

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION
AFRICA AMERICAS **ASIA PACIFIC** EUROPE MIDDLE EAST

Pollution Leads to Drop in Life Span in Northern China, Research Finds



Evidence on the impact of sustained exposure to air pollution on life expectancy from China's Huai River policy

Yuyu Chen^{a,1}, Avraham Ebenstein^{b,1}, Michael Greenstone^{c,d,1,2}, and Hongbin Li^{e,1}

This paper's findings suggest that an arbitrary Chinese policy that greatly increases total suspended particulates (TSPs) air pollution is causing the 500 million residents of Northern China to lose more than 2.5 billion life years of life expectancy. The quasi-experimental empirical approach is based on China's Huai River policy, which provided free winter heating via the provision of coal for boilers in cities north of the Huai River but denied heat to the south. Using a regression discontinuity design based on distance from the Huai River, we find that ambient concentrations of TSPs are about $184 \mu\text{g}/\text{m}^3$ [95% confidence interval (CI): 61, 307] or 55% higher in the north. Further, the results indicate that life expectancies are about 5.5 y (95% CI: 0.8, 10.2) lower in the north owing to an increased incidence of cardiorespiratory mortality. More generally, the analysis suggests that long-term exposure to an additional $100 \mu\text{g}/\text{m}^3$ of TSPs is associated with a reduction in life expectancy at birth of about 3.0 y (95% CI: 0.4, 5.6).

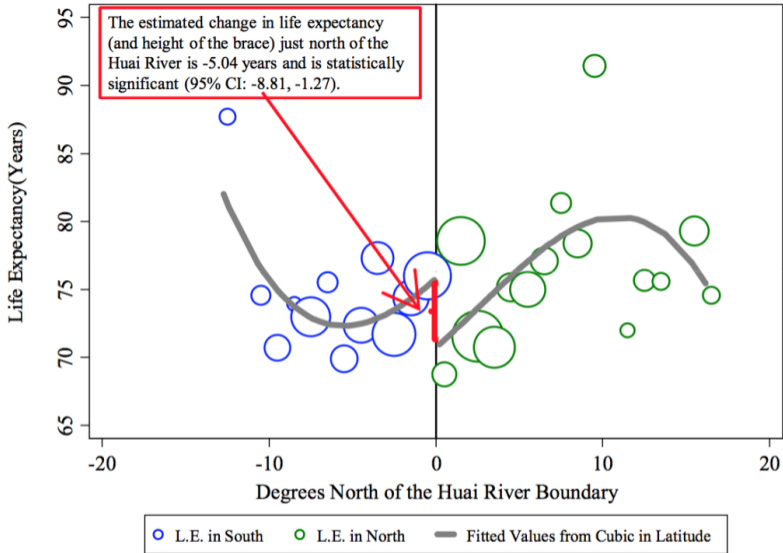


Fig. 3. The plotted line reports the fitted values from a regression of life expectancy on a cubic in latitude using the sample of DSP locations, weighted by the population at each location.

The Statistical Crisis in Science

Andrew Gelman

Department of Statistics and Department of Political Science
Columbia University, New York

Chief Economists' workshop, London
20 May 2016

What really happened during Barack Obama's reelection campaign?





Open Tray

hulu
PLUS



Quickplay

Join the VP Debate
We're polling LIVE, 9 PM ET

A large advertisement featuring a close-up of two men in suits, Joe Biden on the left and Mitt Romney on the right, against a blue background. The text at the bottom reads "Join the VP Debate" and "We're polling LIVE, 9 PM ET".

UFC 153

Press Conf

New Trials

An advertisement for the game New Trials, showing a character on a motorcycle in a dark, atmospheric setting.

Kinect Central

An advertisement for Kinect Central, featuring a stylized character with glowing blue energy spheres in their hands.

Advertisement for a man's face, likely related to a game or app.

A close-up portrait of a man with a beard and dark hair, looking directly at the camera.

