Proceedings from the 7-week online

discussion and poll following the

Hard Problems in Social Science

symposium on April 10, 2010

at Harvard University

"Top Ten" Problems[*] in Social Science (according to five separate metrics)

*Problems posed on Facebook, as well as those posed by symposium presenters, included. There were 567 visitors to the poll, but not everyone voted; on average there were about 300 responses per poll item (and different people responded to different items).

	Importance (Most votes for "Extremely")	Net Importance†	Difficulty (Most votes for "Extremely")	Net Difficulty†	"Zec" Score*
1	World peace (FB**: S. Sterling, Apr 17)	World peace (FB: S. Sterling, Apr 17)	World peace (FB: S. Sterling, Apr 17)	Islam and the West (FB: S. Kunwar, May 2)	Black/White skills gap (Fryer)
2	Emergent properties (Kosslyn)	Population growth and sustainability (FB: K. Murlidhar, May 2)	Islam and the West (FB: S. Kunwar, May 2)	World peace (FB: S. Sterling, Apr 17)	Bad collective decision-making (King)
3	Humanity's purpose (FB: S. Rasmussen, Apr 30)	Bad collective decision-making (King)	Population growth and sustainability (FB: K. Murlidhar, May 2)	Population growth and sustainability (FB: K. Murlidhar, May 2)	Digital surveillance and culture change (Bostrom)
4	Population growth and sustainability (FB: K. Murlidhar, May 2)	Resilient institutions (Swidler)	What is consciousness? (FB: C. Aradhye, Apr 28)	What is consciousness? (FB: C. Aradhye, Apr 28)	World peace (FB: S. Sterling, Apr 17)
5	Justice (FB: F. George, Apr 27)	Islam and the West (FB: S. Kunwar, May 2)	Emergent properties (Kosslyn)	Black Swans (Taleb)	Male/female wage gap (Goldin)
6	Bad collective decision-making (King)	Emergent properties (Kosslyn)	Humanity's purpose (FB: S. Rasmussen, Apr 30)	How does the social become biological? (Christakis)	Democratization and international conflict (King)
7	Islam and the West (FB: S. Kunwar, May 2)	Behavior change (Oster)	Justice (FB: F. George, Apr 27)	Downward causality (Kosslyn)	Behavior change (Oster)
8	Digital surveillance and culture change (Bostrom)	Democratization and international conflict (King)	Black Swans (Taleb)	Resilient institutions (Swidler)	Resilient institutions (Swidler)
9	Role of genes in behavior (Oster)	Digital surveillance and culture change (Bostrom)	How to decide what's "good" for society (Zeckhauser)	Justice (FB: F. George, Apr 27)	Emergent properties (Kosslyn)
10	How to decide what's "good" for society (Zeckhauser)	Persistence of ideologies and norms (Goldin)	Knowledge acquisition (Carey)	Role of genes in behavior (Oster)	Continuity/violence (Bearman)

†Number of votes for *above average* [importance or difficulty] minus number of votes for *below average* [importance or difficulty].

*Inspired by Richard Zeckhauser's presentation in which he argues that a) importance should trump difficulty, and b) difficulty is more vice than virtue when it comes to important problems. The calculation here doubles the net importance rating and then subtracts the net difficulty.

**FB designates problems posed by Facebook Users; all other problems posed during symposium.

Ranking of "Expert" Problems
Part 1

(12 primary problems posed during the presentations)

	Importance					Difficulty					Zec*
	# Votes for "Extremely"	"Very"	"Some-what"	"Not at all"	Net[†]	"Extremely"	"Very"	"Some-what"	"Not at all"	Net[†]	
Resilient institutions (Swidler)	83	114	44	16	137	47	105	27	12	113	161
Behavior change (Oster)	82	99	37	29	115	50	82	48	24	60	170
Increasing collective wisdom (Bostrom)	82	70	55	31	66	51	77	52	37	39	93
Black/White skills gap (Fryer)	74	91	45	23	97	37	66	67	42	-6	206
Aggregating information (Zeckhauser)	70	86	50	19	87	47	89	42	21	73	101
Knowledge acquisition (Carey)	66	76	48	22	72	67	93	38	15	107	37
Male/female wage gap (Goldin)	66	74	52	36	52	21	45	82	64	-80	184
Social → biological (Christakis)	65	102	62	18	87	65	101	32	13	121	53
Black swans (Taleb)	63	88	49	16	86	74	95	27	11	131	41
Continuity/violence (Bearman)	47	105	54	12	86	28	88	60	20	36	136
Post-treatment bias in research (King)	36	74	66	21	23	42	104	56	14	76	-30
Clustering in social networks (Fowler)	23	68	60	30	1	22	81	58	23	22	-20

[†]Number of votes for *above average* [importance or difficulty] minus number of votes for *below average* [importance or difficulty].
*Inspired by Richard Zeckhauser's presentation in which he argues that a) importance should trump difficulty, and b) difficulty is more vice than virtue when it comes to important problems. The calculation here doubles the net importance rating and then subtracts the net difficulty.

