

Information Inequality: the Gender of Knowledge

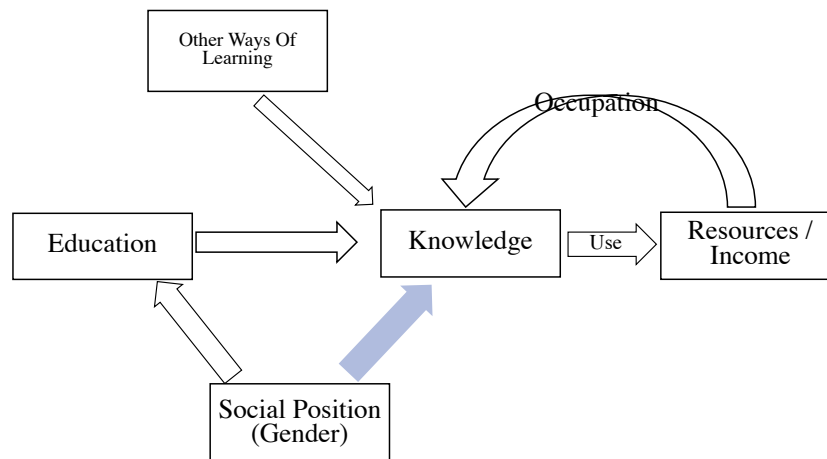
Molly King | Presentation Notes

- I argue that a concept I am calling knowledge inequality is important as both cause and outcome of social inequality.

– knowledge inequality = inequality in the possession and/or usage of information

Why care about knowledge inequality?

1. Differences in knowledge capacity itself are, by definition, a dimension of ‘inequality’;
 - (a) Here I want to note that I do NOT mean to equate knowledge or information capacity with intelligence. Knowledge of facts is only one aspect of knowledge, after all, and IQ measures something more akin to analytic abilities.
2. Knowledge is a potential cause of later inequality in outcomes and access to resources.
 - (a) Information discrepancies enable differential access to resources and institutional positions, thereby causing later inequality as well.
3. Differences in the amount of knowledge people have are influenced by unequal social positions in our society; and
 - (a) In this research I focus on the idea that social status causes knowledge inequality.
 - (b) Specifically, I focus on the impact of gender on knowledge inequality.



Methods

- It is surprising how little we know about the knowledge stock of Americans.
- So I wanted to perform a wide scan analysis of knowledge inequality, looking at who has and does not have knowledge in different domains, and how those inequalities might compare to each other.
- So I set out to answer the research question:

Research Question: How does the gender gap in knowledge vary by domain?

- People have studied knowledge gaps in many of these domains before. What is unique to my study is gathering these domains all together in one comparative framework, allowing us to look at the structured acquisition of knowledge.
- My data include 48 nationally representative data sets from between the years 2005 and 2015, each including at least one knowledge question.
- With such limited knowledge questions in any one of these surveys, one of the things I think is interesting to consider is: what or whose knowledge is selected for inclusion. Knowledge is linked to power, and which knowledge items are included in surveys reflects what knowledge is valued in our society.
- Anyway, I compiled these data from places like main public opinion survey repositories, the General Social Survey and Pew Research Center.
- A question was included if it asked respondents about factual knowledge - a question with a generally agreed-upon answer
- These are true/false or multiple-choice questions that asked things like:
 - — “True or false: A laser is a concentrated soundwave. The answer is false - lasers are concentrated light waves.”
 - — “Who is the vice president?”
- For each question, I mark for each individual whether they got the question correct or incorrect.
- I curated these data and categorized them by domain.
- This resulted in 16 topical domains, which we will see soon in the results.

Model

- For each question, I then use logistic regression to predict the probability that an individual will get the question correct.
- I regressed the outcome of correct answer on the independent variables income, gender, race and ethnicity categories, and controls education categories, and age and age squared.

Factors	Outcome
Gender	Probability
Income	that you get
Race / Ethnicity	the question
Age + age^2	correct
(Education)	

Results

Turning over the page, we will now move on to discussing the results.

How likely are women to get each answer correct compared to men?

