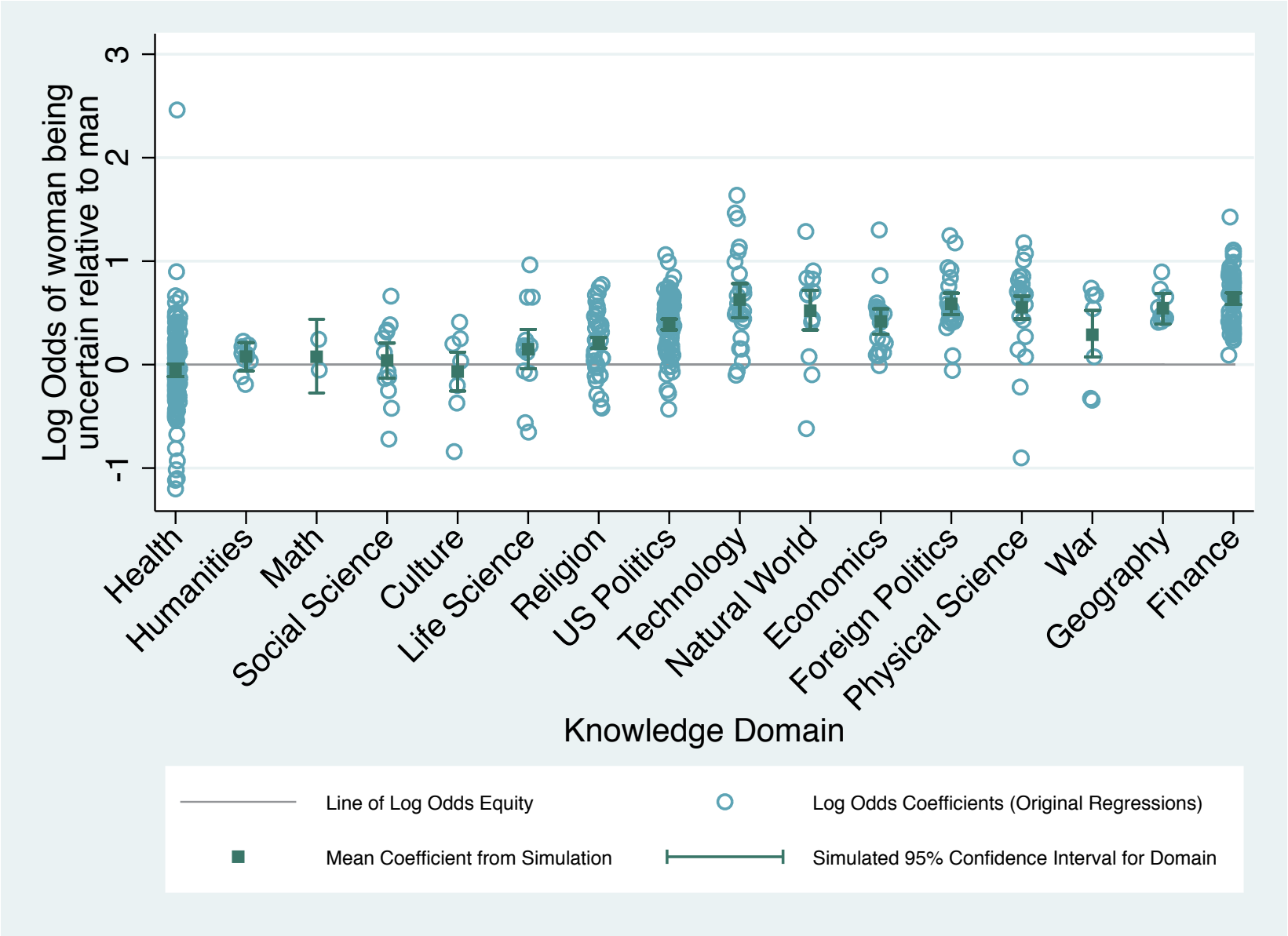
# Men have greater knowledge in 10/16 domains



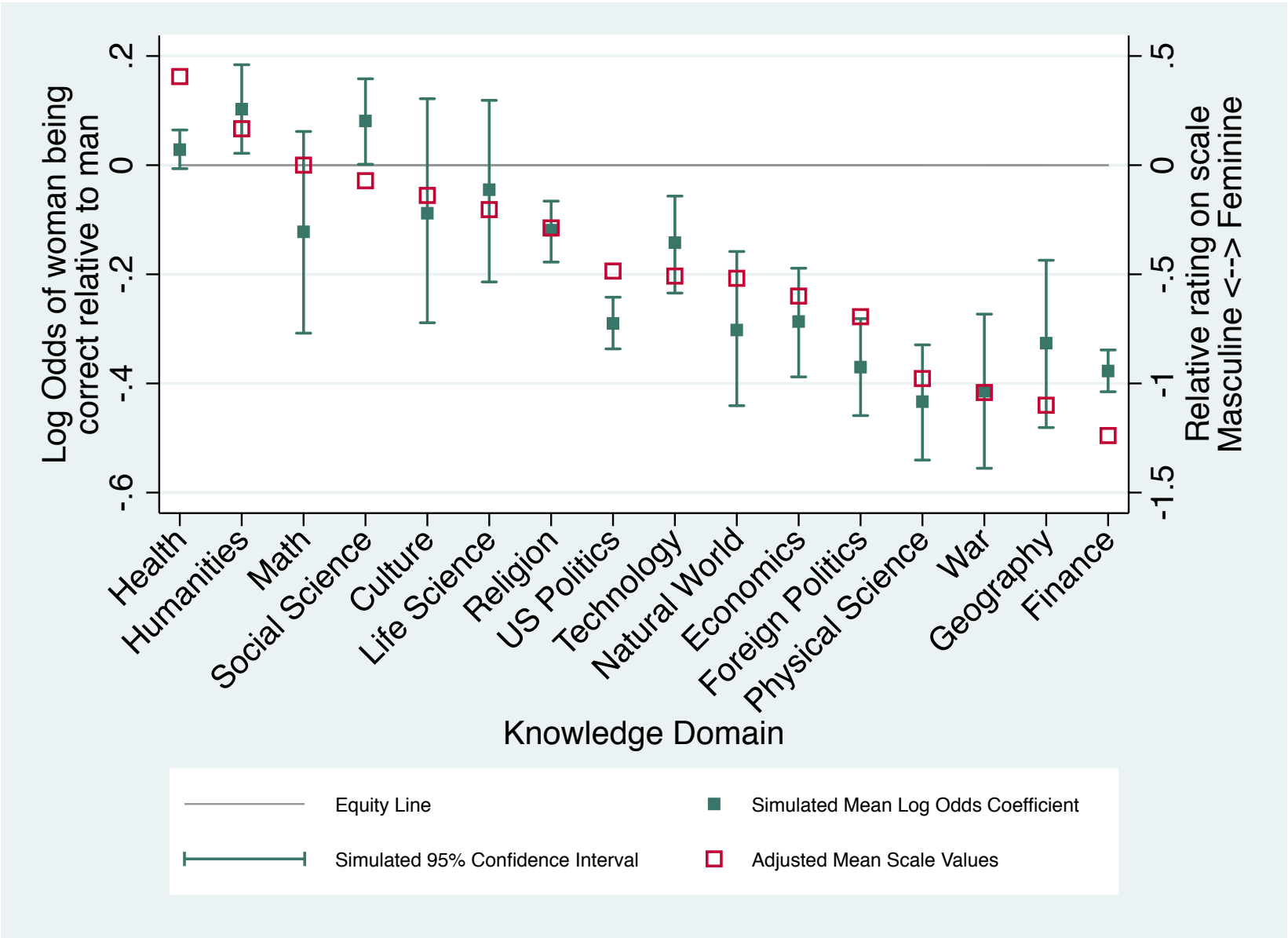
# Result holds when controlling for education