ADVERTISEMENT

Election 2012

election 2012

news

rock the vote

polls

video



Xbox Poll Results



VP Poll Results



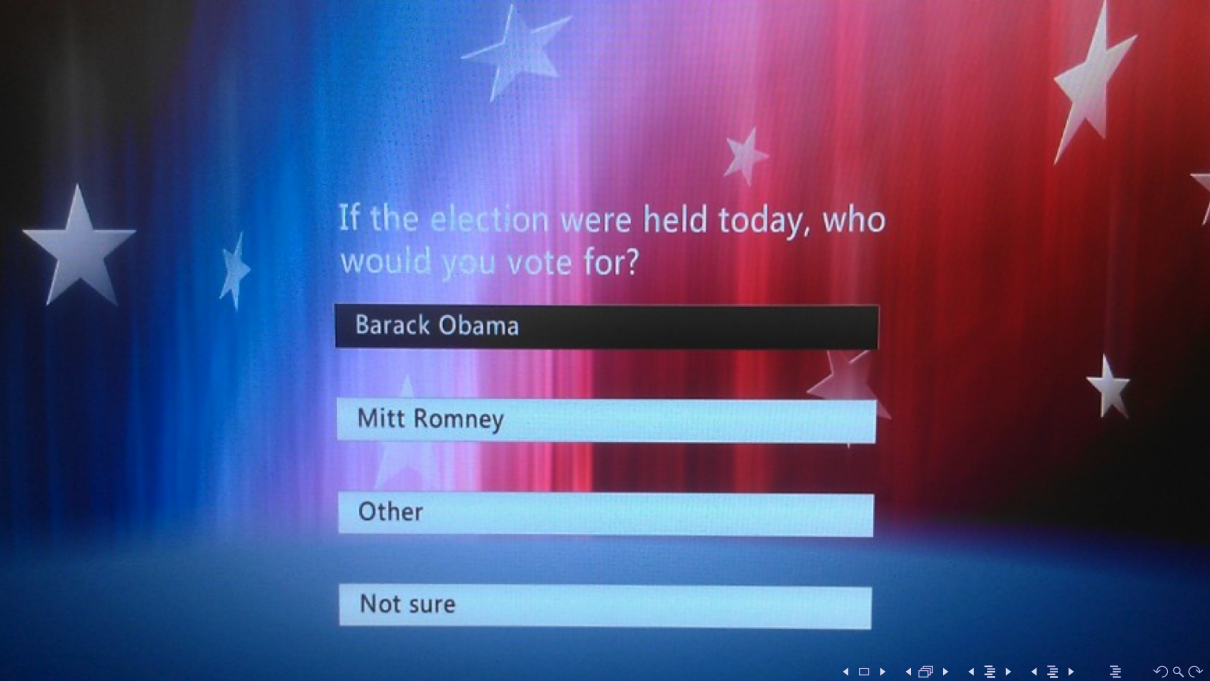
Debate#3 Results



About YouGov

Current

A Select **B** Back



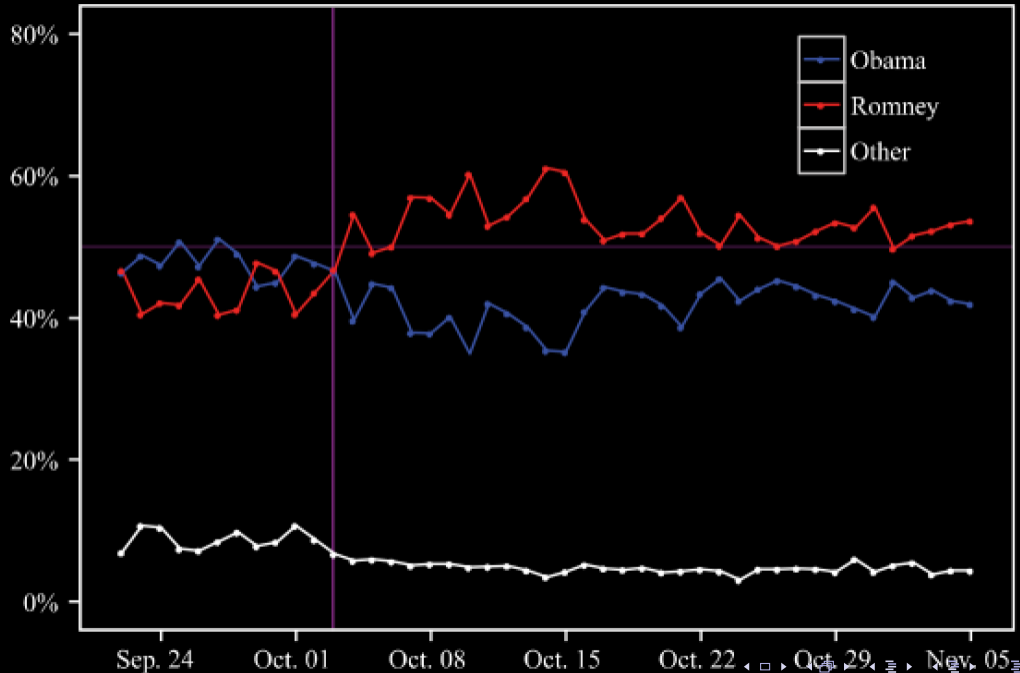
If the election were held today, who would you vote for?

