

CURATION, TRUST, AND IMPACT: MAKING SOCIAL SCIENCE RESEARCH TRANSPARENT AND REPRODUCIBLE



Florio Arguillas Cornell University


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KEY TAKEAWAYS



The social sciences are concerned with understanding, and improving conditions for, society and individuals.



Public trust in social science research can be enhanced by transparency and reproducibility.



Skilled curation contributes to transparency and reproducibility and by extension to the integrity and quality of science.

The Effects of Canvassing, Telephone Calls, and Direct Mail on Voter Turnout: A Field Experiment

ALAN S. GERBER and DONALD P. GREEN *Yale University*

We report the results of a randomized field experiment involving voters in New Haven, Connecticut. Nonpartisan get-out-the-vote efforts using personal canvassing, direct mail, and telephone calls shortly before the election. A variety of substantive messages were used. Voter turnout was increased by canvassing, slightly by direct mail, and not at all by telephone calls. The long-term retrenchment in voter turnout is partly attributable to the decline in mobilization.

During the last half-century, a dramatic transformation has occurred in the manner in which voters are mobilized. The election campaigns described by Gosnell (1937), Sayre and Kaufman (1960, chap. 6), and Wolfinger (1974, chap. 4) relied heavily on face-to-face contact between voters and those seeking their support. Notably absent from such accounts are professional campaign consultants, direct mail vendors, and commercial phone banks, all of which have gradually replaced work performed by party activists. The advent of modern campaign tactics (Broder 1971; Ware 1985) has coincided with a decline in the proportion of adults who report working for a political party. Based on an annual aggregation of Roper surveys between 1973 and 1994, Putnam (2000, 41) reports a steady decline in this proportion: Whereas 6% of the public reported working for a political party in the early 1970s, just 3% did so in the mid-1990s.

At the same time, there has been a marked decline in the size and vitality of nonpartisan organizations. In the mid-1960s, 2.4 of every 1,000 women over the age of 20 belonged to the League of Women Voters, compared to .79 in 1998 (Putnam 2000, 438–44). A similar fate has befallen such civic organizations as the Lions, Rotary, and Kiwanis Clubs, which have experienced sharp membership declines since the 1960s. Due to the changing character of both partisan and nonpartisan organizations, voter mobilization has become increasingly impersonal, and messages that once might have been delivered in person are now communicated using mass marketing techniques.

The decline of personal mobilization has arguably contributed to the erosion of voter turnout in the United States since the 1960s. This hypothesis is related to, yet distinct from, Rosenstone and Hansen's (1993) contention that diminishing rates of turnout are a result of a decline in the volume of mobilization

activity. As Alford and Wolfinger (1992) point out in their review of the literature, when, as in the case of the 1960s, there has been a high proportion of voters who are mobilized by (ANES) respondents, the response to political mobilization is high. In contrast, when mobilization is impersonal, the response is low. This trend lines consistently with the theory of rational choice, which predicts that people will only mobilize if the benefits exceed the costs. Our hypothesis is that the decline in voter turnout is due to the decline in the proportion of adults who report working for a political party. Based on an annual aggregation of Roper surveys between 1973 and 1994, Putnam (2000, 41) reports a steady decline in this proportion: Whereas 6% of the public reported working for a political party in the early 1970s, just 3% did so in the mid-1990s.

Wang and Katz (1994) present a serious threat to public safety if they lower citizen crime reporting. In this study, we analyze how one of the most common cases of police violence against an unarmed black man, the beating of a black man after he has called the police, affects police-related 911 calls. Controlling for crime, prior call patterns, and other factors, we find that residents of Milwaukee's black neighborhoods, were far less likely to report crime after the beating of a black man.

