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Editorial policy

Welcome back to the pages of *Behavioral Science & Policy (BSP)*. In this issue, we are pleased to feature articles on a wide range of topics, from taking stock of workplace health to fostering understanding and trust between groups to promoting student achievement to increasing the supply of transplantable organs.

In our opening article, Joel Goh, Jeffrey Pfeffer, and Stefanos A. Zenios note that workplace stressors—such as long work hours, lack of job control, and excessive job demands—contribute to a number of unhealthy behaviors, such as smoking, drinking, and overeating. When combined with the frequent absence of health insurance, these factors are estimated to account for more than 100,000 preventable deaths and roughly \$200 billion or more in excess health care costs in the United States each year. The authors observe that many other developed countries (notably a number of European member nations of the Organisation for Economic Co-operation and Development) have implemented policies designed to mitigate workplace stressors, such as shorter working hours, more leave time, stronger protections against employee dismissals, broader health care access, and measures to moderate job demands and increase employee job control. To examine the implications of the differences in policies, the authors developed a statistical model of how the United States would fare if it had workplace policies that were comparable to those of equally wealthy European peers. The results are striking: the authors estimate that improved workplace policies would result in an approximate reduction of \$44 billion in health care costs and possibly 17,000 fewer workplace-attributable deaths per year.

The next two articles focus on bridging the divide between disparate communities. Joshua Conrad Jackson, Michele J. Gelfand, Nailah Ayub, and Jasmine Wheeler describe a promising new diary contact technique for overcoming negative stereotypes between people from dissimilar cultures. This easily scalable approach involves simply asking people to read, for seven days in a row, short diary entries from a

member of another culture. The authors tested this method using a sample of American and Pakistani students and found that reading the other group's diary entries every day for a week reduced both groups' impressions of differences in values and norms between cultures, which, in turn, contributed to the students' reduced stereotyping of the other group. Although this method certainly needs to be replicated in new contexts, it is encouraging to see that it may be possible to foster positive intergroup connections using such a simple technique that does not require face-to-face contact. And it is easy to imagine how such a method intended to help ease intercultural conflict might eventually be deployed at scale using social networking platforms.

Thomas O'Brien and Tom Tyler report on a very different approach to bridging the divide between groups in a context where animosity stems from one group exercising authority over another. In particular, the authors mine insights from psychological research on procedural justice and reconciliation to identify principles for rebuilding trust between police and communities. Citing results of field surveys and vignette-based experiments, the authors derive a number of steps that police departments can take to promote the perception that they are exercising their authority in a fair and legitimate manner, such as repositioning their mission, expanding measures of success, and retraining officers. The authors also recommend gestures that police can make to help reconcile with the community for past injustices, from explicitly acknowledging their desire to rebuild trust to inviting input from affected communities—particularly those most apt to distrust police.

We are excited to introduce in this issue a new category of article for *BSP* that we call *Field Reviews*. In these articles, we invite leading scholars to survey recent field studies in a given policy area in which behavioral science insights have been leveraged to promote a particular policy objective. These articles are meant to not only organize and critically review results of such studies but also take stock of actionable

policy implications of this work and promising directions for future study. We begin with two excellent examples of this new format.

In our first field review, Peter Bergman examines recent progress in increasing student achievement and closing achievement gaps through interventional studies aimed at parents. Bergman identifies psychological factors that can inhibit successful parental engagement, from parents' tendency to overestimate how well their own children are performing to constrained attentional bandwidth. On the basis of these observations, he argues that an effective solution is for schools to provide parents with timely, actionable feedback on their children's academic progress. Bergman then shows that this approach has indeed yielded positive results in a large number of recent randomized controlled trials that were conducted in various countries and at various academic levels. In his review, Bergman observes that these interventions may succeed for a variety of reasons, such as the fact that they make monitoring children easier, they correct parents' inaccurate beliefs about their children, and they underscore the importance of schoolwork. Bergman also identifies critical factors that can improve the effectiveness of these interventions, such as personalization and simplification of messages and sending them at the right frequency. Bergman closes by discussing opportunities and challenges for policymakers who wish to scale successful interventions.

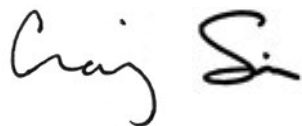
Perhaps the best-known and most commonly used tactic in Thaler and Sunstein's *Nudge* tool kit is the strategic use of defaults.¹ Johnson and

Goldstein famously suggested that defaults could be used to save lives through a simple change in organ donation policies: from explicit consent (in which individuals are presumed to be nondonors unless they opt in) to presumed consent (in which individuals are presumed to be donors unless they opt out).² Mary Steffel, Elanor F. Williams, and David Tannenbaum provide a thorough and nuanced review of experimental, cross-sectional, and longitudinal evidence concerning the impact of defaults in this context, ultimately concluding that presumed consent does, in fact, work in most cases. Although organ donation policies vary internationally, in America, individual states have been reluctant to implement a presumed consent default, fearing backlash. To address these concerns, the authors provide advice to policymakers on how to implement consent policies for maximum positive effect.

We have a number of exciting new field reviews in the pipeline that we look forward to bringing to the pages of *BSP*, along with the usual mix of essays, reports, empirical studies, and conventional reviews. As always, we welcome your feedback, suggestions, and especially your submissions for future issues of *BSP*.

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2. Johnson, E. J., & Goldstein, D. (2003, November 21). Do defaults save lives? *Science*, 302, 1338–1339. <https://doi.org/10.1126/science.1091721>



Craig R. Fox & Sim B. Sitkin
Founding Co-Editors



Reducing the health toll from U.S. workplace stress

Joel Goh, Jeffrey Pfeffer, & Stefanos A. Zenios

abstract

Many studies have documented that workplace stress can harm health. But in an open, competitive economy, can these harmful effects realistically be prevented? To find out, we used publicly available data to compare U.S. and European estimates of health care costs and mortality from workplace stress. We found that if the United States had workplace policies that were comparable to those of a European country of similar wealth, it would spend approximately \$40 billion less on health care costs related to potentially preventable workplace stress than it spends now. These results suggest that focusing policy interventions on the workplace could help address soaring U.S. health care costs.

Goh, J., Pfeffer, J., & Zenios, S. A. (2019). Reducing the health toll from U.S. workplace stress. *Behavioral Science & Policy*, 5(1), 1–13.

Core Findings

What is the issue?

Psychosocial stressors in the workplace have both direct and indirect negative impacts on U.S. health outcomes. When compared with similarly advanced countries in the European Union, the United States has invested less in mitigating these stressors and so continues to bear costs that can otherwise be prevented.

How can you act?

Selected recommendations include:

- 1) Expanding health insurance coverage to reduce excess workplace-attributable costs and mortality by enabling more people to obtain health care
- 2) Enacting policies that mandate a family-friendly workplace to reduce work-family conflict and job strain

Who should take the lead?