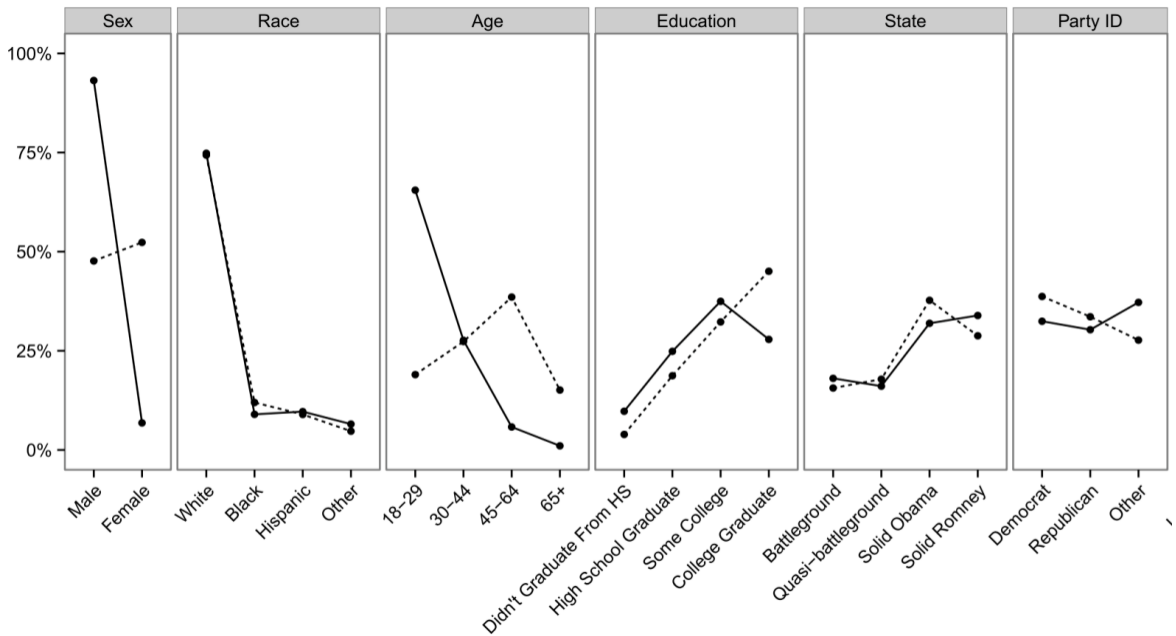
Barack Obama

Mitt Romney

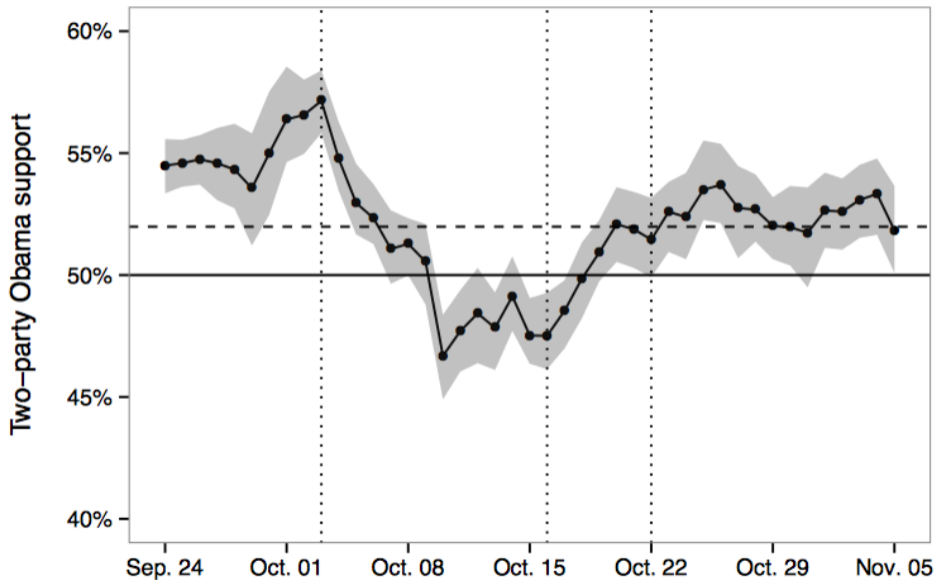
Other

Not sure





Xbox estimates, adjusting for demographics



Romney winning the debate on 3 Oct 2012

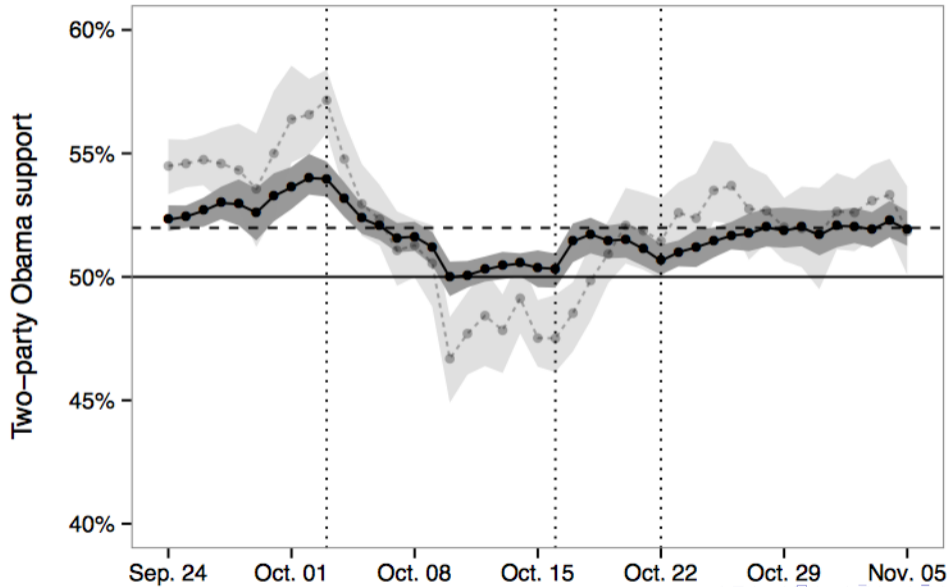


The pundits speak



- ▶ Karl Rove, *Wall Street Journal*, 7 Oct: "Mr. Romney's bounce is significant."
- ▶ Nate Silver, *New York Times*, 6 Oct: "Mr. Romney has not only improved his own standing but also taken voters away from Mr. Obama's column."

Xbox estimates, adjusting for demographics and partisanship





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Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Short report

Influence of Valentine's Day and Halloween on Birth Timing

Becca R. Levy*, Pil H. Chung, Martin D. Slade

Yale University, School of Public Health, Division of Social & Behavioral Sciences, 60 College Street, New Haven, CT 06520-8034, United States

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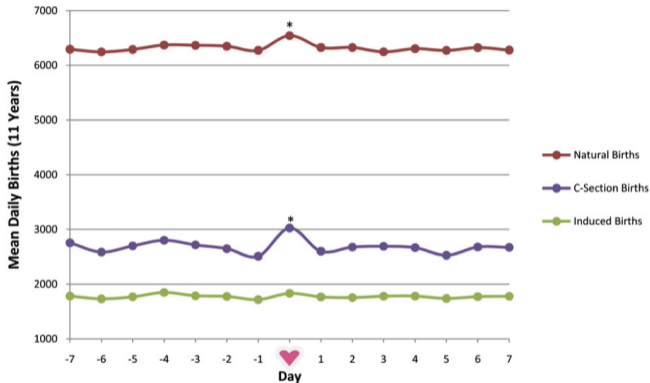