There is growing concern that the decline in voter turnout is due to the decline in the proportion of adults who report working for a political party. Based on an annual aggregation of Roper surveys between 1973 and 1994, Putnam (2000, 41) reports a steady decline in this proportion: Whereas 6% of the public reported working for a political party in the early 1970s, just 3% did so in the mid-1990s. At the same time, there has been a marked decline in the size and vitality of nonpartisan organizations. In the mid-1960s, 2.4 of every 1,000 women over the age of 20 belonged to the League of Women Voters, compared to .79 in 1998 (Putnam 2000, 438–44). A similar fate has befallen such civic organizations as the Lions, Rotary, and Kiwanis Clubs, which have experienced sharp membership declines since the 1960s. Due to the changing character of both partisan and nonpartisan organizations, voter mobilization has become increasingly impersonal, and messages that once might have been delivered in person are now communicated using mass marketing techniques. The decline of personal mobilization has arguably contributed to the erosion of voter turnout in the United States since the 1960s. This hypothesis is related to, yet distinct from, Rosenstone and Hansen's (1993) contention that diminishing rates of turnout are a result of a decline in the volume of mobilization

Police Violence and Citizen Crime Reporting in the Black Community

Matthew Desmond,^a Andrew V. Papachristos,^b and David S. Kirk^c

Abstract

High-profile cases of police violence—disproportionately experienced by black men—present a serious threat to public safety if they lower citizen crime reporting. In this study, we analyze how one of the most common cases of police violence against an unarmed black man, the beating of a black man after he has called the police, affects police-related 911 calls. Controlling for crime, prior call patterns, and other factors, we find that residents of Milwaukee's black neighborhoods, were far less likely to report crime after the beating of a black man. The effect lasted for over a year and resulted in a total net loss of 1.5 calls for service. Other local and national cases of police violence against black men had a significant impact on citizen crime reporting in Milwaukee. These findings powerfully suppress one of the most basic forms of civic engagement: the reporting of personal and public safety.

Keywords

crime reporting, police, police violence, race, crime, inner city

High-profile cases of police violence against unarmed citizens can undermine the legitimacy of legal authority. Numerous studies document stark racial disparities in police maltreatment, finding that black boys and

world; and the racialized sources and 24-hour news cycle have been captivated



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Do Politicians Racially Discriminate Against Constituents? A Field Experiment on State Legislators

Daniel M. Butler *Yale University*
David E. Broockman *Yale University*

We use a field experiment to investigate whether race affects how responsive state legislators are to requests for help with registering to vote. In an email sent to each legislator, we randomized whether a putatively black or white alias was used and whether the email signaled the sender's partisan preference. Overall, we find that putatively black requests receive fewer replies. We explore two potential explanations for this discrimination: strategic partisan behavior and the legislators' own race. We find that the putatively black alias continues to be differentially treated even when the emails signal partisanship, indicating that strategic considerations cannot completely explain the observed differential treatment. Further analysis reveals that white legislators of both parties exhibit similar levels of discrimination against the black alias. Minority legislators do the opposite, responding more frequently to the black alias. Implications for the study of race and politics in the United States are discussed.

Political equality is considered to be one of the defining characteristics of a democracy (Dahl 1956; Verba 2003). In the past, American democracy has consistently failed to live up to the standard of political equality, especially with regard to its treatment of racial minorities. Despite progress made in the latter half of the twentieth century, many researchers argue that racial minorities continue to be politically disadvantaged and underrepresented relative to their white counterparts (e.g., Fraga 1992; Hajnal 2009). In contrast, other researchers have suggested that racial discrimination against blacks in the political sphere may no longer be a concern in the United States (for review, see Hajnal 2009, 39), with some going as far as to argue that blacks and other minorities are in fact overprivileged in the political sphere (Chavez 1992; Thernstrom 1987). More broadly, especially in the wake of Barack Obama's election, many Americans have come to share the view that full equality for blacks has arrived or is due to arrive soon.

In recent years, political and judicial decision makers have also sought to appraise America's progress towards racial equality. Although the United States Supreme Court decided not to rule on the constitutionality of the Voting Rights Act in the case *Northwest Austin Municipal Utility District Number One v. Holder* in 2009, it signaled that determining whether the Act is still needed is an important question. Chief Justice Roberts wrote in the 8–1 decision that “We are now a very different nation,” going on to characterize whether “conditions” today have sufficiently improved to warrant striking down the Voting Rights Act as “a difficult constitutional question.” As the *New York Times* reported, such language “suggest[s] that the court [is] steeling itself to make a major pronouncement about the role of race in American democracy.”