# Women answer more questions “don’t know”



# Results: Socialized Essentialism



# Thank You

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# Supplemental Slides

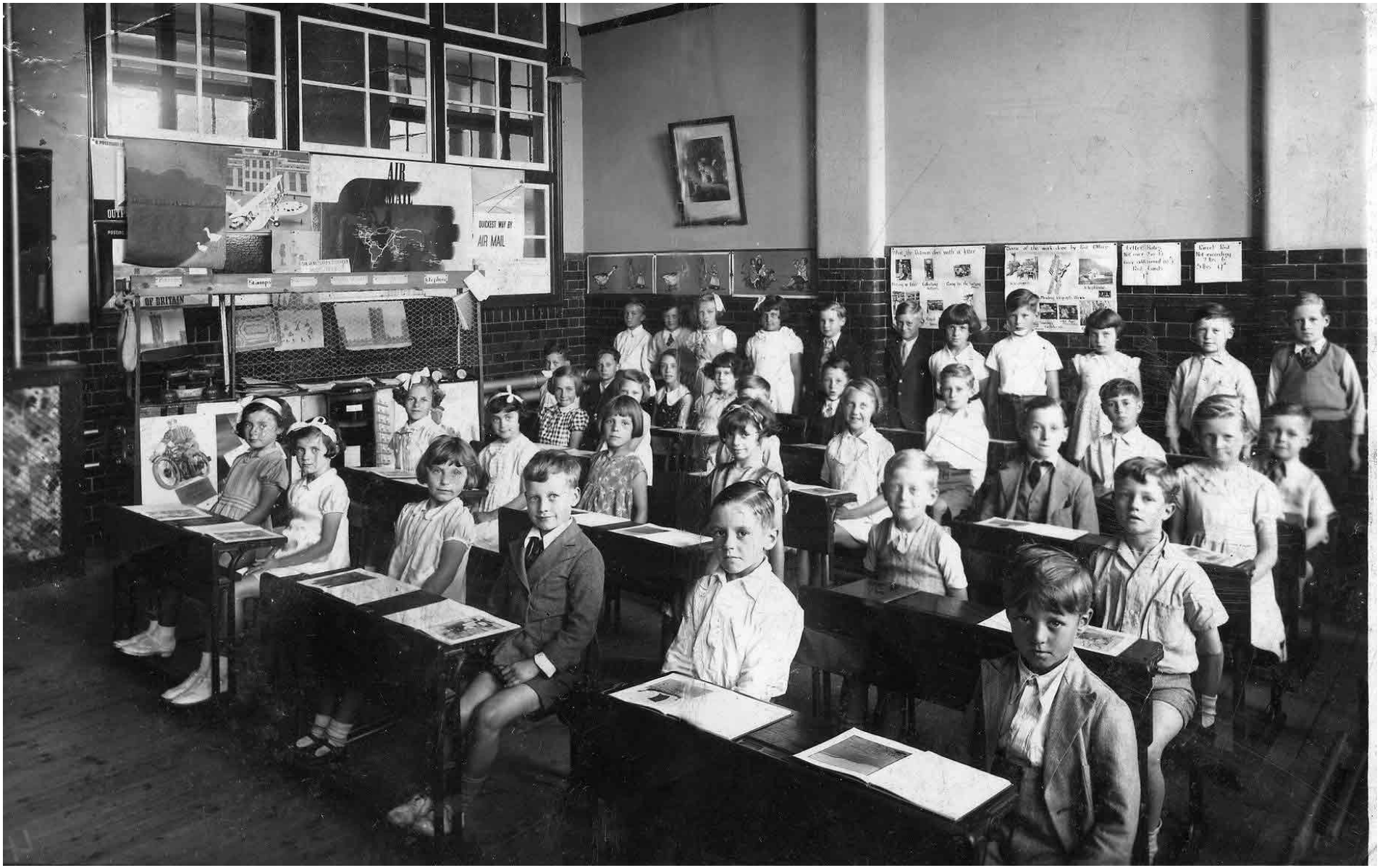
# Information & Status Differences

- *(Back)*

# Leisure Time

*(Related theory: Parker 2011 | Photo credit: East Riding Archives)*

# Socialization

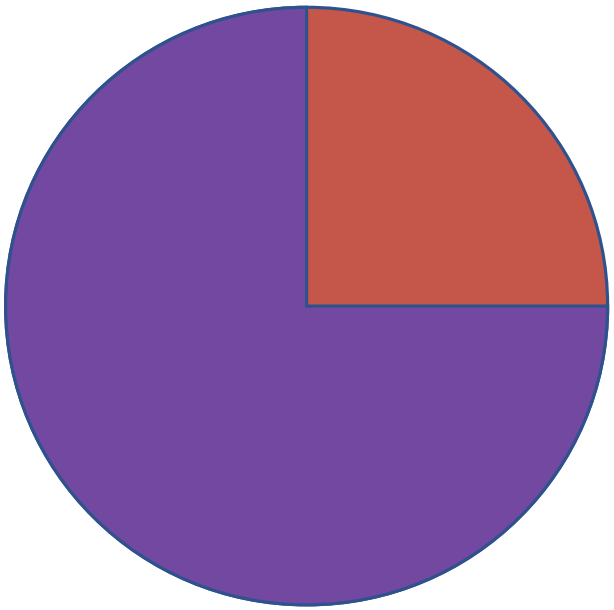



*(Related theory: Ridgeway2006, West1987, Cech 2013, Charles 2009 | Photo credit:*

# Gender Segregated Networks

*(Related theory: Lutter 2015, Marin 2012, DiMaggio & Garip 2012 | Photo credit: https://www.nes-mag.com)*