Keywords:

United States
Culture
Birth timing
Holidays
Pregnancy

ABSTRACT

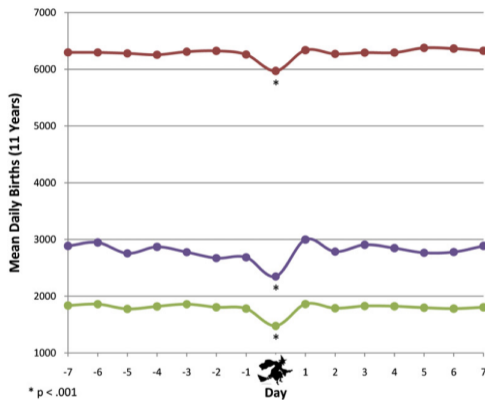
It is known that cultural representations, in the form of stereotypes, can influence functional health. We predicted that the influence of cultural representations, in the form of salient holidays, would extend to birth timing. On Valentine's Day, which conveys positive symbolism, there was a 3.6% increase in spontaneous births and a 12.1% increase in cesarean births. Whereas, on Halloween, which conveys negative symbolism, there was a 5.3% decrease in spontaneous births and a 16.9% decrease in cesarean births. These effects reached significance at $p < .0001$, after adjusting for year and day of the week. The sample was based on birth-certificate information for all births in the United States within one week on either side of each holiday across 11 years. The Valentine's-Day window included 1,676,217 births and the Halloween window included 1,800,304 births. Our findings raise the possibility that pregnancy outcomes