Because there remains significant uncertainty about whether the political system remains biased against minorities, we conducted a field experiment in October 2008 involving 4,859 U.S. state legislators to test whether race

Social Media, News Consumption, and Polarization: Evidence from a Field Experiment[†]

By RO'EE LEVY*

Does the consumption of ideologically congruent news on social media exacerbate polarization? I estimate the effects of social media news exposure by conducting a large field experiment randomly offering participants subscriptions to conservative or liberal news chains of media. Facebook, vis-a-vis changes in news consumption, emerge. First, media subscriptions lead to a visit. Second, active attitudes lead to the effect. Findings of news consumption algorithm is inter-attitudinal. Together, they limit exposure to polarization.

Based on news on social media. [†] Based on Pew surveys news consumption, and

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TRUST IN SCIENCE



Hundreds of thousands of scientists took to streets around the world in April. “We need science because science tells the truth. We are those who can fight the fake news,” a friend who participated in one of the March for Science rallies told me. I really wish this were true. Sadly, much evidence suggests otherwise.

Kirchherr, J. (2017, June 6). Why we can't trust academic journals to tell the truth. *The Guardian*.
<https://www.theguardian.com/higher-education-network/2017/jun/06/why-we-cant-trust-academic-journals-to-tell-the-scientific-truth>

Communicating Policy-Relevant Science

James N. Druckman, *Northwestern University*

Government exists, in part, to provide public goods that otherwise would not be generated by the market (Taylor 1987). It does so by making laws and allocating resources that ostensibly better the lives of citizens. In so doing, legislators and other government officials can draw on any information or input they prefer—nothing requires them to turn to science or even to citizens. Yet, it is clear that both science and citizens play a role. The former is apparent from the investment that governments around

science can be communicated more effectively to lawmakers and the public.¹

INDIVIDUAL OPINION FORMATION AND DECISION MAKING

This section highlights four common features of information processing that are necessary to acknowledge if one hopes to use science to shape opinions and decisions.²

Values and Information

When communicating scientific results, priming the attributes of science—as a transparent, replicable, and systematic process—can enhance credibility and persuasion.

to science and technology” (see www.nas.edu/about/nas/mission). The latter purpose—that is, that citizens impact public policy—has been demonstrated by an extensive body of scholarship that reveals policy shifts in direct response to changing citizens’ preferences (for a detailed review, see Shapiro 2011).

What remains unclear, however, is how scientific research influences policy by either directly affecting legislative decisions and/or indirectly shaping citizens’ preferences to which legislators respond. To what extent does “science inform the policy-making process?” (Uhlenbrock, Landau, and Hankin 2014, 94). This article does not explore the direct impact of science on policy. Instead, the focus is on a prior question of how science can best be communicated to policy makers and citizens. This is a challenging task; as Lupia states: “[s]ocial scientists often fail to communicate how such work benefits society...Social scientists are not routinely trained to effectively communicate the value of their technical findings” (Lupia 2014b, 2). The same is true of physical scientists who often are “fearful of treading into the contested terrain at all” (Uhlenbrock, Landau, and Hankin 2014, 96, citing Oppenheimer 2010). These apparent failures, in turn, have caused lawmakers to question the value of social science funding (Lupia 2014b, 1).

The approach is twofold. First, I discuss basic realities of how individuals form attitudes and make decisions. I do not delve into the details of information processing; however, I highlight key factors that are critical to understand if one hopes to effectively communicate science. Second, given how humans form opinions and make decisions, I discuss ways that

can over time...science can help us achieve value competence by informing us about what values people bring to a decision and how the decision process itself facilitates or impedes cooperation or conflict.”⁴

Science, then, enters into play when it comes to the second basis on which individuals form opinions and make decisions: science is information or facts that people use to arrive at attitudes and behaviors. In forming opinions and making decisions, citizens use a set of facts or information that always can be expanded. Unfortunately, this often has led social scientists to criticize citizens for not being sufficiently informed—labeling them cognitive misers and satisficers or claiming that they rely on “shortcuts and heuristics” instead of a large store of information. However, the reality is that failure to be “fully informed” should not be perceived as a shortfall but rather as a basic reality. This is true for citizens (Lupia and McCubbins 1998; Sniderman, Chubb, and Hagen 1991) and lawmakers (e.g., Kingdon 1977). As Schattschneider (1960, 131–2; italics in the original) aptly explained:

[n]obody knows enough to run government. Presidents, senators, governors, judges, professors, doctors of philosophy, editors, and the like are only a little less ignorant than the rest of us...The whole theory of knowledge underlying these concepts of democracy is false—it proves too much. It proves not only that democracy is impossible; it proves equally that life itself is impossible. Everybody has to accommodate himself to the fact that he deals daily with an incredible number of matters about which he knows very little. This is true of all aspects of life, not merely politics. The compulsion to know everything is the road to insanity.

