Does Body Language Shape Who You Are?

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AMY CUDDY
YOUR BODY LANGUAGE SHAPES WHO YOU ARE
Effect on Risk Taking

Effect size (Cohen-d)

- Original: Carney, Cuddy, Yap (2010)
  n=21
  n=100

Small effect ($d_{33\%}$)
The Power of the “Power Pose”

Amy Cuddy’s famous finding is the latest example of scientific overreach.

By Andrew Gelman and Kaiser Fung

Nick says:
January 27, 2016 at 7:44 pm (Edit)

Oh, and while we're on the subject of sloppy reporting, have a look at 10.1111/j.1540-4560.2005.00405.x and calculate the t statistics and associated p values.
This Old Stereotype: The Pervasiveness and Persistence of the Elderly Stereotype

Amy J. C. Cuddy*
Princeton University

Michael I. Norton
Massachusetts Institute of Technology

Susan T. Fiske
Princeton University

Americans stereotype elderly people as warm and incompetent, following from perceptions of them as noncompetitive and low status, respectively. This article extends existing research regarding stereotyping of older people in two ways. First, we discuss whether the mixed elderly stereotype is unique to American culture. Data from six non-U.S. countries, including three collectivist cultures, demonstrate elderly stereotypes are consistent across varied cultures. Second, we investigate
Results

We created a composite score of warmth by averaging the three warmth items, \( \alpha = .81 \). A one-way ANOVA revealed the predicted main effect on this score, \( F(2, 52) = 3.93, \ p < .03 \), such that participants rated the high-incompetence elderly person as warmer (\( M = 7.47, SD = .73 \)) than the low-incompetence (\( M = 6.85, SD = 1.28 \)) and control (\( M = 6.59, SD = .87 \)) elderly targets. Paired comparisons supported these findings, that the high-incompetence elderly person was rated as warmer than both the low-incompetence and control elderly targets, \( t(35) = 5.03 \) and \( t(34) = 11.14 \), respectively, both \( ps < .01 \). In addition, reflecting the persistence of the stereotype of elderly people as incompetent, participants saw targets as equally (in)competent in all conditions, \( F(2, 52) = 1.32, \ n.s. \).

---

It’s between-person. But then don’t you need to know the N’s for each of the 3 conditions? If we assume N=18, 18, 19, then the correct t statistics are \( \frac{(7.47 - 6.85)}{\sqrt{(0.73^2/18) + (1.28^2/18)}} = 1.79 \) and \( \frac{(7.47 - 6.59)}{\sqrt{(0.73^2/18) + (0.87^2/19)}} = 3.34 \), respectively.
It’s not just silly psychology studies!

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.
The estimated change in life expectancy (and height of the brace) just north of the Huai River is -5.04 years and is statistically significant (95% CI: -8.81, -1.27).

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.
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\textsuperscript{a,1}, Avraham Ebenstein\textsuperscript{b,1}, Michael Greenstone\textsuperscript{c,d,1,2}, and Hongbin Li\textsuperscript{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 $\mu$g/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 $\mu$g/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).
The estimated change in life expectancy (and height of the brace) just north of the Huai River is -5.04 years and is statistically significant (95% CI: -8.81, -1.27).

**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.
Crimes against data

Andrew Gelman

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

ESRC Research Methods Festival, 7 July 2016
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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Article history:
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Keywords:
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Birth timing
Holidays
Pregnancy
Biocultural
Birth

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 1,809,304 births. Our findings raise the possibility that pregnant women may be able to control the timing of spontaneous births, in contrast to the traditional assumption, and that scheduled births are also influenced by the cultural representations of the two holidays.

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The published graphs show data from 30 days in the year.
### Which Birth Dates Are Most Common?

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The blessing of dimensionality

- We learned by looking at 366 questions at once!
- Consider the alternative . . .
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 recent research has shown that the ovulatory cycle influences women’s mating preferences, we proposed that it might also change women’s political views. Building on theory suggesting that political and religious orientation are linked to reproductive strategies, we tested the hypothesis that ovulation would influence women’s political views. Using 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 and more likely to vote for Mitt Romney. In addition, ovulation-induced changes in political views were more pronounced for single women than for women in committed relationships.
Results

Experiment 2a. A t test was computed to ascertain the effect of the priming manipulation on walking speed. Participants in the elderly priming condition ($M = 8.28$ s) had a slower walking speed compared to participants in the neutral priming condition ($M = 7.30$ s), $t(28) = 2.86, p < .01$, as predicted.

Experiment 2b. In the replication, analyses revealed that participants in the elderly priming condition ($M = 8.20$ s) again had a slower walking speed compared to participants in the neutral priming condition ($M = 7.23$ s), $t(28) = 2.16, p < .05$. 
Daniel Kahneman (2011):

“When I describe priming studies to audiences, the reaction is often disbelief ... The idea you should focus on, however, is that disbelief is not an option. The results are not made up, nor are they statistical flukes. You have no choice but to accept that the major conclusions of these studies are true.”
Elderly-Related Words Prime Slow Walking (#15)

Reference to Original Report of Finding


Title

Elderly-Related Words Prime Slow Walking
The attempted replication

Average time (secs) to walk 32ft, as a function of priming stereotype condition

<table>
<thead>
<tr>
<th>Condition</th>
<th>Average Walking Time (secs)</th>
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<tbody>
<tr>
<td>Elderly</td>
<td>7.8</td>
</tr>
<tr>
<td>Neutral</td>
<td>8.4</td>
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Daniel Kahneman (2011):

“When I describe priming studies to audiences, the reaction is often disbelief ... The idea you should focus on, however, is that disbelief is not an option. The results are not made up, nor are they statistical flukes. You have no choice but to accept that the major conclusions of these studies are true.”