Valentine's Day: Two-Week Window



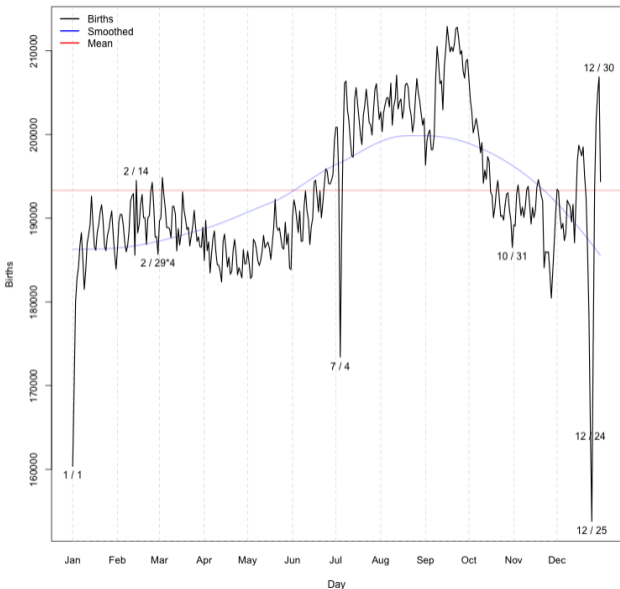
* p < .001

Halloween: Two-Week Window



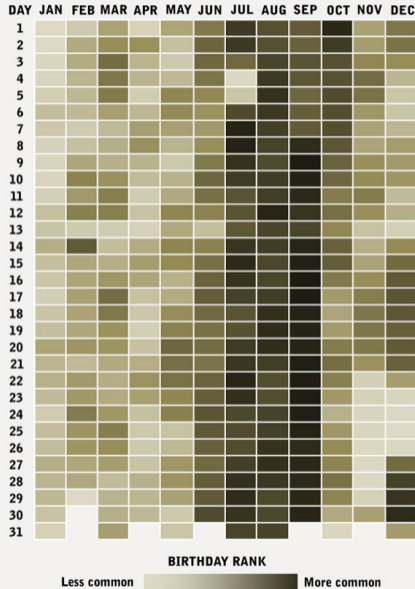
* p < .001

Births by Day of Year

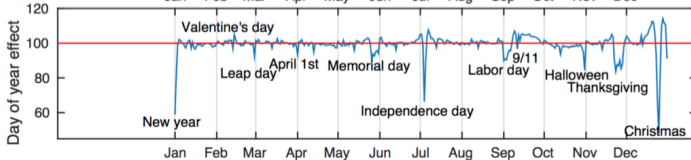
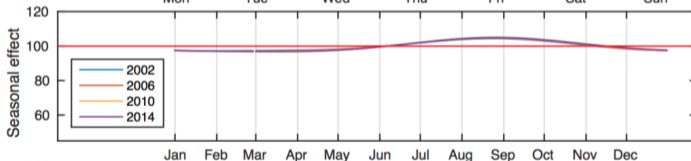
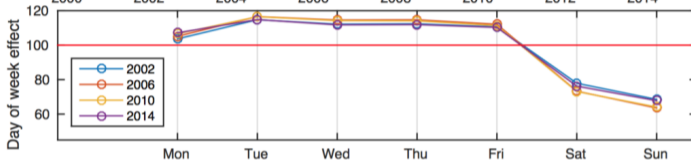
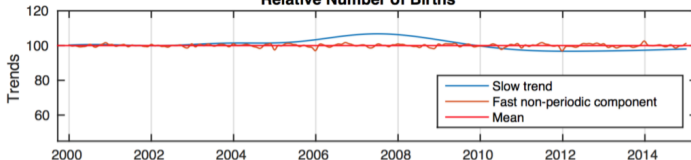


Source: National Vital Statistics System natality data, as provided by Google BigQuery. Graph by Chris Mulligan (chmullig.com)

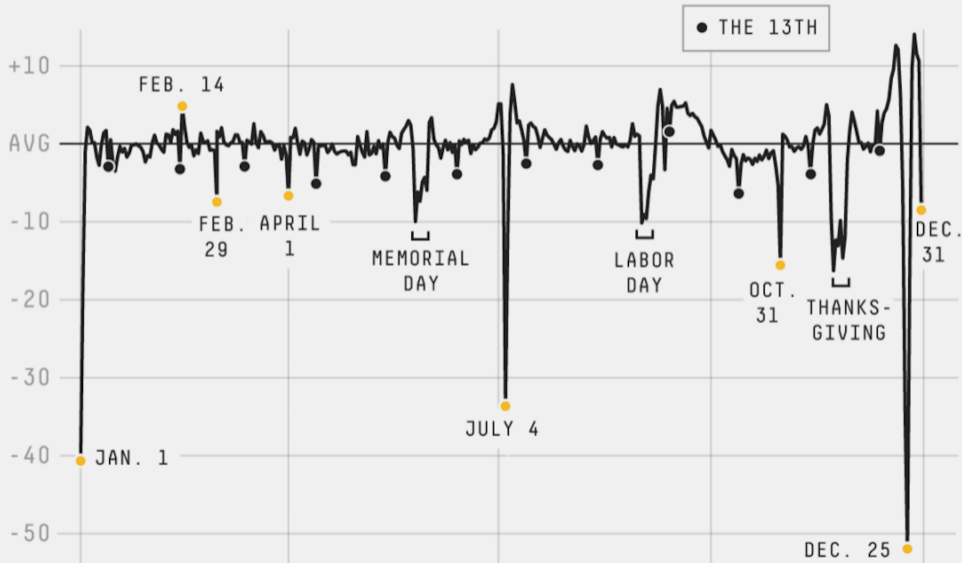
Which Birth Dates Are Most Common?