Researchers, policymakers, and stakeholders in health care and labor and human resources

Workplace protections in the United States have saved lives and slashed costs from on-the-job hazards. In 1970, the year that the Occupational Safety and Health Administration (OSHA) was created, there were 14,000 workplace fatalities from physical injuries and hazards, such as exposure to harmful chemicals, falls, and injuries from equipment such as drill presses and saws. By 2009, as a result of sustained policy attention, workplace fatalities had fallen to 4,400 despite a doubling of the workforce.¹

Meanwhile, work-related stress claims far more lives and costs far more money, yet the United States has done little to mitigate those risks. Exposure to workplace stressors, such as long working hours, shift work, the absence of job control (that is, individuals' ability to influence what they do at work), and excessive job demands, causes unhealthy individual behaviors, including smoking, drinking, and overeating. A study found that workplace stressors and an absence of health insurance (which limits access to health care) account for approximately 120,000 theoretically preventable, or excess, deaths in the United States each year, more than deaths from suicide (47,000),² car accidents (32,000),³ and homicide (19,000)⁴ combined. They also accounted for as much as \$190 billion in excess health care costs, approximately 8% of the nation's annual health care cost at the time of the study.⁵

What's more, these cost estimates are likely substantially understated.⁵ The indirect costs of poor employee health—absenteeism, turnover, burnout, and presenteeism—can be much larger than the direct health care-related costs of illness, according to several industry reports.^{6,7} Moreover, workplace stressors such as economic insecurity and work-family conflict undoubtedly have effects on other family members that have yet to be studied.

In the past, researchers have focused mostly on documenting various health effects of workplace stressors and far less on the possibility of reducing or eliminating these stressors in actual workplaces. However, there is reason to believe that policy changes could help mitigate

psychosocial workplace stressors. First, policy interventions have dramatically reduced the toll from physical workplace hazards, as mentioned above. Second, other developed nations have put workplace policies in place that have reduced the prevalence of various workplace stressors, and this, in turn, has diminished their workplace-related health care costs.

Specifically, compared with the United States, equally wealthy and economically developed member nations of the Organisation for Economic Co-operation and Development (OECD) tend to offer their workers shorter working hours, stronger protections against employee dismissals, better provisions for parental leave, and more vacation time and paid sick leave than the United States does for its workers. They also have substantially broader health care coverage.

In addition, the European Agency for Safety and Health at Work, the European equivalent of OSHA, has launched a campaign to help employers recognize and manage work-related stress and psychosocial risks.⁸ This includes measures to mitigate excessively demanding work and lack of job control. In the United States, OSHA has not yet made comparable efforts. However, Europe's success suggests that policy changes in the United States could reduce workplace psychosocial stress and the health burdens it imposes.

To understand the degree to which policy changes to reduce workplace stressors could pay off, it is first necessary to gauge how realistic it is to reduce the health costs and mortality that accompany psychosocial workplace stress. We estimated this by comparing the United States with advanced, industrialized nations from Europe using the aggregate mortality and health care costs associated with nine common psychosocial workplace stressors: unemployment, the absence of health insurance, shift work, long working hours, job insecurity, work-family conflict, low job control, high job demands, and low social support at work.⁹

Our comparison included 23 European OECD countries that have capitalistic, open economies

and have available data that make comparison with the United States feasible. European OECD member nations were particularly suitable because the OECD has a stated mission to support “market economies backed by democratic institutions,” which include the United States.¹⁰ By comparing the mortality rate and health costs from psychosocial workplace stressors in the United States with those of countries of the European Union, we sought to identify the extent to which new U.S. workplace policies could prevent harm and thus reduce costs and save lives.

Method

Estimating the preventable harm from psychosocial stress in the workplace requires an approach different from that used when measuring the health costs of physical injuries or hazards. Researchers who study physical injuries or hazards have often estimated preventable deaths from a single cause or factor that could conceivably be eliminated. For instance, it is possible to picture a world in which all smoking has been prevented, all bicyclists use helmets, every bed in every malaria-prone area has appropriate mosquito netting, or everyone is vaccinated against the diseases that can be prevented by vaccination. In each of these cases, the preventable death toll is the total number of deaths caused by the behavior in question—smoking,¹¹ not wearing a bicycle helmet,¹² not using appropriate mosquito netting,¹³ or failing to get everyone vaccinated.

Moreover, in each of these cases, effective policy interventions could directly prevent deaths from the cause in question. And for policy interventions such as bike helmets, anti-smoking measures, bed netting, or vaccination, it is relatively straightforward to compare the costs and benefits of the intervention using data from real-world cases, such as road-safety programs.¹⁴

Conversely, it is difficult to imagine a work world with no stress, particularly in workplaces operating in competitive environments. Cost and productivity pressures produce stress and help create the layoffs and economic insecurity that

“work-related stress claims far more lives and costs far more money, yet the United States has done little to mitigate those risks”

produce more stress. Such economic insecurity is an ever-growing feature of the economic landscape.^{15,16} It is also unclear which policy interventions would directly prevent deaths from workplace stress. For example, there have been few well-designed studies of workplace health-promotion programs or mental health interventions that document whether and to what extent these interventions are effective.

That said, we do know that, on average, health care spending is higher and people live longer in richer countries than in poorer countries.^{17–19} We also know that within a population, wealthier people live longer than poorer people.

Similarly, we reasoned that wealthier nations would have better health outcomes, such as lower death rates and lower rates of infectious diseases, from preventable causes. Government agencies and public officials would know that prevention is almost always more cost-effective than treatment for any health condition, and therefore would invest more to prevent disease or injuries. First, we empirically tested whether this inverse relationship between wealth and preventable environmental causes of ill health held for two conditions for which we had objective, public data—deaths from air pollution and deaths from tuberculosis—using a statistical procedure called *linear regression*. (See Section 1.6 in the Methods & Analysis Supplemental Material for more on these relationships.)

Further, because workplace stress can be viewed as a preventable environmental driver of poor health outcomes, we expected that government policymakers and private employers in wealthier countries would, as a rule, be more willing and

“Cost and productivity pressures produce stress and help create the layoffs and economic insecurity that produce more stress”

have more resources to invest broadly in policies that promote employee health. Therefore, we expected wealthier countries would have lower rates of workplace-induced ill health. And we wondered whether the United States would fit the typical wealthy country pattern or differ from it.

Estimating Preventable Workplace-Attributable Deaths

We used the following three-step procedure to estimate the number of preventable deaths from exposure to workplace stressors. (For the rest of this article, we will use the term *workplace exposures* to mean exposure to psychosocial stressors in the workplace and the term *workplace-attributable deaths* and *costs* to refer to those that arise from experiencing those stressors.)

Step 1: Estimate deaths from workplace stress for each country.

Step 2: Estimate how relative wealth affected deaths from workplace stress, omitting U.S. data.

Step 3: Estimate U.S. workplace-attributable deaths, then compare that value to the predicted value for an equally wealthy European country.

Next we describe in more detail how we did each step of the analysis for workplace-attributable deaths.

Step 1: Estimate Deaths From Workplace Stress for Each Country. Because the number of workplace-attributable deaths is a statistic that goes unreported, we had to estimate

this number. We focused on deaths rather than other health outcomes because countries consistently measure annual deaths and, consequently, relevant data are available. We estimated workplace-attributable deaths by using a mathematical model we had previously developed to capture the effect of workplace stressors on four costly health outcomes, including mortality, as well as to estimate health care costs and health disparities among different demographic groups.^{20,21} (Our empirical approach, model inputs, and data sources are shown diagrammatically in Figure 1. See the Methods & Analysis Supplemental Material for an in-depth description of the modeling.) Here we outline the model’s primary data inputs:

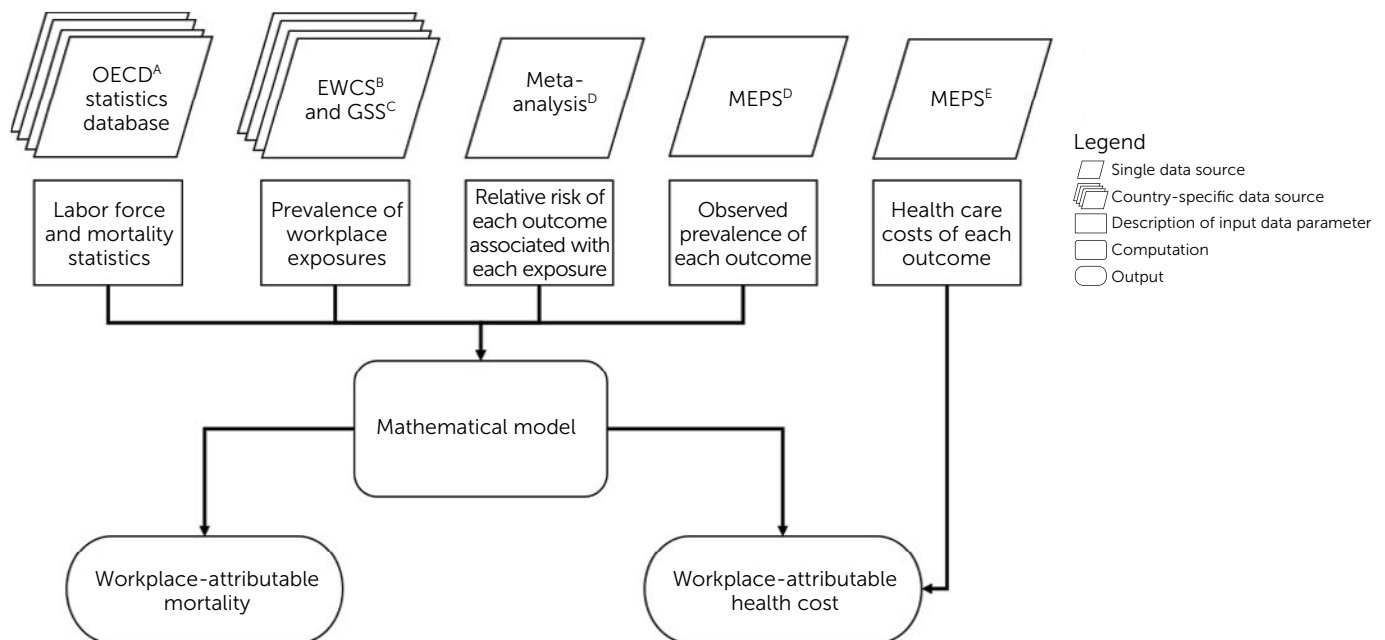
Labor force and mortality statistics: We drew the number of workers and overall annual deaths each year in each country from the OECD statistics database.²²

Prevalence of workplace exposures: No single cross-national survey of workplace psychosocial stressors exists for European OECD member nations and the United States, so we matched two surveys with equivalent or closely related questions. For the United States, we drew data from the General Social Survey²¹ and supplemented it with data from the Current Population Survey.²³ For the European OECD nations, we drew data from the Fifth European Working Conditions Survey (EWCS).²⁴ See the Table of Survey Questions Supplemental Material for the survey questions we used. Our final sample included 2010 data for the United States and the 23 European OECD member nations. See Table S1 in the Methods & Analysis Supplemental Material for a list of countries and some descriptive statistics.

Estimates of deaths from each workplace stressor: We obtained this information from a published meta-analysis of 228 studies that estimated the effects of the nine psychosocial stressors considered in this study on four different costly health outcomes, including mortality.⁹

Observed prevalence of these poor-health categories: This information was obtained from the

Figure 1. Illustrated overview of empirical approach & data sources



Note. OECD = Organisation of Economic Co-operation and Development; EWCS = Fifth European Working Conditions Survey; GSS = General Social Survey; MEPS = Medical Expenditure Panel Survey.

A. Data were retrieved from the statistical database of the Organisation for Economic Co-operation and Development, found at <https://stats.oecd.org>. We used the *Population and Vital Statistics* table to extract population and death rates for each country and the *LFS by Sex and Age* table to extract labor force and unemployment numbers for each country; in both cases, 2010 data were extracted separately by sex.

B. European Foundation for the Improvement of Living and Working Conditions. (2012). *European working conditions survey, 2010* [Data set]. <http://doi.org/10.5255/UKDA-SN-6971-1>
We extracted data on the prevalence of workplace stressors separately by sex for each country in 2010. Specific questions are listed in the Table of Survey Questions Supplemental Material.

C. National Opinion Research Center. (n.d.). General social survey. Retrieved from <http://www3.norc.umd.edu/GSS+Website/23>
We extracted data on the prevalence of workplace stressors separately by sex for the United States, pooling data from 2002, 2006, and 2010. Specific questions are listed in the Table of Survey Questions Supplemental Material. For additional details about the data used, see Section 4.1 in "The Relationship Between Workplace Stressors and Mortality and Health Costs in the United States," by J. Goh, J. Pfeffer, and S. A. Zenios, 2016, *Management Science*, 62, 608–628 (<https://doi.org/10.1287/mnsc.2014.2115>).

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E. Agency for Healthcare Research and Quality. (2010). *Data table: MEPS HC-121: 2008 full year consolidated data file*. Retrieved from https://meps.ahrq.gov/mepsweb/data_stats/download_data_files_detail.jsp?cboPufNumber=HC-121
We extracted data on 2008 health care expenditures for men and women separately.

nationally representative Medical Expenditure Panel Survey.²⁵ (We looked beyond death alone because we wanted to use the added information in analyses related to costs.)

We then calculated per capita workplace-attributable deaths in each country—that is, the total number of deaths from workplace exposure divided by the population of each country in 2010. The “per capita death” figure, then, is essentially the proportion of people who died in 2010 from workplace-related exposures.

Step 2: Estimate How Relative Wealth Affected Deaths From Workplace Stress, Omitting U.S.

Data. We plotted each European country’s wealth, as measured by its per capita gross domestic product (GDP; the average wealth of each individual), against its workplace-attributable deaths using linear regression. We included 23 European countries in the final analysis. These were the OECD member nations included in the EWCS in 2010.

Step 3: Estimate U.S. Workplace-Attributable Deaths, Then Compare That to the Expected Value if the United States Were an Equally Wealthy European Country. From the mathematical expression in Step 2, we predicted the number of workplace deaths the United States

“the United States experiences 17,000 preventable workplace-attributable deaths per year”

would have if its policies were like those of an OECD country of comparable wealth. We then compared that number with actual estimates of per capita workplace-attributable deaths in the United States. A significant difference would reveal how much of an outlier the United States was relative to its OECD European counterparts: if industrialized nations of equivalent wealth (equivalent per capita GDP) had fewer workplace-attributable deaths, the differences would indicate the extent of workplace-attributable deaths in the United States that might be prevented.

Estimating Preventable Costs

We estimated costs using the same three-step procedure, except that we added into the model's calculations the health care costs of each health outcome, as obtained from a nationwide survey of U.S. medical expenditures.²⁵ We estimated country-specific data on the prevalence of workplace stressors for the European nations from the EWCS.²⁴

Step 1: Estimate Health Care Costs From Workplace Stress for Each Country. We obtained these figures by dividing total health care costs from workplace exposure by the population of each country in 2010. (The “per capita health care cost” is the average cost per person.) We report all estimated health costs in 2010 U.S. dollars, adjusted using the medical component of the Consumer Price Index.²⁶

Step 2: Estimate the Relationship Between Relative Wealth & Workplace-Attributable Health Costs, Omitting U.S. Data. We plotted each European country's wealth, as measured by its per capita GDP, against its costs attributable to the workplace. We used linear regression to model the relationship between the per capita workplace-attributable costs and each nation's per capita GDP.