Ranking of "Expert" Problems
Part 2

(additional problems posed during the presentations
and during the Q&A/Discussion session)

	Importance					Difficulty					Zec*
	Votes for "Ex-tremely"	Very	Some-what	Not at all	Net†	Ex-treme-ly	Very	Some-what	Not at all	Net†	
Emergent properties (Kosslyn)	94	80	35	18	121	107	17	27	5	92	150
Bad collective decision-making (King)	79	106	28	10	147	44	106	31	21	98	196
Digital surveillance and culture change (Bostrom)	75	90	43	19	103	30	77	71	25	11	195
Role of genes in behavior (Oster)	74	77	41	21	89	64	104	42	17	109	69
How to decide what's "good" for society (Zeckhauser)	73	81	48	29	77	68	92	39	21	100	45
Biggest falsehood (Bostrom)	65	64	65	52	12	43	61	72	37	-5	29
Persistence of ideologies and norms (Goldin)	63	94	39	17	101	42	98	37	19	84	59
Origin of tastes and wants (Christakis)	63	78	56	18	67	54	91	39	25	81	53
Great sucker problem (Taleb)	63	61	57	38	29	40	70	46	36	28	30
Causes of renaissances/enlightenments (Bostrom)	60	77	48	20	69	51	95	31	16	99	39
Downward causality (Kosslyn)	56	96	43	15	94	64	103	32	20	115	73
Democratization and international conflict (King)	50	99	31	8	110	20	77	51	9	37	183
Understanding beliefs in the impossible (Carey)	49	71	46	44	30	45	83	39	30	59	1
Effects of changing human nature slightly (Bostrom)	48	83	47	29	55	53	75	36	20	72	38
Ethnic diversity and civil war (King)	46	96	58	18	66	17	58	83	35	-43	175
Assessing academic worth (Bostrom)	29	38	76	97	-106	17	59	102	55	-81	-131
Causes of student achievement (King)	28	73	69	35	3	9	48	89	54	-86	92
International institutions & internat'l cooperation (King)	24	78	80	21	1	14	61	67	30	-22	24
Trade openness and state failure (King)	24	99	61	21	41	15	41	74	37	-55	137
Effects of health vs. health inventions (King)	23	51	80	31	-37	15	58	69	24	-20	-54
Evolutionary origin of over-confidence (Fowler)	14	32	76	84	-114	22	45	73	44	-50	-178

†Number of votes for *above average* [importance or difficulty] minus number of votes for *below average* [importance or difficulty].

*Inspired by Richard Zeckhauser's presentation in which he argues that a) importance should trump difficulty, and b) difficulty is more vice than virtue when it comes to important problems. The calculation here doubles the net importance rating and then subtracts the net difficulty.

Text of poll questions on following pages…

Hard Problems in Social Science poll

Please rate each problem for its difficulty and importance. (Please note that any inaccuracies in these statements, or misinterpretations of the speakers' intended meaning, are entirely the fault of the author of the survey.)

HARD PROBLEMS POSED DURING INDIVIDUAL PRESENTATIONS (IN ORDER):

Christakis (Apr 10): How and why does the "social" become "biological"? That is, how is it that social factors (for instance, whether we are rich or poor, or whether we have many or few friends) affect our bodies -- as individuals and as a species? What genetic and epigenetic mechanisms might underlie such effects? Is it possible that social and cultural evolution (domesticating animals, living in cities, having smaller families, inventing vaccines) affects our genes, perhaps as much as our genes affect social and cultural phenomena?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Swidler (Apr 10): How do societies create or re-build effective, powerful, and resilient institutions (for instance, governments)? What do social scientists have to contribute to the analysis of why, for example, in Iraq or Afghanistan, certain local authorities such as chiefs or clan elders retain their influence, while many imported institutions fail?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Taleb (Apr 10): How can we be robust against "Black Swans"; that is, how can we (1) identify domains where these

consequential rare events play a large role (these are too rare for any statistical models track them properly), and (2) instead of predicting Black Swans, build systems and societies that can resist their shocks.

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Bearman (Apr 10): How do we understand why social processes, in particular civil violence, either persist over time or suddenly change over time?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Bostrom (Apr 10): What is the biggest falsehood promulgated within the social sciences today?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Bostrom (Apr 10): How can one measure academic worth? Citation analysis? Panels of silver-haired luminaries? Is there something better?

	Don't know/Don't understand	Not at all	Somewhat	About average	Very	Extremely

problem

How "hard" is this
problem?
How "important" is this
problem?