Relative Number of Births



U.S. births relative to average adjusted for time, seasonality and day of week, 2000-2014



The blessing of dimensionality

- ▶ We learned by looking at 366 questions at once!
- ▶ Next, see what happens when you study one question at a time ...

The Fluctuating Female Vote: Politics, Religion, and the Ovulatory Cycle

**Kristina M. Durante¹, Ashley Rae¹, and
Vladas Griskevicius²**

¹College of Business, University of Texas, San Antonio, and ²Carlson School of Management, University of Minnesota

Abstract

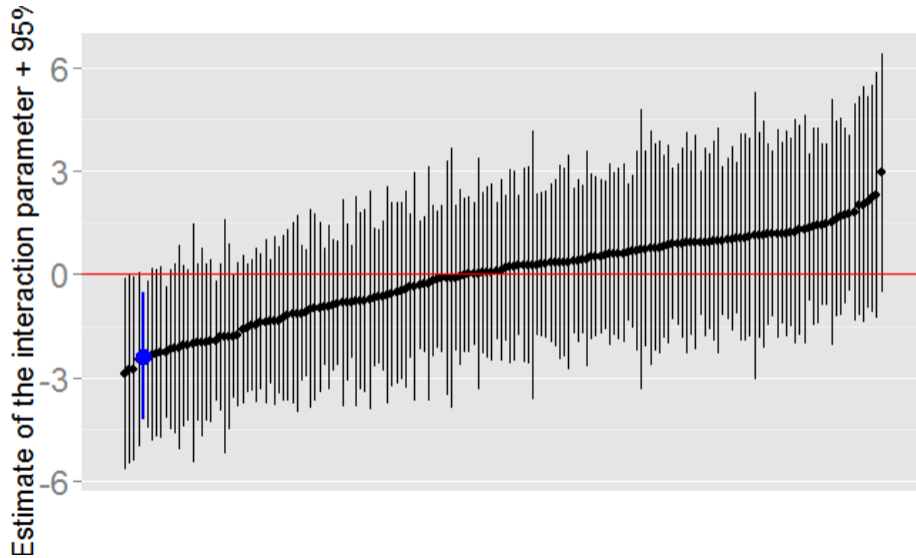
Each month, many women experience an ovulatory cycle that regulates fertility. Although research has found that this cycle influences women's mating preferences, we proposed that it might also change women's political and religious views. Building on theory suggesting that political and religious orientation are linked to reproductive goals, we tested how fertility influenced women's politics, religiosity, and voting in the 2012 U.S. presidential election. In two studies with large and diverse samples, ovulation had drastically different effects on single women and women in committed relationships. Ovulation led single women to become more liberal, less religious, and more likely to vote for Barack Obama. In contrast, ovulation led women in committed relationships to become more conservative, more religious, and more likely to vote for Mitt Romney. In addition, ovulation-induced changes in political orientation mediated women's voting behavior. Overall, the ovulatory cycle not only influences women's politics but also appears to do so

Choices!

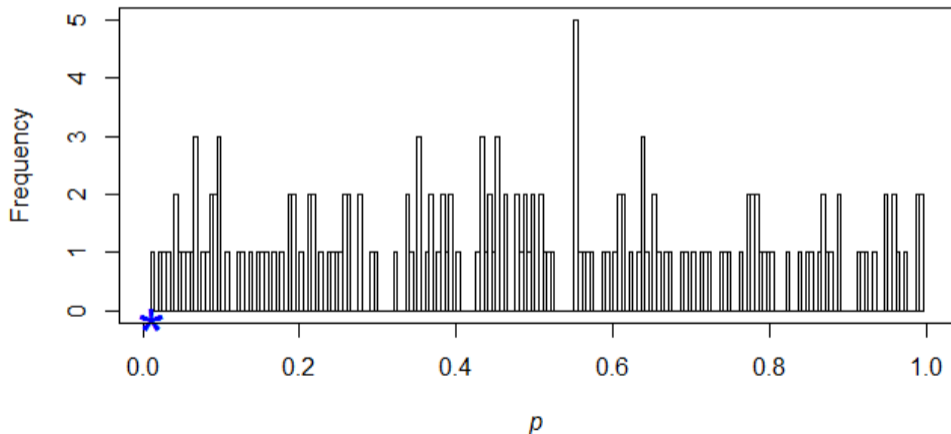
1. Exclusion criteria based on cycle length (3 options)
2. Exclusion criteria based on “How sure are you?” response (2)
3. Cycle day assessment (3)
4. Fertility assessment (4)
5. Relationship status assessment (3)