# Next: Exploring Mechanisms

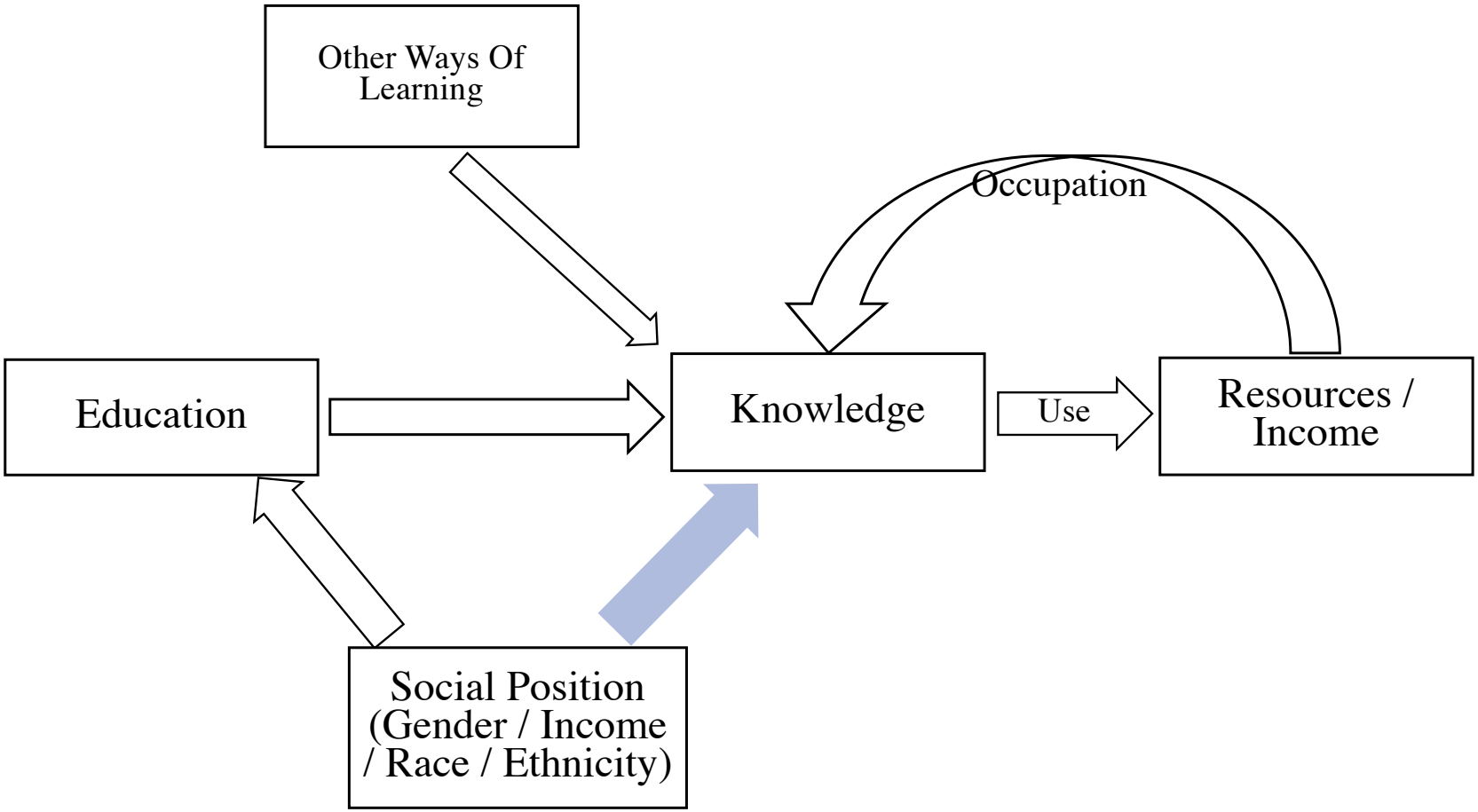


Assert Gender?

or

Adapt to Majority Knowledge?

# Acquisition and use of knowledge



# Data Search & Selection

Databases searched:

- ICPSR – 4,581 surveys reviewed
- Data.gov – 1,117 surveys reviewed

Inclusion criteria:

- survey search includes the term “knowledge”
- years 2005 – 2015
- U.S. nationally representative on race, gender, age

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# Data Structure

| sC_earthsun | Odds Ratio | Linearized Std. Err. | t | P>\|t\| |
|---|---|---|---|---|
| female | .4518979 | .0450369 | -7.97 | 0.000 |
| race_hisp | .7261311 | .1[illegible]449 | -1.17 | 0.243 |
| race_black | .3949817 | .037435[illegible] | -9.80 | 0.000 |
| race_asian | 1.91908 | .0824735 | [illegible]17 | 0.000 |
| race_other | .7465925 | .0794548 | -2.75 | 0.007 |
| dV_fincG_1k | 1.001214 | .0005461 | 2.22 | 0.0[illegible] |
| edu_HS | 1.673856 | .090793 | 9.50 | 0.000 |
| edu_someCol | 2.300979 | .0567248 | 33.80 | 0.000 |
| edu_colPlus | 6.263558 | .5777689 | 19.89 | 0.000 |
| _cons | 3.218947 | .2726742 | 13.80 | 0.000 |

| DOMAIN | Literature | | Science | | |
|---|---|---|---|---|---|
| STATUS | L1 | L2 | S1 | S2 | S3 |
| Gender (G) | GL1 | GL2 | GS1 | GS2 | GS3 |
| Class (C) | CL1 | CL2 | CS1 | CS2 | CS3 |
| Race (R) | RL1 | RL2 | RS1 | RS2 | RS3 |

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# Logit Details

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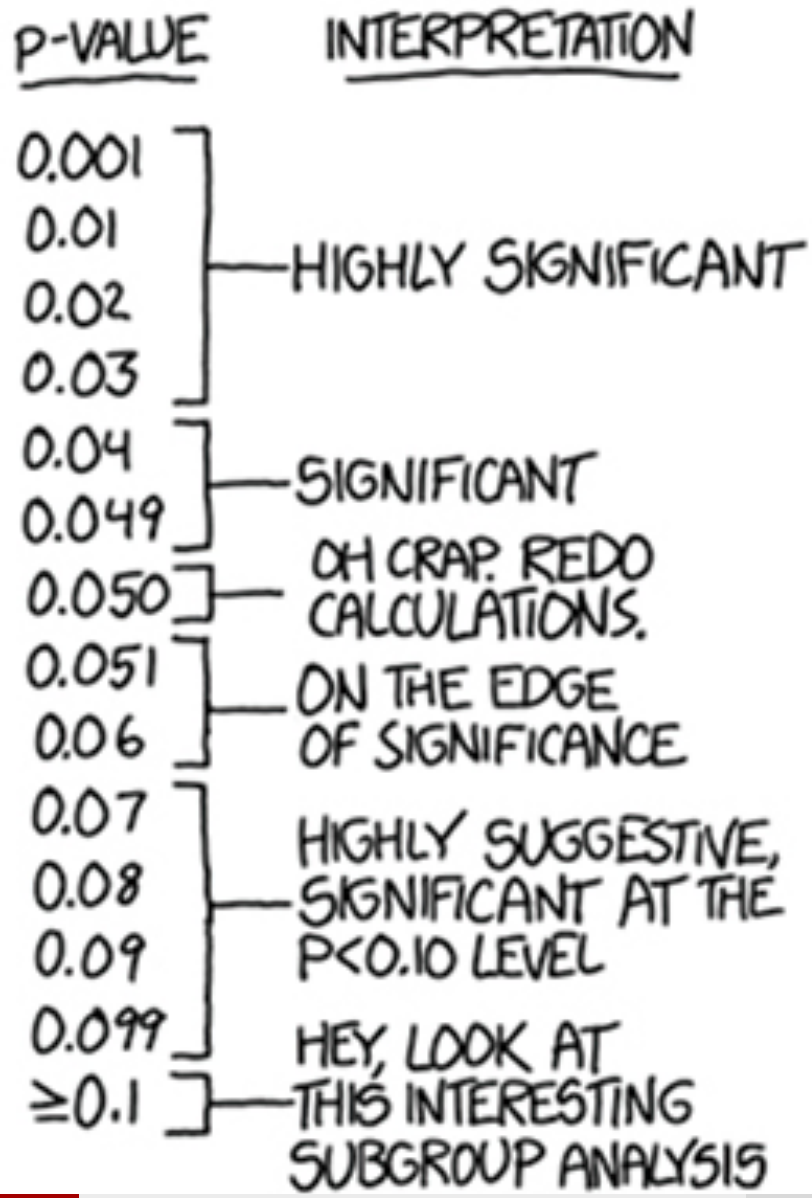
# Adjusting for Multiple Comparisons



# Confidence Interval Simulations

Draw 1000 repetitions from a standard normal distribution, generate a distribution of 1000 possible coefficients for each knowledge question:

$$\hat{\beta}_i = \beta + (SE * x_i),$$

where $x_i \sim N(0, 1)$.