TRUST & TRANSPARENCY

Druckman, J. (2015). Communicating Policy-Relevant Science. *PS: Political Science & Politics*, 48(S1), 58-69.
<http://doi:10.1017/S1049096515000438>

Transparent Social Inquiry:
Implications for Political
Science

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TRANSPARENCY & REPRODUCIBILITY

Making research transparent involves clearly indicating what information was gathered, how the information was gathered, how data were generated from that information, and **how those data were analyzed.**

[polisci.annualreviews.org](https://doi.org/10.1146/annurev-polisci-091515-025429)

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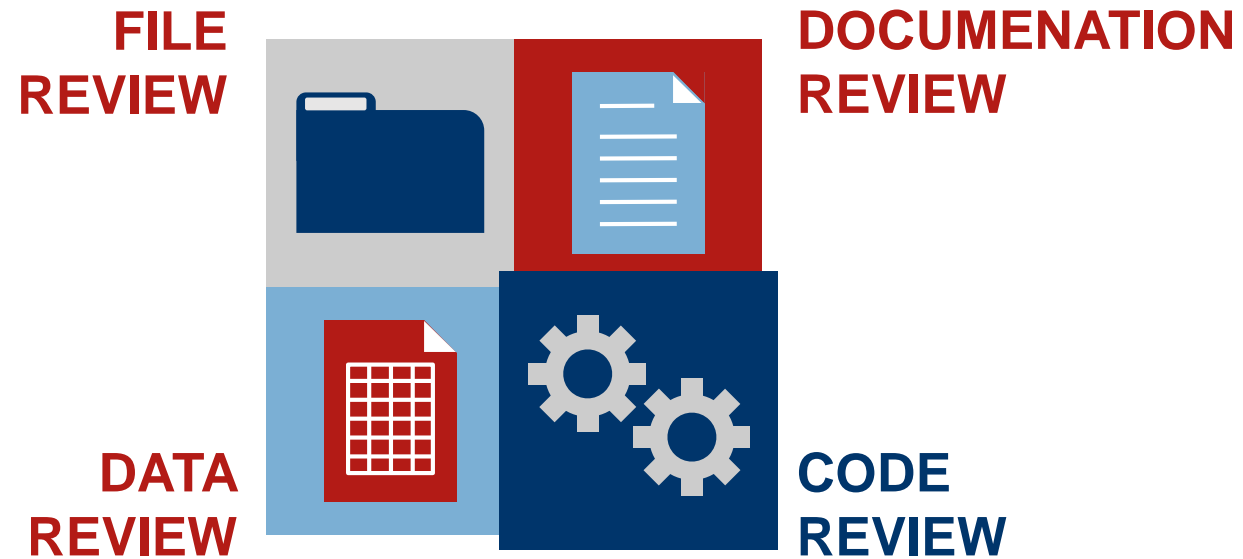
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Abstract

Political scientists use diverse methods to study important topics. The findings they reach and conclusions they draw can have significant social implications and are sometimes controversial. As a result, audiences can be skeptical about the rigor and relevance of the knowledge claims that political scientists produce. For these reasons, being a political scientist means facing myriad questions about how we know what we claim to know. Transparency can help political scientists address these questions. An emerging literature and set of practices suggest that sharing more data and providing more information about our analytic and interpretive choices can help others understand the rigor and relevance of our claims. At the same time, increasing transparency can be costly and has been contentious. This review describes opportunities created by, and difficulties posed by, attempts to increase transparency. We conclude that, despite the challenges, consensus about the value and practice of transparency is emerging within and across political science's diverse and dynamic research communities.