Step 3: Estimate U.S. Workplace-Attributable Costs & Compare the Result to the Value That Would Be Expected if the U.S. Figures Were Extrapolated From the European Data. As with deaths, we predicted the costs the United States would have if its policies were like those of an OECD country of comparable wealth and then compared that figure with its actual costs.

Results

How Wealth Influences Death From Environmental Sources

To test whether our approach made sense, we considered deaths from two environmental sources of mortality—air pollution and tuberculosis. We hypothesized that the death rates for these conditions would fall as a nation got wealthier, as measured by its per capita GDP. We found for European OECD countries that they did, and they did so in a statistically significant manner ($p = .03$ for air pollution and $p < .01$ for tuberculosis; see note A.) What's more, the United States conformed to this trend: When U.S. death rates from these conditions were compared with the rates in OECD countries, the differences were not significant ($p = .40$ for air pollution and $p = .67$ for tuberculosis), indicating that the United States was not an outlier. These results gave us confidence that our analytical strategy made sense.

Preventable Workplace-Attributable Deaths & Costs

In European OECD countries, we expected and found a similar relationship between per capita GDP and workplace-attributable mortality or costs. As per capita GDP rose, per capita workplace-attributable mortality ($p < .01$) and per capita workplace-attributable costs ($p < .01$) fell.

By measuring how much the United States deviated from the general trend line, known as a *regression line*, which we constructed from the data from the European OECD countries, we estimated that the United States experiences 17,000 preventable workplace-attributable deaths per year, as well as \$44 billion in preventable workplace-attributable health care costs. However, only the health care cost difference

between the United States and the OECD countries was statistically significant ($p = .03$).

In fact, these figures are probably an underestimate, because some of the European countries in our sample were outliers with regard to the overall trend. To gauge how sensitive our results were to such outliers, we progressively removed countries with the smallest populations from our analysis. When we did that, our estimates of preventable workplace-attributable deaths and costs in the United States rose substantially, fluctuating between 40,000 and 63,000 preventable workplace-attributable deaths per year and between \$55 billion and \$65 billion in preventable costs (see Table 1). As before, only the estimates of preventable costs were statistically significant.

Discussion

Our analysis provides the first estimate of the preventable deaths and preventable health care costs from psychosocial workplace stress in the United States. The preventable costs, as shown in Figure 2, are substantial—the most conservative estimate is approximately \$44 billion per year, or \$156 per American per year.

This estimate of preventable cost only includes the direct cost of health care and does not account for the indirect cost of absenteeism and reduced productivity. To put this estimate in context, the Society of Actuaries has estimated that secondhand smoke, a well-known environmental exposure, costs the United States approximately \$10 billion per year in both direct and indirect costs.²⁷ However, although our point estimates for preventable deaths were substantial in magnitude and remained robust when small-population outliers were removed from the set of European countries, they were not statistically significant. The lack of statistical significance could stem from a wider range of mortality estimates in the different European nations. In sum, these findings provide evidence that psychosocial workplace stressors impose an unnecessary economic toll on Americans, but they are not conclusive about whether such stressors contribute excessive deaths that are preventable.

Although useful as a preliminary estimate, our modeling has several limitations. It uses different surveys—the General Social Survey for the United States and the EWCS for the European countries—to estimate the prevalence of

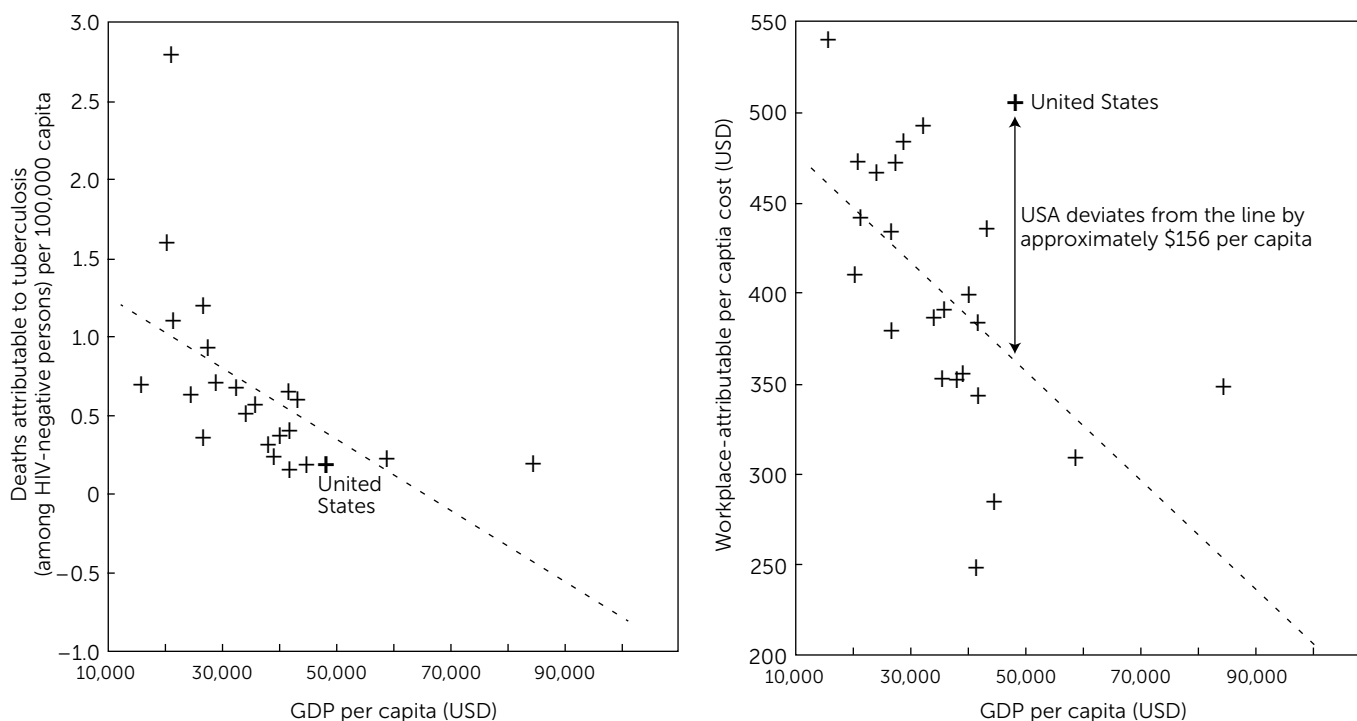
Table 1. Sensitivity analysis of preventable workplace-attributable deaths & costs in the United States per year

Number of European OECD countries in sample	Preventable deaths (thousands)	Preventable cost (billions USD)
23	16.5	44.2*
22	40.9	55.4**
21	41.1	55.4**
20	41.1	55.4**
19	52.1	58.5**
18	62.2 [†]	64.4**
17	56.7	64.0**
16	55.4	63.8**
15	43.7	57.9**
14	43.5	57.1**

Note. Sensitivity analysis tests the robustness of one's results and is also known as the what-if analysis. Here, we examined the estimates of preventable deaths or costs that our model would produce if we sequentially removed from our sample European Organisation for Economic Co-operation and Development (OECD) countries with the lowest populations (which are least like the United States). The estimates of preventable costs are statistically significant. The U.S. death rates were higher than OECD rates in absolute terms but the differences did not reach statistical significance. Larger sample sizes could help to establish whether the U.S. death rate differs at a statistically significant level. USD = U.S. dollars.

[†] $p < .10$. * $p < .05$. ** $p < .01$.