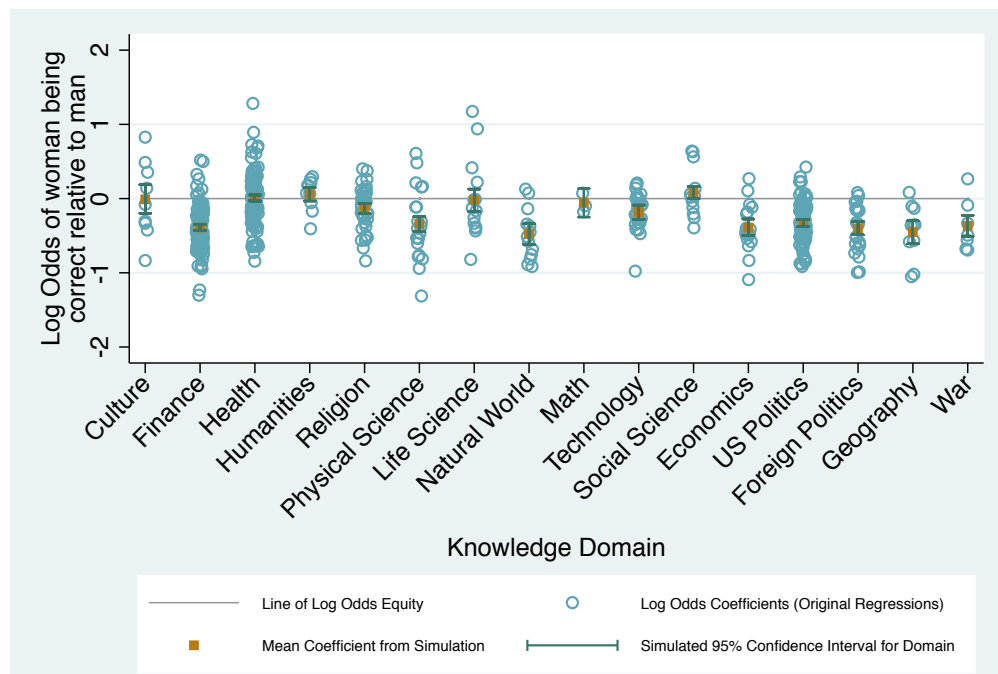


Figure 1: No mean gender difference in 5/16 domains

- So here we see that each open circle represents an individual question. I have taken about 450 questions and divided them into these 16 domains across the x-axis.
- The yellow square is the mean knowledge level within each domain, and the confidence interval represents 95% simulated certainty around that mean for each domain.
- If there were no difference in the average difference between men and women, we would see the confidence interval bar cross the 0 line.
- Here I tested whether gender had a significant effect on knowledge within each entire domain. For each domain, the simulated mean and confidence intervals allow us to see whether there is a significant difference between the 2 gender groups and the direction of that difference.
- While there is no average gender difference in 5 of the 16 domains, men have greater average knowledge in 9 domains.
- Women have greater average knowledge in the domain of social science.
- One interesting difference I would like to focus your attention on is that men have greater average knowledge than women in the domain of religion. This is a surprising result given that U.S. women are much more likely to report that religion is “very important” in their lives, and women are largely responsible for the religious education of children.

What proportion of questions are women more likely to answer correctly?

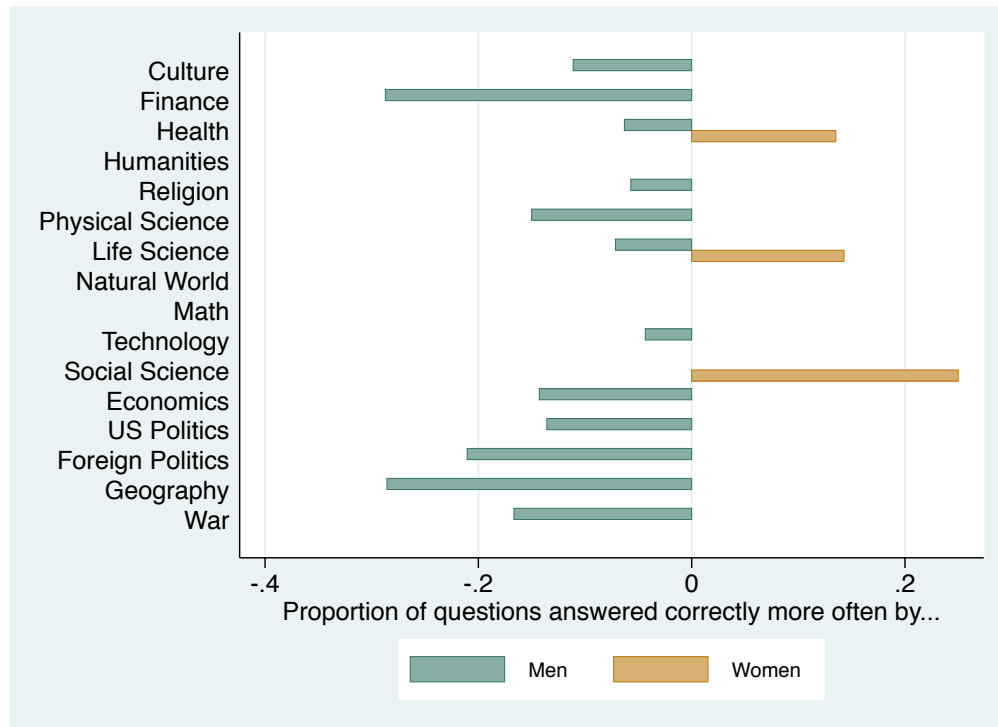


Figure 2: Men answer greater proportion of questions correctly in 63% of domains

- But this first figure doesn't tell us how many of these questions show knowledge differences that are statistically significant.
- So for each of these 450 questions, I tested whether the gender difference in knowledge was significant.
- For example, in the domain of culture, we saw that the individual coefficients clustered fairly evenly around the 0 log odds line.
- However, not all of those coefficients are statistically significant. In this figure, we see from the top bar that men answered 17% of the questions correctly more often than women, such that these differences were statistically significant.
- We also see that women answer a greater proportion of questions correctly in the domain of health.
- One reason we might consider this to be notable is that men's poor health outcomes are typically explained by behavioral differences. Here we see that differences in health outcomes might also be explained by a relatively large disparity in health knowledge.
- Men are particularly advantaged in the domains of finance, foreign politics, and geography.
- Overall, Men answer a greater proportion of questions statistically significantly correctly in 63% of the domains. Women answer a greater proportion of questions correctly in 19% of the domains.

Possible Mechanism

- Different social roles.
- Gap in leisure time
- College major
- Socially acceptable interests
- All filter toward concrete differences in knowledge that have implications for citizenship, occupational chances, and health, as well as many other opportunities to access resources.

Relevance

- Again, which knowledge is deemed important to know, and the acquisition of that knowledge, is all shaped by social structures, institutional contexts, social roles, and status positions. Here i've begun to explore inequalities in those knowledge items that are deemed important to measure by groups in power, an important first step to descriptively understanding inequalities in the knowledge landscape.