Elman, C., Kapiszewski, D., & Lupia A. (2018). Transparent Social Inquiry: Implications for Political Science. *Annual Review of Political Science* 21:1, 29-47 <https://doi.org/10.1146/annurev-polisci-091515-025429>

CURATION & REPRODUCIBILITY



Curation problem: **Privacy issues**

- Dataset contains variables that include information that could potentially identify study participants
 - SOLUTION: Apply de-identification techniques to remove disclosure risk OR store dataset file in a secure location with protocols for secure data access in place.

Skills:

- Data curation
- Data management

Curation problem: **Documentation**

- Inconsistent value labels: The values for the variable, "consent," are 1 and 2 in the dataset but 0 and 1 in the codebook.
 - ▣ SOLUTION: Update the codebook.

Skills

- Data curation
- Data management

Curation problem: **Error in variable operation**

- Manuscript defines obese as BMI >28, but code defines obese as BMI >= 28
 - ▣ SOLUTION: Update the code or manuscript, whichever is incorrect (per author).

Skills:

- Research methods
- Statistical software & programming experience

Curation problem: **Output discrepancy**

- R code produces a different result: Figure 1 in the preprint includes a dashed line, but the codes produce a solid green line.
 - ▣ SOLUTION: Update the code, or add a comment (per author).

Skills:

- Statistical software & programming experience
- Resources for troubleshooting

Curation problem: **Messy code**

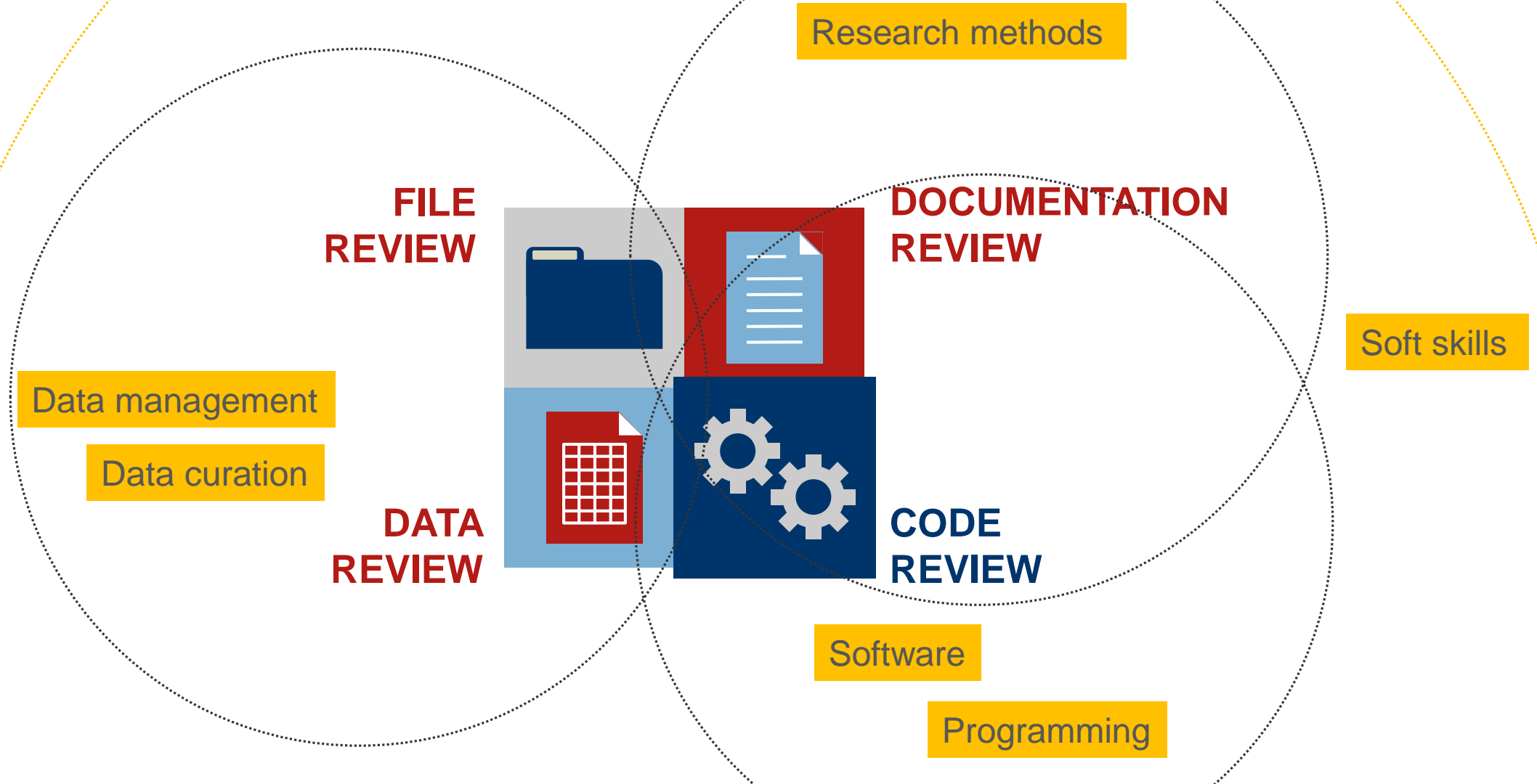
- Code is inefficient: First line creates a variable SFA; the succeeding IF statements are not necessary.
 - SOLUTION: Tidy up the code.

```
SFA = SSMR1_N + SSPM1_N + SSST1_N + SSAR1_N + SSDA1_N + SSLG1_N;  
if SSMR1_N=. then SFA=.;  
if SSPM1_N=. then SFA=.;  
if SSST1_N=. then SFA=.;  
if SSAR1_N=. then SFA=.;  
if SSDA1_N=. then SFA=.;  
if SSLG1_N=. then SFA=.;
```