Figure 2. How European OECD nations & the United States compare in deaths from tuberculosis & estimated costs related to workplace stressors



Note. The United States is not an outlier compared with European Organisation for Economic Co-operation and Development (OECD) nations with respect to deaths from tuberculosis (as is true for other disorders not related to workplace stress). But it is an outlier with respect to estimated costs from workplace stressors, indicating that investments in reducing workplace stress could not only help workers in the United States but also save money. USD = U.S. dollars; GDP = gross domestic product.

workplace stressors. To make the responses comparable, we identified matching questions across these two surveys (see the Table of Survey Questions Supplemental Material). Going forward, a standardized survey that compares workplace stressors and corresponding health outcomes across nations would enable even more reliable comparisons. Those surveys would ideally include non-European OECD countries such as Australia, Canada, and New Zealand, which may be more similar to the United States than some European countries are. A larger sample of nations would also lead to more precise and conclusive estimates of the number of preventable deaths from workplace stressors, which we were not able to obtain with our current data.

Although we did not directly examine how specific workplace policies affect workplace stress, we did show that when considered collectively, workplace policies matter.

Therefore, if a workplace policy is associated with one or more workplace stressors and if U.S. policy differs significantly from the policies of its European OECD counterparts, then changing U.S. policy to resemble those of its European counterparts could reduce the health toll in the United States.

The examples that follow illustrate policies other nations have implemented and the United States has not. Changing U.S. policy to resemble these European policies could potentially reduce adverse health consequences from workplace stress.

Health Insurance Coverage

Our data showed that wealthier countries, as measured by higher per capita GDP, had higher rates of health insurance. The United States was an outlier, having significantly lower health insurance coverage than a comparably wealthy European country. Our statistical analyses gave

us strong confidence in both of these conclusions ($p < .01$).

It seems reasonable to predict that policies that help expand health insurance coverage would reduce excess workplace-attributable costs and mortality by enabling more people to obtain health care before small problems become big ones. Other research findings support this conclusion. A review of several major empirical studies recently concluded that “health insurance saves lives.”²⁸ A Kaiser Family Foundation analysis revealed the primary reason why uninsured people did not take up health insurance was its prohibitive cost.²⁹ It also found that more than half of uninsured people were eligible for some form of financial assistance.³⁰

These findings suggest that efforts to step up outreach to educate the uninsured about their options would help to improve coverage nationwide. One method would be to use social media and other forms of advertising. Another would be to use retailers such as drugstores that people visit somewhat regularly for supplies. A third method would be to use other providers of social services, such as unemployment and welfare offices and even schools, to inform families about the availability of and benefits from having health insurance and, thereby, access to health care.

Reducing Job Strain Through Increased Awareness

Our analysis included the three main components of job strain: low job control, which refers to control over how one’s job is done; high job demands; and low social support at work. Effective remediation of these stressors typically involves redesigning a task or a job. For example, allowing flexible work arrangements such as telecommuting could increase job control. But redesigning a job or task requires awareness, acceptance, and buy-in from employers or employer associations.

Awareness of job strain, a construct comprising three of the nine psychosocial stressors we considered, is more common in Europe than in the United States, and European policy-makers are taking actions to remediate it. In

2004, several of the largest European trade unions achieved a key milestone when they signed the Autonomous Framework Agreement on Work-Related Stress.³¹ Since then, Austria, Denmark, the United Kingdom, and other countries have published nonbinding standards on psychosocial risks such as job strain and have developed and disseminated tools to help organizations identify and reduce the prevalence of these stressors. For example, Austria has developed a guide for labor inspectors that includes elements of the psychosocial work environment that they should monitor, as well as information on how to support companies in reducing job-strain-related stressors. In addition, Belgium, Slovakia, and other countries have passed laws requiring employers to conduct proper risk assessments for such stressors.³²

U.S. employers, in contrast, are much less aware of job strain than European employers are. The National Institute for Occupational Safety and Health (NIOSH) has published advice for employers about job strain and has coordinated research on this subject for some time, but if it adopted some ideas from its European counterparts, it could raise awareness in the United States about job strain and reduce its prevalence. We have some suggestions of where to start.

First, NIOSH could be more effective by simply renewing its focus on job strain. At present, NIOSH does not appear to be working actively on the subject: Its latest publication related to job strain was published in 2004,^{33,34} and its web page titled “Organization of Work,” which provides a list of resources that could be useful to employers and researchers, is no longer actively maintained.³⁵ A key first step for NIOSH would be to recognize and reprioritize job strain as an important workplace hazard that can contribute to poor worker health. Currently, the hazards and exposures NIOSH lists on its website include heat stress, indoor environment quality, and tobacco in the workplace, but not job strain.

Second, NIOSH could pivot from its traditional research and advisory role toward a more active role in advocating for reducing job strain. NIOSH knows how to measure job strain: In 2000, the

\$44b

Estimated preventable workplace health care costs to the US per year

17k

Estimated preventable workplace-attributable deaths per year

19k

Homicide deaths per year

agency developed the Quality of Worklife Questionnaire,³⁶ which included measures that can be used to assess job strain. But that questionnaire was intended primarily as a research tool; in fact, it was included in the General Social Survey. NIOSH also provides advice on how to measure job strain (among other constructs), although the web page with that advice is no longer actively maintained.³⁵ NIOSH could streamline these measurement tools into a single tool or suite of tools that employers as well as researchers could use. NIOSH could also develop up-to-date guidelines of best practices related to reducing job strain.

By taking responsibility for resources and streamlining them, NIOSH could then better advocate with employers, trade associations, and labor unions to encourage them to adopt these resources and use them to help manage workers. For example, NIOSH could maintain an active presence in industry colloquia or in academic conferences that focus on occupational stress and health. Alternatively, the organization could partner with other interest groups in reaching out to employers. For example, in the health care industry, the American Medical Association has been grappling with occupational burnout,^{37,38} which is one of the possible negative outcomes of high levels of job strain. Industry associations like the American Medical Association that are already actively working to reduce job strain would likely be receptive to NIOSH's outreach and use its resources.

Family-Friendly Work Policies

Published studies show that employees think their workplaces support families when they perceive little work–family conflict.^{39–44} Work–family conflict is an important workplace stressor that occurs when employees' work and family roles interfere with each other.

A family-friendly work environment is more than the sum of its family-friendly policies.^{45,46} However, studies of individual policies can nonetheless guide employers toward concrete actions they can implement to reduce workplace stressors. Flexible work schedules^{41–43} and

paid sick and parental leave,^{43,44} for example, reduce work–family conflict, research has found. And vacation leave reduces job strain.^{47,48} The United States, unlike its European OECD counterparts, does not have any federal policies guaranteeing sick and parental leave or a minimum number of annual vacation days. Policies that mandate these changes could reduce work–family conflict and job strain, diminishing their toll.

Costs of Inaction

Policymakers and others have talked for years about bringing U.S. workplace policy more in line with the policies of other advanced industrialized countries. This would mean better access to health care, more paid time off for sickness and vacation, improved policies for work–family balance, and more. Such changes could reduce the health-related costs of workplace stress.

Our analysis did not consider the costs of implementing the policies, as this task is beyond the scope of this article. Nonetheless, by estimating that the United States spends \$44 billion on health care for potentially preventable problems related to workplace stress, we have provided U.S. policymakers a rough estimate of how serious the problem is. We hope that this finding will stimulate policy action by revealing the costs of continued inaction and reminding policymakers that investing in prevention can save money on workplace health costs.