Order all $\hat{\beta}_i$ such that

$$\hat{\beta}_i \leq \hat{\beta_{i+1}}$$

Find value of $\hat{\beta}_i$ at the 2.5th percentile and the 97.5th percentile.

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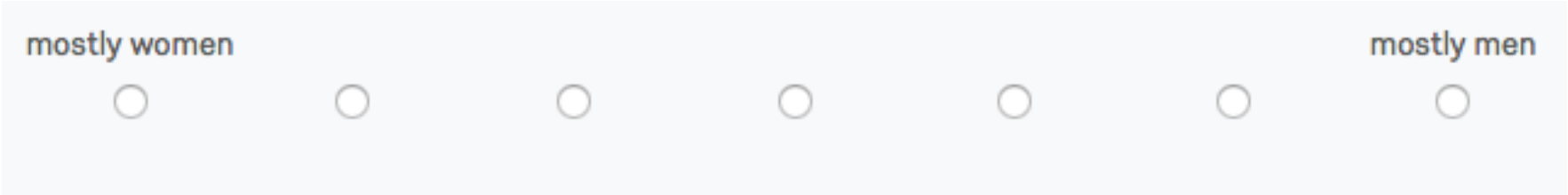
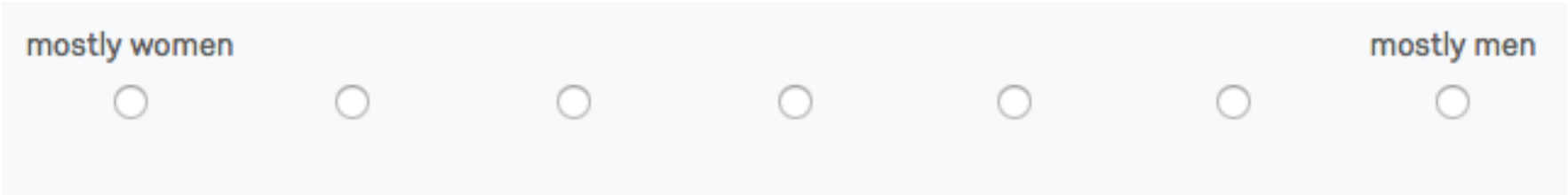
# My Survey: Gendered Perception of Knowledge Questions

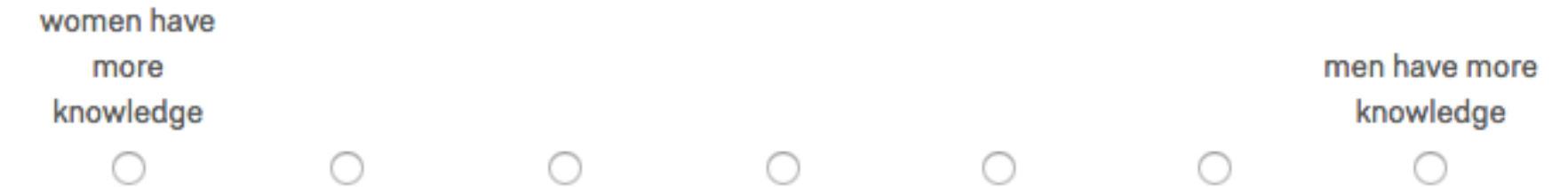
- Who mostly watches news about X?



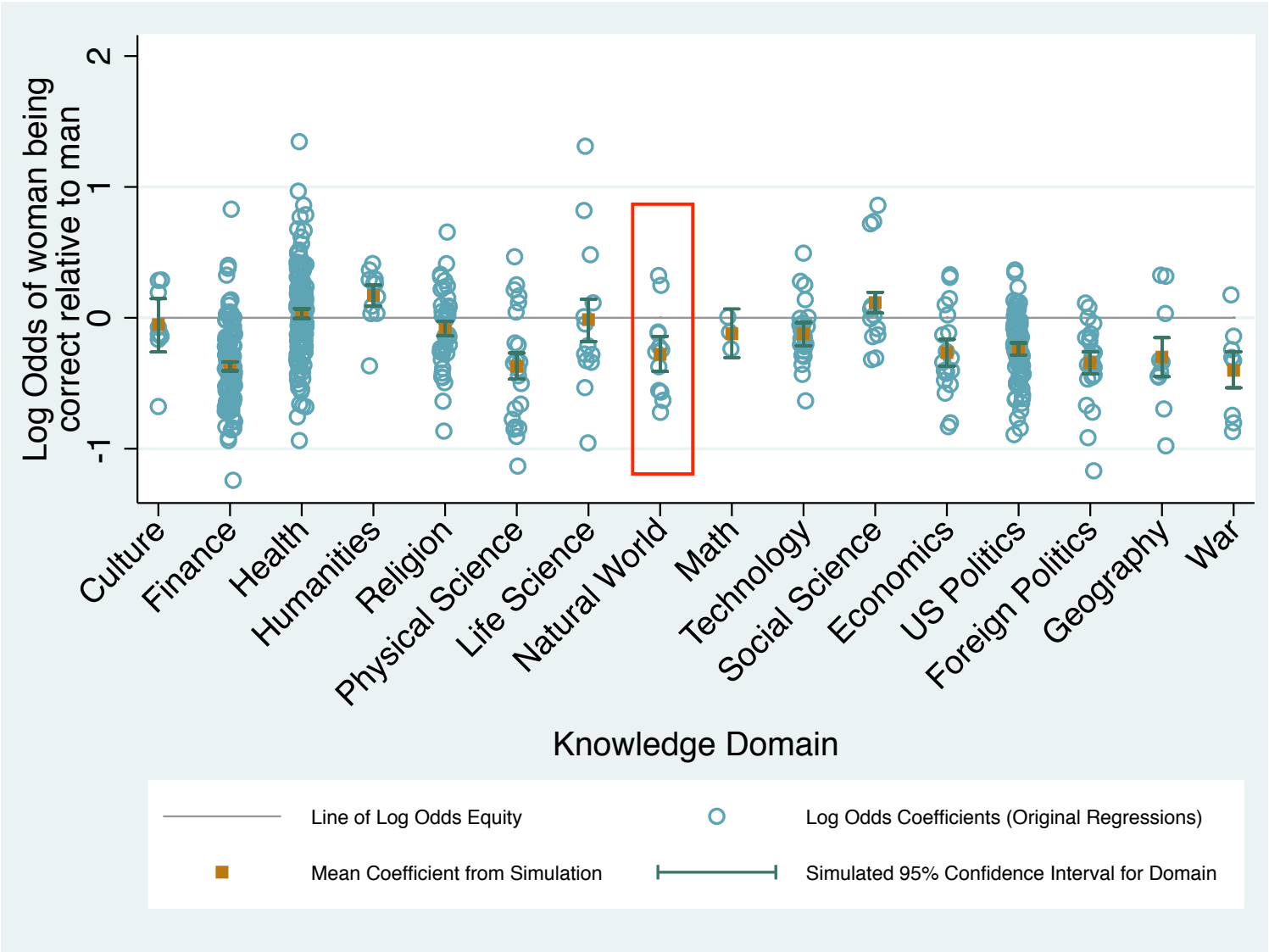

- Who mostly talks to their friends about X?