168 possibilities (after excluding some contradictory combinations)

Living in the multiverse



Histogram of p -values for fertility x relationship



From an email I received:

Complaining that subjects in an experiment were not randomly sampled is what freshmen do before they take their first psychology class. I really ***hope*** you why that is an absurd criticism – especially of authors who never claimed that their study generalized to all humans.

Labor Market Returns to Early Childhood Stimulation: a 20-year Followup to an Experimental Intervention in Jamaica

Paul Gertler, James Heckman, Rodrigo Pinto, Arianna Zanolini, Christel Vermeersch, Susan Walker, Susan M. Chang, Sally Grantham-McGregor

We find large effects on the earnings of participants from a randomized intervention that gave psychosocial stimulation to stunted Jamaican toddlers living in poverty. The intervention consisted of one-hour weekly visits from community Jamaican health workers over a 2-year period that taught parenting skills and encouraged mothers to interact and play with their children in ways that would develop their children's cognitive and personality skills. We re-interviewed the study participants 20 years after the intervention. Stimulation increased the average earnings of participants by 42 percent. Treatment group earnings caught up to the earnings of a matched non-stunted comparison group. These findings show that psychosocial stimulation early in childhood in disadvantaged settings can have substantial effects on labor market outcomes and reduce later life inequality.

Childhood Intervention and Earnings



Andrew Gelman

Overall, I have no reason to doubt the direction of the effect, namely, that psychosocial stimulation should be good. But I'm skeptical of the claim that income differed by 42%, due to the reason of the [statistical significance filter](#). In section 2.3, the authors are doing lots of hypothesizing based on some comparisons being statistically significant and others being non-significant. There's nothing wrong with speculation, but at some point you're chasing noise and picking winners, which leads to overestimates of magnitudes of effects.

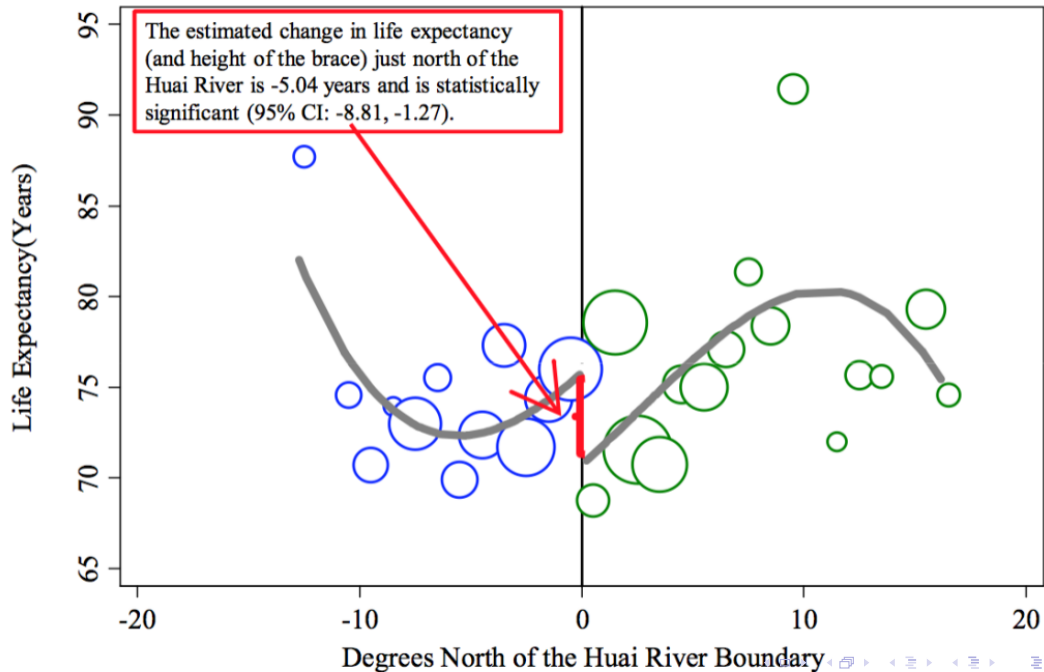
Labor market returns to an early childhood stimulation intervention in Jamaica