Conclusion

In this study, we find that U.S. workers pay a higher price from workplace stressors, in terms of health costs and possibly mortality, than do workers in comparable OECD countries in Europe. Taken together with other research, our study suggests that expanding health insurance coverage, adopting family-friendly work policies more widely, and raising awareness about the costs of workplace stress could significantly benefit U.S. workers. Doing so could help reduce exposure to workplace stressors, improve the nation's work climate, and reduce the health burden imposed by U.S. workplaces.

endnote

A. From the editors to nonscientists: For any given data set, the statistical test used depends on the number of data points and the type of measurement, such as proportions or means. The p value of a statistical test is the probability of obtaining a result equal to or more extreme than would be observed merely by chance, assuming that there are no true differences between groups under study (the null hypothesis). Researchers traditionally view $p < .05$ as the cutoff for statistical significance, with lower values indicating a stronger basis for rejecting the null hypothesis.

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supplemental material

- <https://behavioralpolicy.org/publications/>
- Methods & Analysis
- Table of Survey Questions

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Together from afar: Introducing a diary contact technique for improving intergroup relations

Joshua Conrad Jackson, Michele J. Gelfand, Nailah Ayub, & Jasmine Wheeler

abstract

Bringing groups into direct contact is a popular way to break down negative stereotypes but is logistically challenging when groups are geographically distant or otherwise isolated. To address this issue, we present the *diary contact technique* (DCT), a methodology designed to improve relations between such groups via positive contact. In the DCT, individuals read real diary entries written by a member of their own culture (the in-group) or another culture (the out-group), with the prediction that reading out-group diary entries will reduce stereotyping. In this randomized controlled study, we validate the DCT's effectiveness in samples of Americans and Pakistanis. Individuals who received out-group diaries perceived less cultural distance between the two groups after the intervention, whereas participants who received in-group diaries showed no change in perceived cultural distance. The reductions in perceived cultural distance mediated decreases in negative stereotyping of the out-groups. These results suggest that the DCT is a promising tool for improving relations between cultures.

Jackson, J. C., Gelfand, M. J., Ayub, N., & Wheeler, J. (2019). Together from afar: Introducing a diary contact technique for improving intergroup relations. *Behavioral Science & Policy*, 5(1), 15–33.

Core Findings

What is the issue?

Reducing conflict between different cultural communities is especially difficult when these communities are isolated geographically or in other ways. Changing negative stereotyping and reducing cultural distance requires an interventional effort. A *diary contact technique* (DCT) exposes communities to each other through making and reading diary content. It has been successful in reducing perceived cultural distance between treatment groups.

How can you act?

Selected recommendations include:

- 1) Increasing research and investment into virtual contact interventions for reducing perceived cultural distance between groups
- 2) Extending DCT into other areas such as schools, workplaces, government, and advocacy organizations

Who should take the lead?

Researchers, policymakers, and stakeholders in conflict management and resolution

Under the right conditions, contact between two social groups can build trust and reduce the risk of conflict. But in today's world, most contact between groups comes through mass media, where depictions of life in other cultures are incomplete and stereotype-ridden. In this article, we introduce a new intervention—the *diary contact technique* (DCT)—to promote positive contact between geographically far-flung groups and reduce bias. The DCT involves delivering diary entries over the course of a week from a member of one culture to a member of another culture, and it is easy to implement—simply requiring the acquisition of diary entries, translations, and survey-distributing software. We present data from samples of Americans and Pakistanis showing that the intervention is effective at reducing perceptions of cultural distance (the extent to which two groups differ in their values and norms)¹ in those groups and, in turn, mitigating negative stereotypes. We also offer practical suggestions for researchers and policymakers who may be considering implementing the DCT.

Prejudice & Cultural Contact in an Interconnected World

Economic opportunities and exploration have brought cultures into contact for thousands of years. Historians such as Herodotus, Marco Polo, and Ibn Battuta documented ancient forms of intercultural contact, and later social theorists such as Karl Marx and Friedrich Engels² discussed the influence of globalization on relations between groups at length. Marx and Engels's view, which has since been popularized by journalists like Thomas Friedman³ and academics like Theodore Levitt,⁴ was optimistic—holding that, as the marketplace became increasingly global, individuals' engagement with other cultures would translate into less ethnocentrism and more openness to foreign values and norms.

Yet recent global trends show that contact between groups does not always translate into tolerance. Although trade and travel have increased over the past three decades,⁵ intercultural tension—particularly between the

West and the Middle East and South Asia—has remained high. Wars in Afghanistan, Pakistan, and Iraq involving American forces have resulted in more than 200,000 violent civilian casualties in the last 20 years;⁶ many inhabitants of these countries have developed a deep distrust of Americans and vice versa. In a 2013 survey, for example, only 11% of Pakistanis viewed Americans positively,⁷ and in another survey conducted that same year, only 10% of American respondents said they trusted Pakistanis at least “a fair amount.”⁸

One possible source of the protracted American–Pakistani hostility might be the ways that people learn about foreign cultures, which we refer to here as *out-groups*. People from different cultures tend to learn about each other through mass media outlets such as film, television, and news reports, where representations of out-groups are often stereotyped and incomplete.^{9,10} Social media forums can provide more nuanced views, but they do not often bring people from different cultures together; people tend to use Twitter, Facebook, and the like to interact with their existing social networks, not to forge new connections.^{11,12}

Intergroup contact theory, which explores how interactions between groups can reduce prejudice, suggests that relations between societies like Pakistan and the United States will not improve until members of these groups meet in more positive and safe conditions.¹³ However, traditional ways of creating these conditions can be nearly impossible to implement for geographically distant cultures. For example, Gordon Allport's version of the contact hypothesis,¹³ which he developed nearly 70 years ago, emphasized the importance of face-to-face activities to reduce prejudice,¹⁴ yet language barriers and geographic distance stand in the way of direct contact between people living in different nations.

These limitations have resulted in a troubling lack of prejudice-reduction interventions tested in non-Western samples. In a 2009 review of 1,000 published and unpublished papers on intergroup prejudice, for instance, Elizabeth Levy Paluck and Donald P. Green found only a

single randomized field intervention that had sampled adults outside of North America and none that had been conducted with people in different countries.¹⁵ Some cross-cultural interventions have been published in the years since their review appeared.^{16–19} Nevertheless, a 2018 follow-up review that Paluck and Green conducted with Seth A. Green found that only two contact interventions had attempted to reduce prejudice against foreigners and that both of these interventions were conducted within a single nation.²⁰

In recent years, new virtual contact interventions have emerged that do not require face-to-face interaction and are more amenable to cross-cultural application.²¹ Some of these approaches have involved attempting to foster constructive contact by portraying out-groups in a positive light in mass media.^{19,21,22} For example, Paluck studied the value of a radio program in Rwanda that modeled healthy contact between Hutu and Tutsi ethnic groups by depicting everyday interactions between their members;¹⁹ Edward Schiappa and his colleagues improved heterosexual people's attitudes toward gay men by showing positive portrayals of gay men in films and television shows;²² and Lindsey Cameron and her colleagues reduced British children's anti-refugee prejudice through fictional stories that described friendly interactions between refugees and British citizens.²³ Other interventions have used Internet chat rooms or collaborative projects to bring people together.^{24–27} For example, Diane Boehm and her associates attempted to reduce ethnocentrism through a collaborative online project between American and English-speaking Polish students.²⁵ Still other interventions have asked participants to imagine a positive interaction with an out-group to which they had had little exposure.^{26–28}