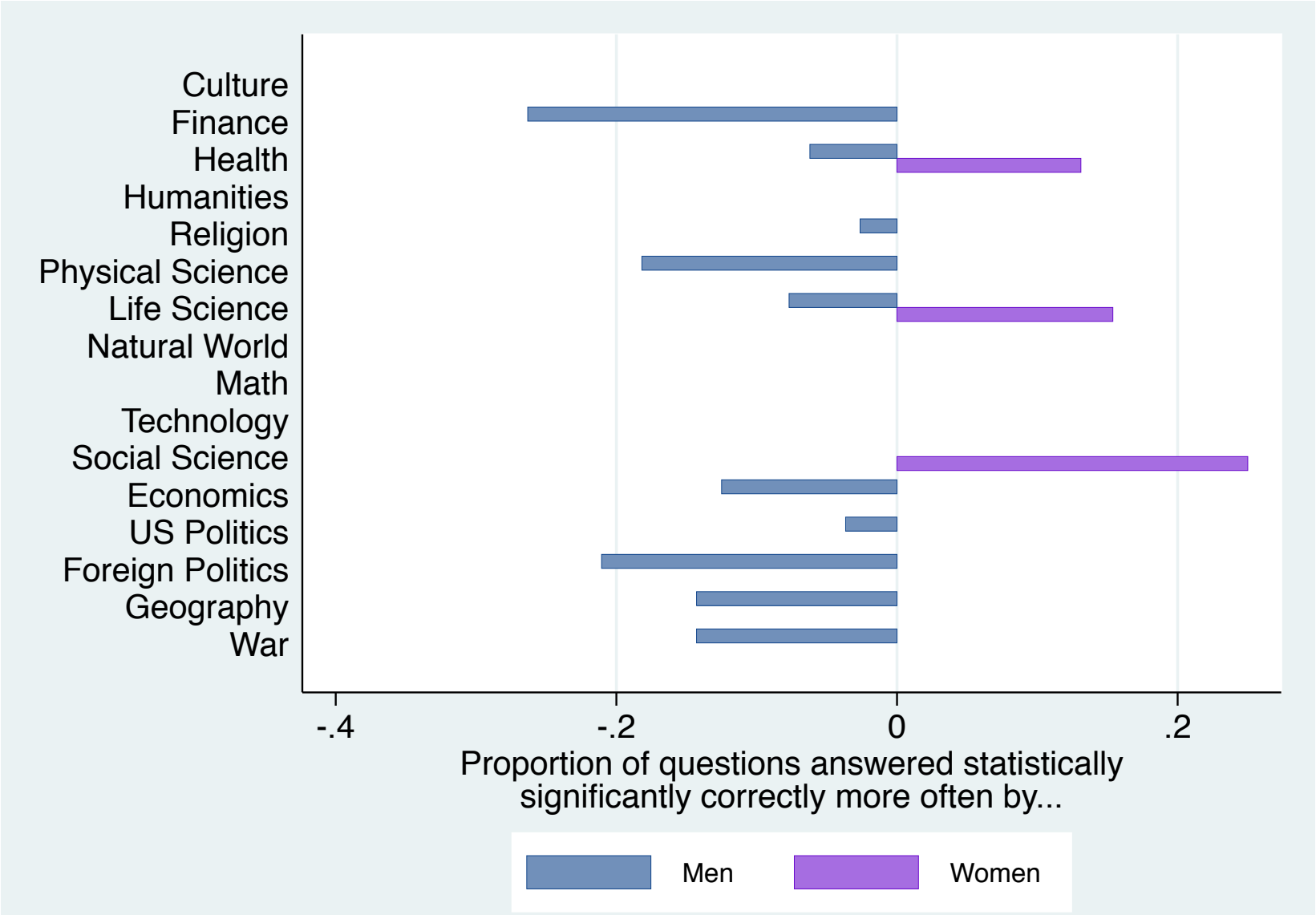

- Who do most people in our society think has more knowledge about X?