Bostrom (Apr 10): How can humanity increase its collective wisdom?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

King (Apr 10): What is the relationship between democratization and international conflict? Does democratization reduce international conflict?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

King (Apr 10): What is the relationship between ethnic diversity in developing countries and civil war? Does ethnic diversity in developing countries cause civil war?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "important" is this problem?						

King (Apr 10): What is the relationship between trade openness and the risk of state failure? Does trade openness reduce the risk of state failure?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

King (Apr 10): What is the relationship between strong international institutions and international cooperation? Do strong international institutions lead to or result from international cooperation?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

King (Apr 10): How can we distinguish between (1) the effect of your health on others and (2) the effect of *interventions* to improve your health on others?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "important" is this problem?						

King (Apr 10): Is individual student achievement caused by (1) students' socioeconomic characteristics or (2) their peers' average achievement (i.e., does tutoring a subgroup help others and then feed back)? (Or both?)

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

King (Apr 10): A major methodological problem is how to avoid (or ameliorate) post-treatment bias in big social science questions. Post-treatment bias occurs when the causal ordering among predictors is ambiguous or wrong or when, in an attempt to control for confounding variables, one controls away a consequential variable.

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Oster (Apr 10): How can we induce people to make behavior changes that are known to have large and positive health benefits?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this						

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
problem?						
How "important" is this problem?						

Goldin (Apr 10): Why do so many female workers still earn less than male workers in their profession and why, at the very top of the game, do women often make a lot less than men proportionately?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Carey (Apr 10): How do we understand the human capacity to create and articulate knowledge?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Fowler (Apr 10): What causes clustering in social networks; for example, how much is it the effect of shared environment (individuals in the cluster are connected by some shared context that isn't obvious); homophily (the tendency of similar people to like and associate with each other); or — most interesting — influence? If it's influence, how does it work?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Fryer (Apr 10): How do we reduce the "skill gap" between Blacks and Whites in America? We know that individuals with higher test scores in eighth grade have better life outcomes (higher wages, less unemployment, lower incarceration rates, better health), regardless of race; how do we get all eighth graders to achieve at the same (high) level, regardless of their race?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Zeckhauser (Apr 10): A critical problem for groups, ranging from the dyad to society as a whole, is how to aggregate information possessed by different individuals so that the group can use that information to make the best decisions.

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

ADDITIONAL "HARD PROBLEMS" POSED BY SPEAKERS DURING THE SYMPOSIUM FINAL DISCUSSION SESSION:

Kosslyn (Apr 10): The classic problem of emergent properties: How do low-level events produce emergent properties

(for example, how do interactions among individual people produce economic systems; how do interactions among neurons produce minds)?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Kosslyn (Apr 10): "The problem of downward causality": How do events at a more abstract level affect the constituent elements that give rise to those events in the first place? For example, interactions among individuals create an economic system, but the status of the economy (e.g., a recession) in turn affects those very same individuals.

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Oster (Apr 10): What is the role of genetics in solving social science problems (for example, how important are genes for understanding behavior)?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

King (Apr 10): How do we understand and grapple with collective decision-making where the outcome for everyone is suboptimal (e.g., the proliferation of weapons of mass destruction)?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Zeckhauser (Apr 10): If we know that individuals are susceptible to all kinds of biases and don't always make rational decisions, how do we decide "what's good" (this gets us into issues of paternalism and the like)?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Carey (Apr 10): How do we understand ideologies, culturally, evolutionarily, and so on? People believe in the supernatural; what does it mean to believe in something we think is impossible?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Taleb (Apr 10): The great sucker problem: Why don't we (as individuals, but also as institutions or societies) learn from our mistakes and accept the incomputability of "Black Swans" (very rare events) and the fragility of some systems? Why does it take so long for obvious knowledge (such as the unpredictability of Black Swans) to lead to change in textbooks and policy?

	Don't know/Don't	Not at all	Somewhat	About average	Very	Extremely

	understand problem					
How "hard" is this problem?						
How "important" is this problem?						

Bostrom (Apr 10): What enables small populations occasionally to achieve disproportionately for small periods of time (e.g., the renaissance in Florence, the Scottish enlightenment, and so forth), and is this something we can learn to re-create deliberately?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Bostrom (Apr 10): What are the effects of changing human nature very slightly (that is, if some pharmacological intervention produces a small change but very many people use it, will this make a dramatic change to our social structure, or only a correspondingly small one)?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Bostrom (Apr 10): As more of our behavior becomes "transparent" (e.g., through ubiquitous surveillance, digital records, and data mining) will this change our cultural and social institutions, and if so, how?

	Don't know/Don't understand	Not at all	Somewhat	About average	Very	Extremely

problem

How "hard" is this problem?

How "important" is this problem?