Yet even these virtual contact interventions face limitations when applied cross-culturally.^{29,30} For example, many media-based interventions rely on actors or celebrities to depict out-groups—in one intervention, Schiappa and his colleagues presented clips from television shows such as *Queer Eye for the Straight Guy*²²—and people may not generalize their positive impressions

of these celebrities to more typical members of an out-group. Imagined contact interventions have a related limitation: People must draw from their existing stereotyped perceptions of the out-group they are imagining. Americans may be more likely to imagine Pakistanis praying in a mosque than playing soccer with friends, even if they are asked to think of “interesting and unexpected things” about Pakistanis. Chat rooms and collaborative online projects resolve these limitations by engineering real interactions between typical people from two groups, but they face a different set of limitations, such as requiring that groups speak the same language. Also, the content of chat-room conversations depends on what people ask each other, and research from social psychology shows that people tend to ask questions aimed at reinforcing rather than contradicting stereotypes.^{31,32}

Introducing the Diary Contact Technique

To complement these existing interventions, we introduce the DCT, which involves two steps. In the first step, investigators collect unfiltered diary entries from members of different cultures in each group's native language. In the second step, investigators randomly assign a different sample of participants from each culture to read either daily diary entries from an in-group individual (someone from their own culture) or translated diary entries from an out-group individual. Before participants start reading diaries and after they have completed reading the full set of entries, they rate the extent to which they endorse specific stereotypes associated with the out-group. By comparing the pre- and postintervention survey results, researchers can determine whether reading an out-group individual's diary entries reduced belief in commonly held cross-cultural stereotypes, compared with reading diary entries by an individual from one's own culture.

The DCT has a number of logistical features that make it a promising 21st-century contact intervention. For example, diary entries can be distributed online, which makes the DCT easy to implement in geographically distant places.

“The DCT allows participants to see people of other cultures in counter-stereotypical situations”

Further, by randomly assigning out-group and in-group diary entries to participants, researchers can test whether reading diary entries written by members of a particular out-group reduces stereotypes more than reading diary entries from someone in one’s own community would.

The DCT has several other features that make it promising as a bias-reduction intervention. Several studies suggest that reading about typical people within a culture—rather than celebrities or actors—should increase the likelihood that people will generalize their positive impressions of the author to the entire out-group rather than viewing the diary writer as an exception to the prevailing stereotype.^{33–37} Reading at length about the everyday life of a particular person in an out-group culture may also increase the extent to which people perceive members of out-group cultures as individuals rather than as part of a homogeneous category.³⁷ Finally, viewing an out-group individual in a wide range of situations that contradict people’s existing stereotypes highlights the commonalities between cultures and undermines pervasive stereotypes.³⁸

We are particularly interested in this last aspect of the DCT. We suggest that because the situations depicted in diaries portray elements of life that are shared by people around the world (such as meals and family gatherings), reading about these cross-cultural commonalities should reduce the cultural distance that people feel between themselves and members of an out-group. In addition, the DCT allows participants to see people of other cultures in counter-stereotypical situations (such as when Americans read about Pakistanis playing sports or reading poetry, or Pakistanis read about Americans spending time with their parents),

which should also reduce cultural distance. In previous investigations, feeling less cultural distance has been linked to better acculturation,^{39,40} improved cross-cultural collaboration,⁴¹ and willingness to personally visit a foreign country.⁴² In line with these findings, we hypothesize that perceived cultural distance could be a key mediator in the DCT’s efficacy. To the extent that reading diaries about a foreign culture leads to a reduction in perceived cultural distance, it should also facilitate decreases in negative stereotyping of out-groups.

Study Design

To prepare our test of whether the DCT can reduce negative stereotypes of other cultures, we had several individuals from Pakistan and the United States complete diary entries every day for a week. Then, with the diarists’ permission, we assigned the entries to a new set of Pakistani and American participants under the guise of a social memory study. The Pakistanis and Americans in the second group read one diary entry per day over the course of a week. Half of the participants from each culture read entries from someone of their same culture, and half read entries from someone of the other culture. Before and after reading the full set of entries, participants filled out a survey meant to assess how much they endorsed specific stereotypes of the other culture and the amount of cultural distance they perceived. We compared the pre- and postintervention survey results to see if reading the diaries reduced perceived cultural distance and whether this diminution increased positive feelings about the other group.

Laying the Groundwork

Before testing the intervention or procuring diary entries, we first needed to gather data on the stereotypes that Pakistanis and Americans held about each other so that we could generate survey items that assessed beliefs commonly held in the real world. We collected these data by conducting semistructured interviews with volunteers other than those who later participated in the intervention. The interviews included a fixed list of questions but also allowed interviewers to ask other questions that naturally arose.

Participants & Procedure for Identifying Common Stereotypes. We gathered our interview data from 18 Americans (11 women, seven men; mean [*M*] age = 25.78 years) and 12 Pakistanis (all men; *M*_{age} = 28.82 years). Americans were from Maryland, and Pakistanis were from Islamabad, Rawalpindi, Lahore, Sahiwal, and Abbottabad. Only men were available for our Pakistani interviews. Consultants from the United States and Pakistan helped us design the interviews. The resulting set of questions generally focused on participants' perceptions of the other culture, with an emphasis on perceived similarities and differences between the two cultures. One question, for example, asked participants to list some positive and negative traits that their friends and neighbors associated with people from the other culture. See the Supplemental Material for a thorough description of the interviews, a list of questions, and quotes from participants. Not all participants within these focus groups brought up the same topics, but each group did bring up recurring stereotypes about the other culture, as we discuss next.

Pakistani Stereotypes of Americans. Previous research has found that the Pakistani culture values tighter adherence to norms than does American culture, with less tolerance of social deviance.^{43,44} In our interviews, Pakistanis appeared to strongly endorse this divide, perceiving a large gap between American and Pakistani norms. Many of them regarded Americans as having loose moral norms and assumed that such attributes stemmed in part from a lack of both religion and a sense of family obligation. When asked what images come to mind when thinking about Americans, for example, Pakistanis rarely reported visions of Americans having dinner with their families, dressing formally at their workplaces, or attending church, and some participants suggested that American children would often publicly humiliate their parents, because they did not live according to any particular set of rules.

Pakistani interviewees also viewed Americans as feeling superior to other cultures and being intentionally ignorant of cultural diversity. Some Pakistanis, for instance, argued that Americans

believed whatever the media showed them regarding other cultures. And some saw Americans as exploiting other cultures for resources without considering the ramifications of their actions. As one person said, "Americans have humanity, but only for themselves."

American Stereotypes of Pakistanis. Americans typically regarded Pakistanis as having little warmth (in other words, as being aggressive, unfriendly, and inflexible in their moral attitudes), an opinion reflected in their stereotypes of Pakistanis as terrorists and religious extremists. As was true of Pakistanis, American interviewees also perceived a large gap between the cultures' norms. Many American interviewees assumed that Pakistanis lacked freedom, citing family- and religion-imposed prohibitions on the way that women dress and the education and careers that people could choose.

We note that our interviews asked about Americans' perceptions of "Middle Easterners" and not Pakistanis. Pakistan is in South Asia, but a survey that we conducted of 502 Americans indicated that most Americans (71.6%) believe that Pakistan is a Middle Eastern nation. To be sure that our approach was reasonable, we also conducted a follow-up survey of 98 Americans to test whether Americans ascribed these stereotypes to Pakistanis specifically. This survey supported our approach. For example, 76% of participants believed that quotes about Middle Easterners from our interviews characterized Pakistanis (as a comparison, only 30% believed that quotes about Americans from our interviews characterized Pakistanis). More information about this survey is available in the Supplemental Materials.