# Mean significance vs. Question significance



# Men answer greater proportion of questions correctly in 65% of domains



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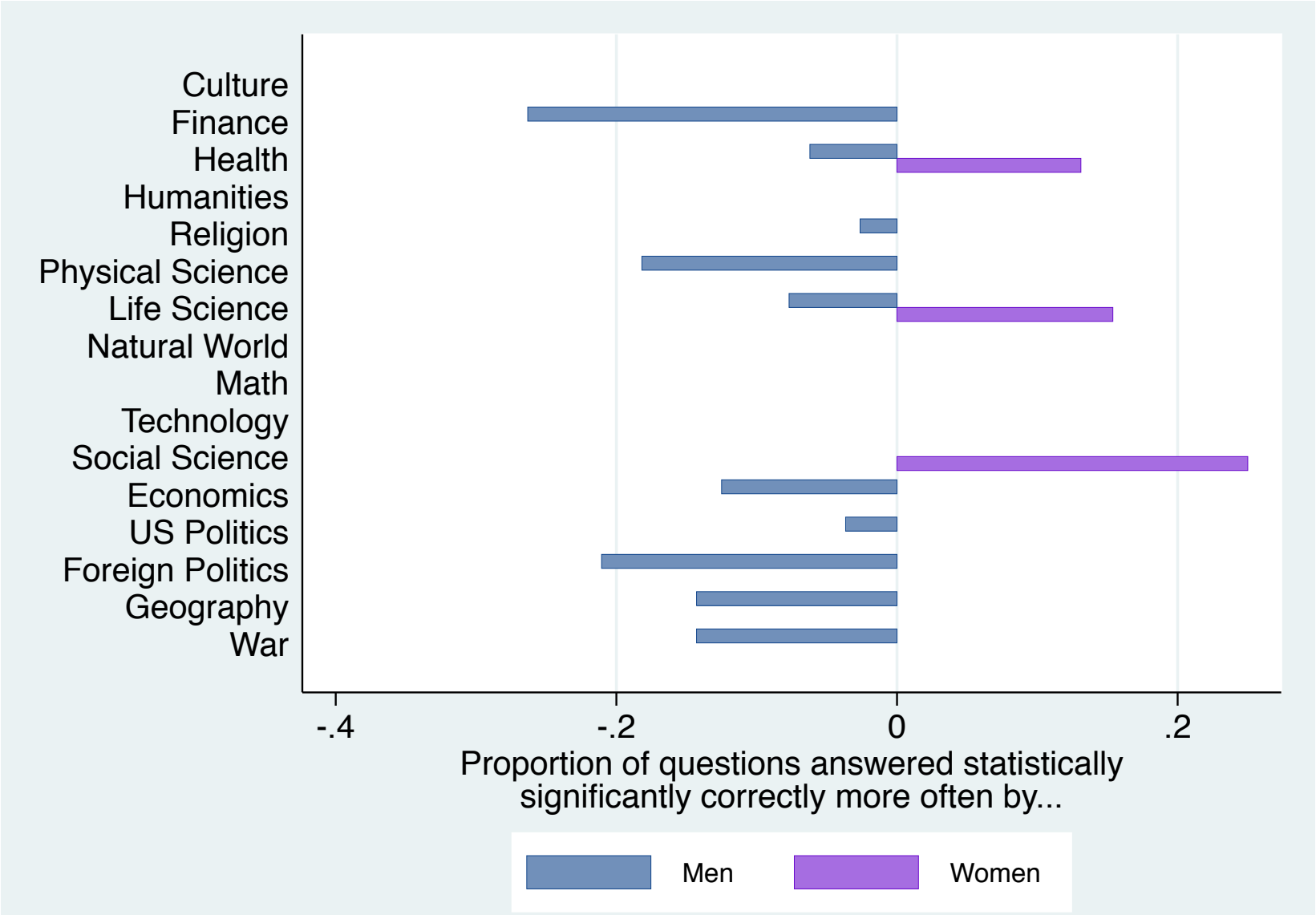
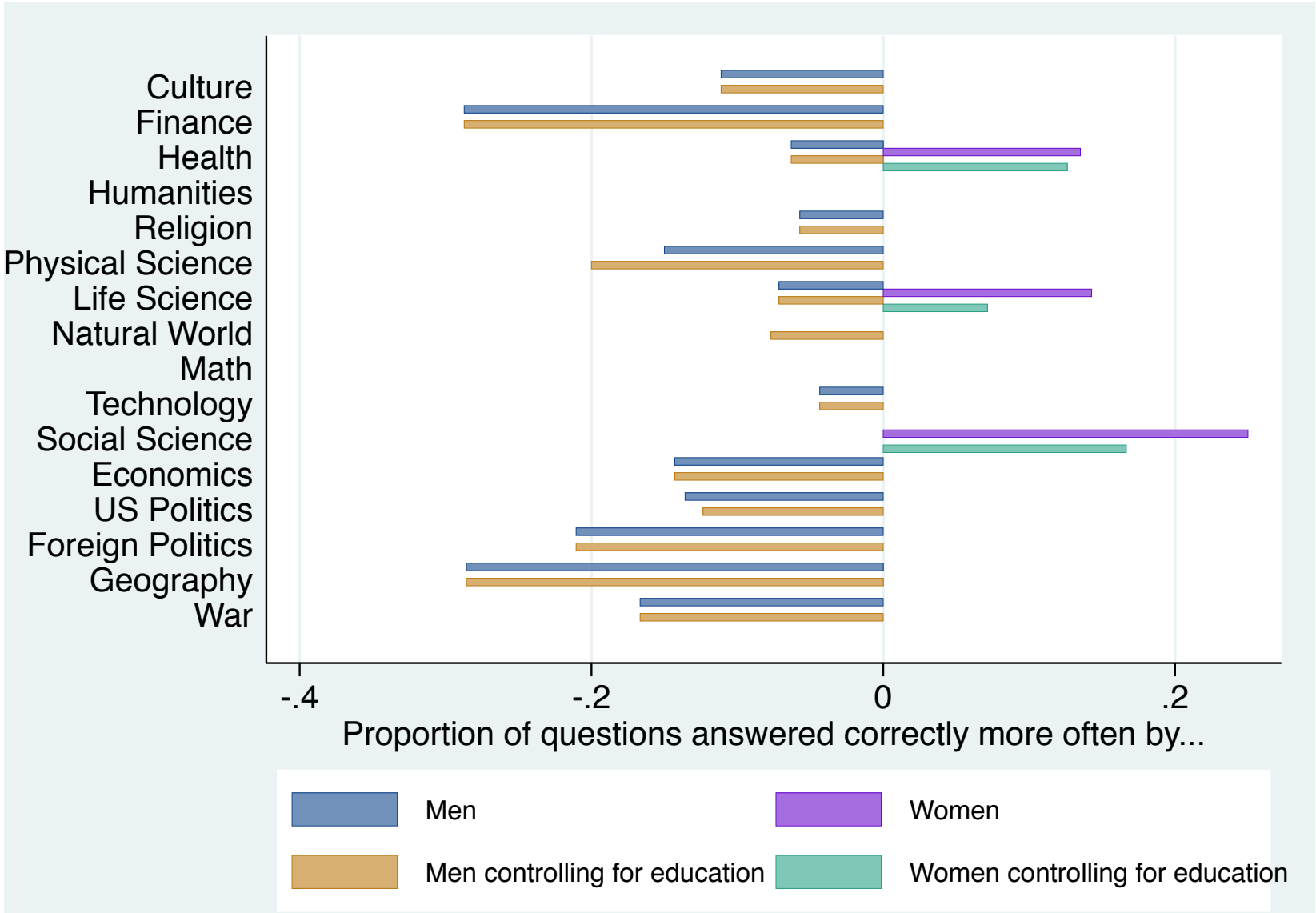