Skills:

- Research methods
- Statistical software & programming experience

CURATION SKILLS FOR TRANSPARENCY & REPRODUCIBILITY



PERSPECTIVE/OPINION

Quality Uncertainty Erodes Trust in Science

Simine Vazire

When consumers of science (readers and reviewers) lack relevant details about the study design, data, and analyses, they cannot adequately evaluate the strength of a scientific study. Lack of transparency is common in science, and is encouraged by journals that place more emphasis on the aesthetic appeal of a manuscript than the robustness of its scientific claims. In doing this, journals are implicitly encouraging authors to do whatever it takes to obtain eye-catching results. To achieve this, researchers can use common research practices that beautify results at the expense of the robustness of those results (e.g.,

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Without high levels of transparency in scientific publications, consumers of scientific manuscripts are in a similar position as buyers of used cars – they cannot reliably tell the difference between lemons and high quality findings.

In any market, consumers must evaluate the quality of products and decide their willingness to pay based on their evaluation. In science, consumers of new scientific findings must likewise evaluate the strength of the findings and decide their willingness to put stock in them. In both kinds of markets, the inability to make informed and accurate evaluations of quality (i.e., quality uncertainty) leads to a lower and lower willingness to put stock in any product – a lack of trust in the market itself. When there are asymmetries in the information that the seller and the buyer have, the buyers cannot be certain about the quality of the products, leading to quality uncertainty.

In science, quality uncertainty threatens people's ability to have confidence in findings and build on them. Here I argue that the lack of transparency in science has led to quality uncertainty, and that this threatens to erode trust in science. The solution is to require greater transparency in scientific reporting, which will increase the certainty with which quality can be evaluated, and restore trust in science.

In his paper, "The Market for Lemons": Quality Uncertainty and the Market Mechanism" (1970), Nobel-Prize-winning economist George Akerlof illustrates this dynamic with the used car market. In this market, the seller has much more information than the buyer, making the buyer uncertain about the quality of any individual car, and thus unwilling to pay much for used cars. At extreme levels of quality uncertainty, the result is that no one is willing to buy a used car at any price – people lose all trust in the market.

There is a parallel with scientific products. In this case, the product is the manuscript or journal article, the seller is the author, and the buyer can be the journal editor, reviewers, or readers of the article – anyone who is choosing whether or not to buy the findings. The source of quality uncertainty in this market is that the authors know much more about what went into the article than do the potential buyers. There is critical information that only the authors know, including: (1) what the raw data look like, (2) what the authors' original intentions and predictions were, (3) how many studies were attempted and how many unsuccessful studies were excluded from the manuscript, and (4) how many analyses were attempted and what modifications were made before the authors settled on the analyses presented in the manuscript.

Yale University last on 06 April 2021

Simine Vazire; Quality Uncertainty Erodes Trust in Science. *Collabra: Psychology* 1 January 2017; 3 (1): 1.
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