Paul Gertler^{1,2,*}, James Heckman^{3,4,5}, Rodrigo Pinto³, Arianna Zanolini³, Christel Vermeersch⁶, Susan Walker⁷, Susan M. Chang⁷, Sally Grantham-McGregor⁸

A substantial literature shows that U.S. early childhood interventions have important long-term economic benefits. However, there is little evidence on this question for developing countries. We report substantial effects on the earnings of participants in a randomized intervention conducted in 1986–1987 that gave psychosocial stimulation to growth-stunted Jamaican toddlers. The intervention consisted of weekly visits from community health workers over a 2-year period that taught parenting skills and encouraged mothers and children to interact in ways that develop cognitive and socioemotional skills. The authors reinterviewed 105 out of 129 study participants 20 years later and found that the intervention increased earnings by 25%, enough for them to catch up to the earnings of a nonstunted comparison group identified at baseline (65 out of 84 participants).

Statistical errors are reinforced by statistical ideology

- ▶ Deterministic thinking
- ▶ “Statistical significance”
- ▶ “Unbiased estimation”
- ▶ “Rigor”



The sociology of junk science

- ▶ The problem with peer review is the peers
- ▶ What do fraud, sloppy-on-purpose research, and incompetence often have in common?

The sociology of junk science

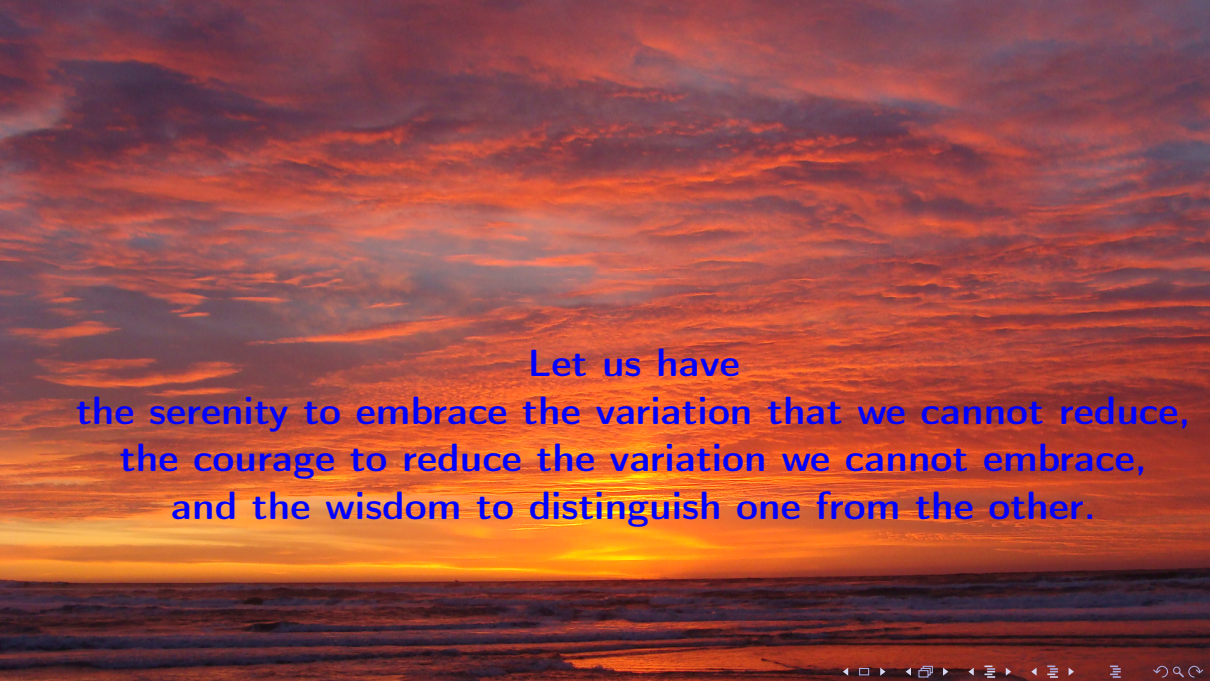
- ▶ The problem with peer review is the peers
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The sociology of junk science

- ▶ The problem with peer review is the peers
- ▶ What do fraud, sloppy-on-purpose research, and incompetence often have in common?

The way forward

- ▶ Changing the incentives
- ▶ Study effects in context, not in isolation
- ▶ Being “Bayesian”



Let us have
the serenity to embrace the variation that we cannot reduce,
the courage to reduce the variation we cannot embrace,
and the wisdom to distinguish one from the other.