# Controlling for education, men answer greater proportion of questions correctly in 63% domains



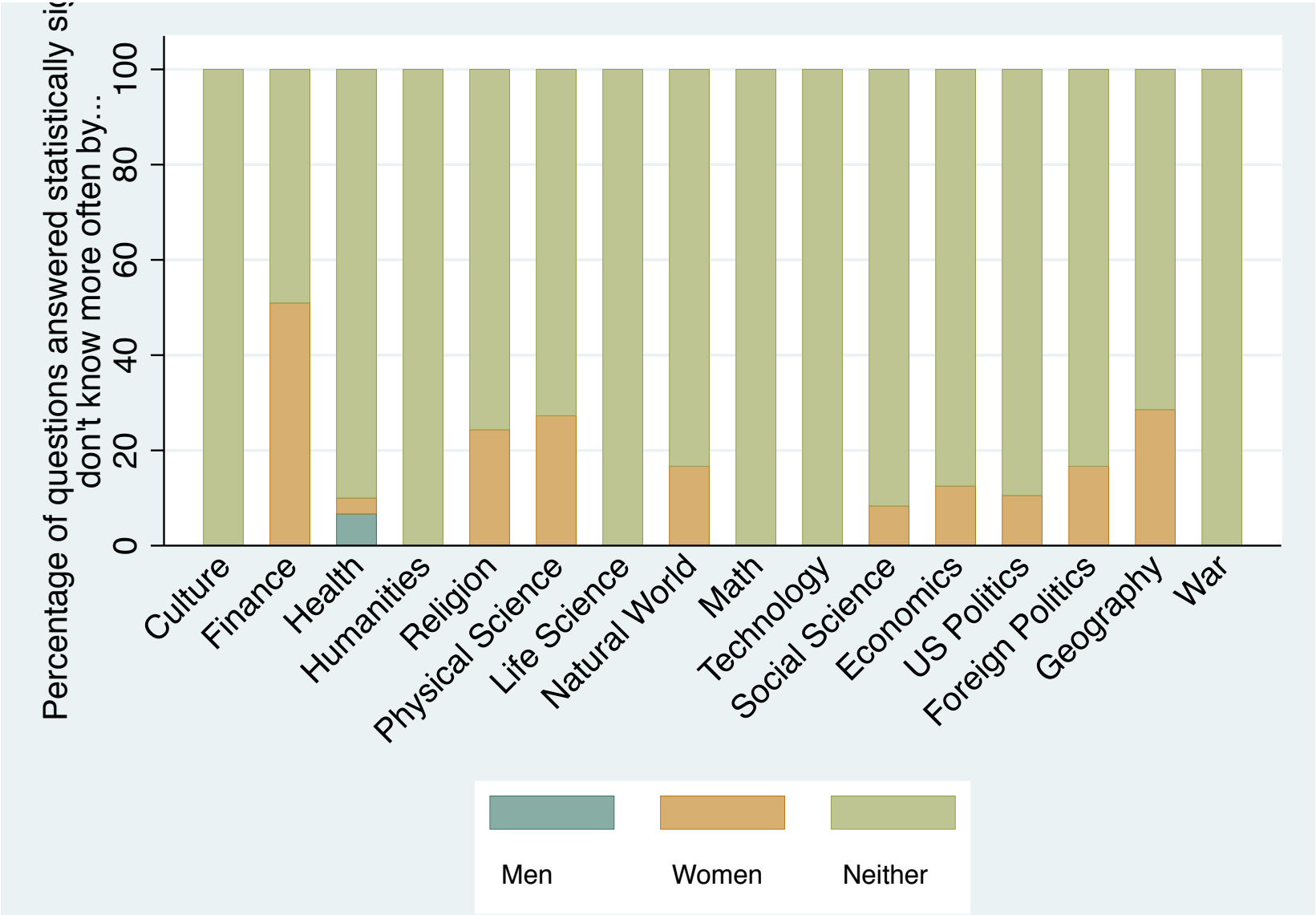
# “Don’t Know” Model

| Factors |
| --- |
| **Gender** |
| Income |
| Race / Ethnicity |
| Age + $age^2$ |
| (Education) |