Wagenmakers et al. (2014):

“[After] a long series of failed replications ... disbelief does in fact remain an option.”
Alan Turing (1950):

“I assume that the reader is familiar with the idea of extra-sensory perception, and the meaning of the four items of it, viz. telepathy, clairvoyance, precognition and psycho-kinesis. These disturbing phenomena seem to deny all our usual scientific ideas. How we should like to discredit them! Unfortunately the statistical evidence, at least for telepathy, is overwhelming.”
This Week in *Psychological Science* (TWiPS)

The links below take you to the journal via the APS website. If not already logged in, you will be redirected to log-in using your last name (Gelman) and Member ID (8167).

**Turning Body and Self Inside Out: Visualized Heartbeats Alter Bodily Self-Consciousness and Tactile Perception**

*Jane Elizabeth Aspell, Lukas Heydrich, Guillaume Marillier, Tom Lavanchy, Bruno Herbelin, and Olaf Blanke*

Studies of body perception have mostly focused on manipulations of exteroceptive cues (e.g., vision and touch); however, interoceptive cues (i.e., representations of internal bodily states) may be just as important for self-perception. Participants viewed a virtual body or a rectangle, each of which had a flashing outline that was synchronous or asynchronous with the participant's own heartbeat. Self-identification was stronger for people viewing the virtual body with the synchronous flashing outline than for those viewing the body with the asynchronous flashing outline or for those viewing the rectangles. This suggests that both interoceptive and exteroceptive cues play important roles in bodily self-perception.

**Aging 5 Years in 5 Minutes: The Effect of Taking a Memory Test on Older Adults' Subjective Age**

*Matthew L. Hughes, Lisa Geraci, and Ross L. De Forrest*

Subjective age -- how old people feel -- is related to psychological and physical well-being. In this study, the researchers examined whether common memory-testing procedures influence adults' subjective age. Older and younger adults rated their subjective age before and after taking a memory test. Older adults reported feeling older after taking the memory test, but younger adults did not. A follow-up study found that...

“Aging 5 Years in 5 Minutes: The Effect of Taking a Memory Test on Older Adults’ Subjective Age”

“The Double-Edged Sword of Grandiose Narcissism: Implications for Successful and Unsuccessful Leadership Among U.S. Presidents”

“On the Nature and Nurture of Intelligence and Specific Cognitive Abilities: The More Heritable, the More Culture Dependent”

“Beauty at the Ballot Box: Disease Threats Predict Preferences for Physically Attractive Leaders”

“Shaping Attention With Reward: Effects of Reward on Space-and Object-Based Selection”

“It Pays to Be Herr Kaiser: Germans With Noble-Sounding Surnames More Often Work as Managers Than as Employees”
This week in Psychological Science

- $N = 17$
- $N = 57$
- $N = 42$
- $N = 7,582$
- $N = 123 + 156 + 66$
- $N = 47$
- $N = 222,924$
Living in the multiverse

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 recent studies show that the cycle influences women’s mating preferences, we proposed that it might also change women’s political views. Building on theory suggesting that political and religious orientation are linked to reproductive fitness and how fertility influenced women’s politics, religiosity, and voting in the 2012 U.S. presidential election, we analyzed 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 Obama. In contrast, ovulation led women in committed relationships to become more conservative, more religious, and more likely to vote for Romney.
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
Living in the multiverse

Histogram of $p$-values for fertility x relationship

Frequency

$p$

0 0.2 0.4 0.6 0.8 1.0

0 1 2 3 4 5
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.
Within-person studies
What can we learn from statistical significance?

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 recent research suggests that the ovulatory 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 reproduction, we hypothesized that ovulation had different effects on different women depending on their relationships. With large and diverse samples, ovulation had drastically different effects on single women and those in committed relationships. Ovulation led single women to become more liberal, less religious, and more likely to support candidates like Obama. In contrast, ovulation led women in committed relationships to become more conservative, more religious, and more likely to support candidates like Romney.
This is what "power = 0.06" looks like.
Get used to it.

Estimated effect size

Type S error probability: If the estimate is statistically significant, it has a 24% chance of having the wrong sign.

Exaggeration ratio: If the estimate is statistically significant, it must be at least 9 times higher than the true effect size.
Political science!

- Monthly cycle and voting
- Fat arms and political attitudes
- Subliminal smiley faces
- College football
- Shark attacks

- What if it were all true??
Statistical errors are reinforced by statistical ideology

- Deterministic thinking
- “Statistical significance”
- “Unbiased estimation”
- “Rigor”
The estimated change in life expectancy (and height of the brace) just north of the Huai River is -5.04 years and is statistically significant (95% CI: -8.81, -1.27).

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 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.