Fowler (Apr 10): What is the evolutionary origin of overconfidence?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Christakis (Apr 10): Where do wants and tastes come from? We often take as a given that people want things (jobs, prestige, products, etc.), and that they then go about figuring out how these wants are met (by markets, institutions, elections, etc.). But where do these wants and desires come from? We often simply assume that people maximize their 'utility,' but this presumes that people simply derive utility from things without exploring why people want what they want in the first place. How do biological, psychological, and sociological factors conspire to make us want what we want?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Goldin (Apr 10): How do we understand the persistence of ideologies and norms? Whom do they serve? Why do they exist and why do they occasionally disappear?

	Don't know/Don't understand	Not at all	Somewhat	About average	Very	Extremely

problem

How "hard" is this
problem?

How "important" is this
problem?

(Optional) Is there a "hard problem in social science" missing from this list? What is it?

(Optional) Where do you live?

Africa

Asia

Australia

Europe

North America

South America

Other (if you want to be more specific):

(Optional) Tell us about yourself: Age, gender, nationality, profession, academic interests...

(Optional) Would you like us to email you the final results in June? If so, please provide your email address here. We will not sell or distribute your information or use it for any purpose other than to keep you informed about this project.

DONE!

Hard Problems posed on the Facebook page

Below are paraphrases of the hard problems posed on Facebook that have generated discussion by the most number of people so far (updated June 1, 2010).

Please note that some of these are hard social/societal problems, but not necessarily "social science" questions. (There may, however, be social science findings that can contribute to an understanding of the problem, or help lead to a resolution.)

Please rate each problem for its difficulty and importance.

(Please note that any inaccuracies in these statements, or misinterpretations of the Facebook posters' intended meanings, are entirely the fault of the authors of the survey.)

This poll will close at 10:00 pm (22:00) GMT (Greenwich Mean Time), Wednesday, June 2nd.

(R. Nimmo, May 14) To what extent is meritocracy an ideology for the legitimation of social stratification?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

(Posed on Facebook and by email) Peace in the Middle East: resolving the Israeli-Palestinian conflict.

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "important" is this problem?						

(Posed by A. Mahendroo, May 3) How does one change a corrupt social structure from within?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

(Posed by M. Yasir, May 4 [and others]) Are there profound differences between humans and other animals (in terms of language, culture, tool use, theory of mind), and if so, what accounts for these differences (what genes, what historical/evolutionary developments)?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

(Posed by S. Kunwar, May 2) How do we develop a better intercultural relationship between the Islamic and Western worlds?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "important" is this problem?						

(Posed by K. Murlidhar, May 2) How we can achieve inclusive growth in the population and sustainable development?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

(Posed by S. Rasmussen, Apr 30) Humanity's Purpose: Within our sciences we should be seeking a purpose worthy of our species....We need something that pulls us together, something besides survival, or an enemy, something worthy of our abilities...

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

(Posed by C. Aradhye, Apr 28) What is intelligence, what is consciousness, are thoughts more than chemical signals?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "important" is this problem?						

(Posed by F. George, Apr 27) Do humans really want justice? We say we want justice, democracy, and fairness, but our actions tend to belie our ideals. Can we ever achieve true justice, or is such an ideal incompatible with our basic human nature?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

(Posed by S. Sterling, Apr 17) How do we achieve world peace?

	Don't know/Don't understand problem	Not at all	Somewhat	About average	Very	Extremely
How "hard" is this problem?						
How "important" is this problem?						

Have you already completed the poll that listed the problems posed by the experts (Christakis, Swidler, Taleb, etc.) at the April 10th symposium? (This was the only poll that was available until May 3rd.)

If so, please click on "skip" below.

If not, please click on "continue" below.

SKIP the poll listing the hard problems posed by the experts.

CONTINUE to the poll that listed the problems posed by the experts.

Next

SKIP the poll listing the problems posed by the experts at April 10th symposium

We ask the questions below on the poll with the expert problems (from the symposium), too. If you submitted your email address on that poll, and you submit it here, we can easily link up your responses (and don't need you to answer these questions again). We will not use your email address for any purpose other than to link up the surveys and to email you the results.

If you did not complete that other poll, or did not provide your email address previously, we'd be grateful if you could answer the other questions below.

(Optional) Would you like us to email you the final results in June? If so, please provide your email address here. We will not sell or distribute your information or use it for any purpose other than to keep you informed about this project.

(Optional) Is there a "hard problem in social science" missing from this list? What is it?

(Optional) Where do you live?

Africa
Asia
Australia
Europe
North America
South America
Other (if you want to be more specific):

(Optional) Tell us about yourself: Age, gender, nationality, profession, academic interests...

Prev   Next

Thanks for your help!

[Click here to proceed](#) to the poll listing the problems posed by the experts at the April 10th symposium.

Otherwise, click on the "Done" button below. Thank you for completing this survey!

(If you have questions please email jmsheph@fas.harvard.edu.)

Prev   DONE!