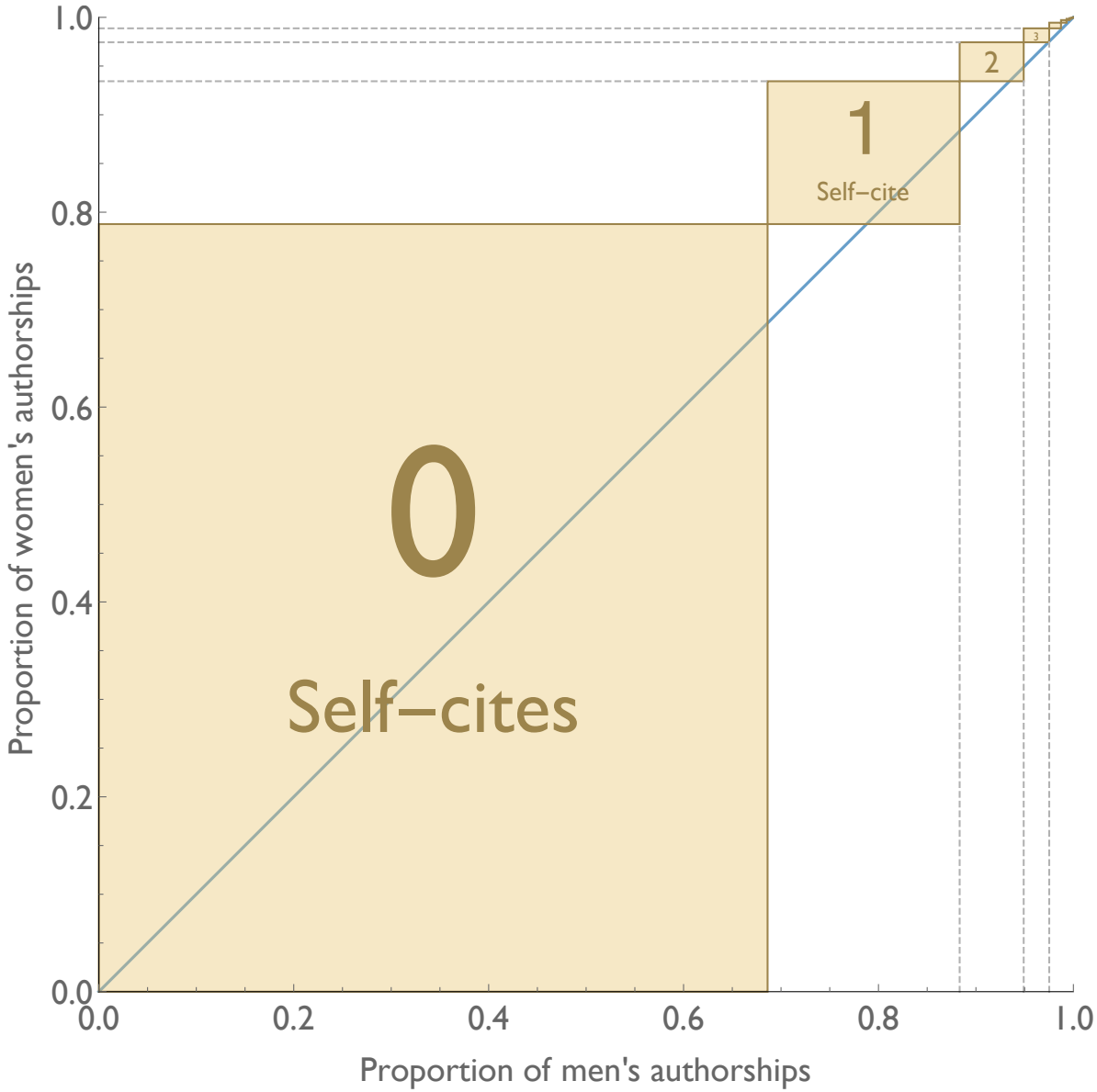
$=$

| Outcome |
| --- |
| Probability that you answer “don’t know” |

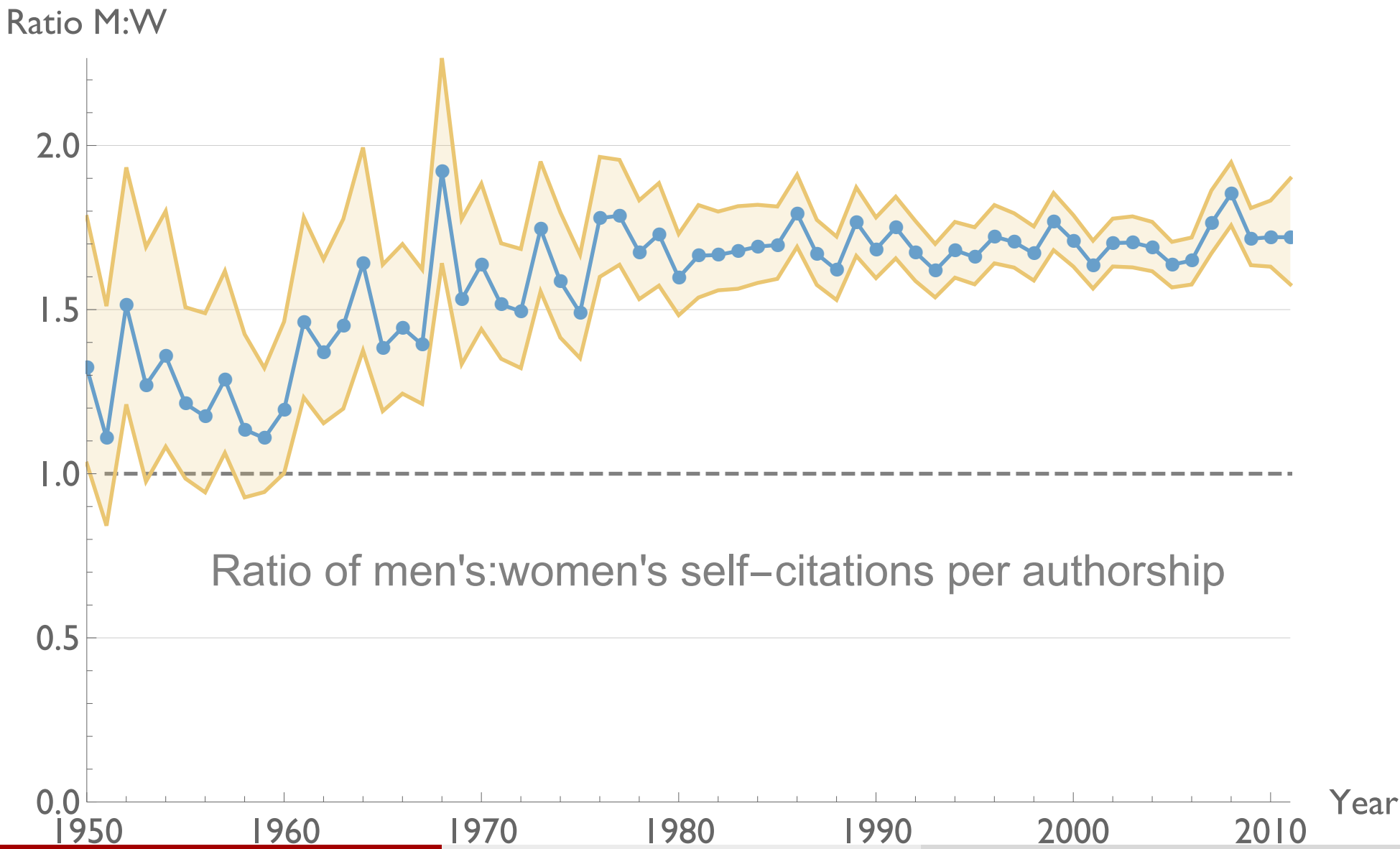
# Controlling for education, women answer greater proportion of questions “don’t know”



# Gender & Self Citation: Proportion with Self Citation



# Gender & Self Citation: Ratio



# Items in Each Domain

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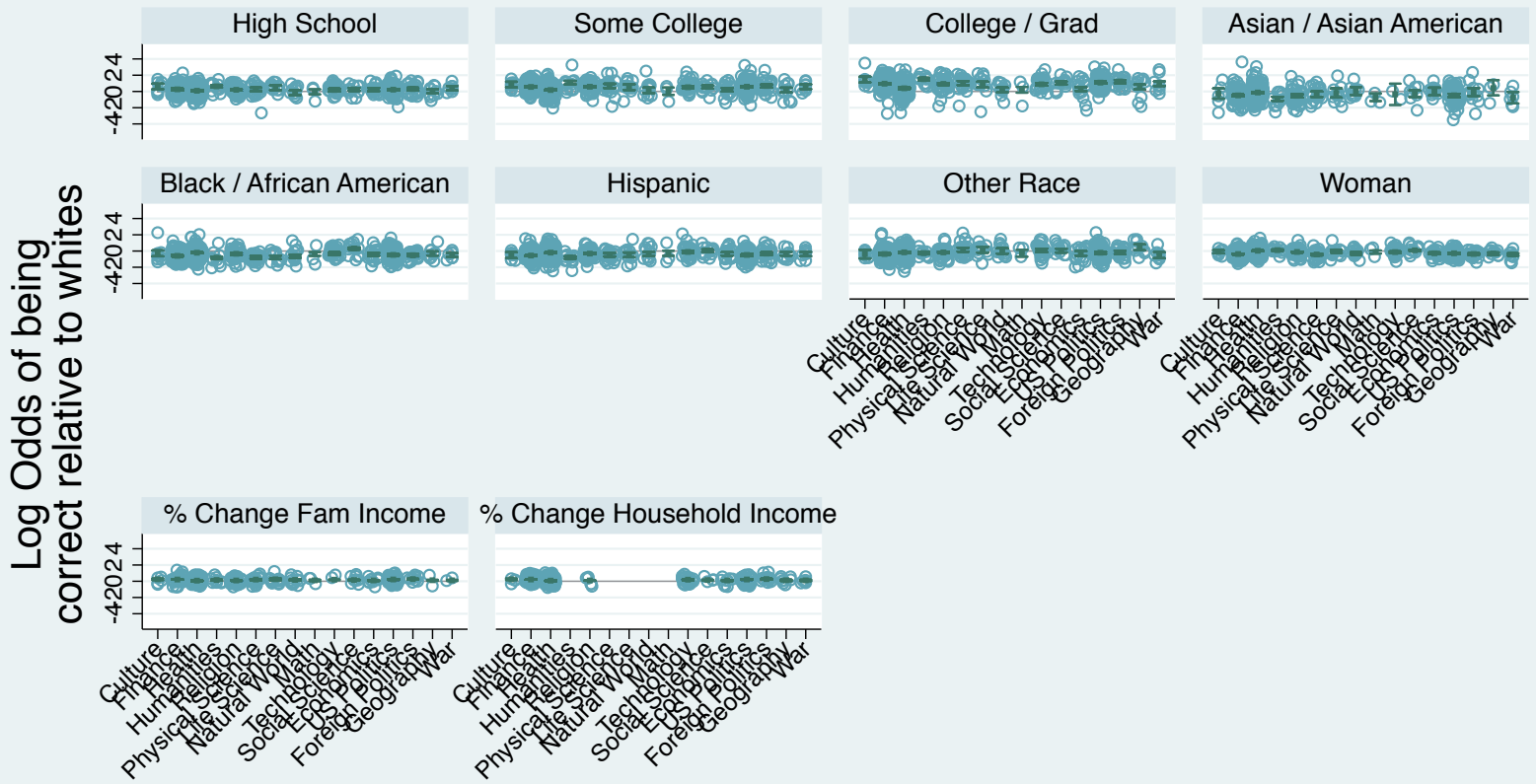
# Correct Knowledge by Race



# Results with Linear Probability Models

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