Step 1: Gathering Diary Entries

Participants. We collected 20 sets of diaries from 10 American (five women, five men; *M*_{age} = 24.50 years) and 10 Pakistani (five women, five men; *M*_{age} = 24.25 years) undergraduate and graduate students over the course of a week. Participants came from a range of urban, suburban, and rural backgrounds. Diary writers thought they were taking part in a study called "Understanding Everyday Life" and were asked to share their everyday experiences to help

researchers gain insight into students' daily lives. After completing the diaries, participants, who were paid the equivalent of \$20, were told the true aim of the study and were asked whether their diaries could be used in an intervention to reduce stereotypes. All participants gave permission.

Participants wrote the diary entries in their native language. Before diaries were included in the intervention, Pakistani diary entries were translated into English, and English diaries were translated into Urdu, by individuals who were native Urdu speakers and fluent English speakers. The translations allowed us to assign Pakistani diary entries to Americans and vice versa. The accuracy of the translations was confirmed in a separate step, in which an independent set of translators translated each set of diary entries back into the entries' original language.

Procedure. On signing up, participants provided their age and gender. At 5 p.m. on each subsequent day, they received a link to a Qualtrics survey where they were prompted to list up to six significant locations that they had visited over the previous 24 hours. Writers were asked to be specific enough that a reader would understand where they had been but general enough that

each location was meaningful: listing a country or city as a location would be too broad but listing their desk as a location would be too narrow. "My house" and "a lecture hall" were given as two examples of appropriate entries. After listing locations, participants were prompted to give more information about each location, one at a time. They were asked to tell the story of what they did at the location and how they experienced it, as if they were writing in their own diary. They were specifically asked to include information about why they were there, who they were with, what they were doing, and what they were thinking and feeling. Participants were encouraged to be detailed in their responses and were told that a good response should be at least several sentences long.

Across the 140 diary entries (seven per writer), responses had an average length of 327.27 words (standard deviation [*SD*] = 204.50), a median of 260 words, and a range from 54 to 1,410 words. American and Pakistani diary lengths were similar: a mean of 336.51 words (*SD* = 216.81) and 381.03 words (*SD* = 192.53), respectively, $t(1, 138) = 0.533, p = .600$. (For more information about the statistics in this article, see note A.) Table 1 shows two typical diary entries.

Table 1. Sample Pakistani & American diary entries

Country	Diary entry
Pakistan	<p>Home, 6:30 a.m. The day started as usual. Woke up to say my prayer, recited the holy Quran, took a short walk, then had breakfast and left for Jamia. It was a pleasant morning.</p> <p>Jamia (Religious University), 7:45 a.m. Upon reaching the univ[ersity], we learned that a scholar was coming from Karachi who is very intelligent, learned, respectable. The whole class was excited, and we decorated the Jamia and arranged special seating in his honor.</p> <p>Religious Lecture, 8:30 a.m. When the scholar arrived, we greeted him and the lecture started. He delivered a very comprehensive lecture. It was about oneness of God and prophethood. Everyone listened quietly. The lecture affected our hearts very well. His delivery was such that [of] the [people] attending many were in tears. The lecture then ended.</p> <p>Class 1, 10:00 a.m. Our classes then started. The instructor taught us a new subject and we were already very tired and were not very interested in the lesson.</p> <p>Class 2, 12:00 p.m. After that, our recitation class started and we read by turns. Then the learning day ended and I returned home, exhausted.</p> <p>Home, 2:00 p.m. I was very tired as I reached home. Had lunch, said my prayer and then went [and] lied down, intending to sleep. I started thinking of the lecture and how influential it was and as I thought about it, I fell asleep.</p>
United States	<p>Physical Therapy Job, 9:00 a.m. I woke up a bit late for work but it ended up okay. Work was busy so it went by really fast. I was working with one of my coworkers that I get along well with, so work was also enjoyable.</p> <p>Bar, 5:00 p.m. Home is about an hour drive so after that I met my parents at my sister's work. We just sat at the bar and chatted. She got to visit us a few times while working. It was really great to talk to [my] parents and sister; we had a really great time now that I was able to relax since my class is over.</p> <p>Home, 8:00 p.m. My boyfriend originally came over my house and hung out with my family for a bit. We invited some of our mutual friends to come over to his house, so we left for there. Friends came over and we had a few beers and watched some episodes of <i>South Park</i>. It was very nice to have friends come over.</p>

“stereotypes about Pakistanis and Americans were exaggerated in most cases”

Coding the Diaries. We trained two research assistants to code the diary entries—assigning numbers to various features—so that we could explore differences in how Pakistani and American diarists lived their lives. One coder was a female Pakistani American, the other a male European American.

We were particularly interested in two questions. First, did the diaries depict situations that were universal? We assumed that if diary readers saw people in other cultures in familiar situations, they would perceive less cultural distance between Pakistan and the United States. To determine whether the diaries depicted universal situations, we developed several codes assessing whether diary writers (a) described locations that were universal (equally prevalent across cultures); (b) mentioned events that were out of the ordinary versus mundane (defined as occurring in most people’s daily life, such as doing laundry or grocery shopping); and (c) spoke of universal activities, specifically spending time with family or eating meals. In coding the entry from a given day, for instance, a coder would indicate whether the diary writer referred more to mundane or to nonmundane events.

Second, did diaries reflect the stereotypes that people in Pakistan and the United States held about each other? The coding was designed to show whether Pakistanis’ and Americans’ stereotypes were actually accurate. It also provided some preliminary information about the extent to which the thoughts and behaviors of the diarists matched or countered stereotypes. After the intervention, these data would help us to determine whether the countering of stereotypes in the diaries was necessary for the intervention to work.

Americans who had participated in the earlier semistructured interviews had tended to view Pakistanis as aggressive and constrained (obedient to the rules of authority figures).

Therefore, we concentrated on those stereotypes. We instructed research assistants to record the number of interpersonal interactions that diary writers mentioned (as a proxy for low aggression/high warmth) and indicate whether the diary writer mentioned following the lead of an authority figure (as a proxy for constraint). The Pakistanis we had interviewed tended to view Americans as immoral, irreligious, and disrespectful of other cultures. Research assistants therefore coded whether diary entries mentioned religion, as well as whether they mentioned either of two behaviors that people in highly religious cultures might find immoral: drinking alcohol and spending time with romantic partners before marriage. We also developed codes relating to how often diary writers referenced their own country positively or negatively. Finally, we coded for how many situations Americans and Pakistanis mentioned in their diary entries. These codes allowed us to assess whether Pakistani and American stereotypes corresponded to real differences between the countries. Our coding manual is available at <https://osf.io/xstc7/>.

Table 2 shows the results of our coding and the reliability of the assessments (that is, the extent of interrater agreement). Diary writers indeed wrote about universal places and events. More than 70% of entries described locations that were common to both cultures, and more than 90% described mundane situations. Featured in many entries were meals (mentioned in more than 80% of entries) and family time (mentioned in more than 50% of entries), which appeared at similar rates across cultures.

The coding also revealed that stereotypes about Pakistanis and Americans were exaggerated in most cases. For example, Americans did mention religion less than Pakistanis did, and mentioned spending time with unmarried romantic partners and engaging in alcohol consumption more. However, they noted these latter two behaviors in just a minority of their

Table 2. Characteristics of American & Pakistani diary entries (140 total entries)

Variable	United States	Pakistan	Reliability
Number of locations (<i>M</i>)	3.37	3.70	.98
Entries describing universal locations	73%	70%	.98
Positivity of entries (<i>M</i>)	3.10	3.10	.70
Entries describing following authority figures	4%	11%	1.00
Entries describing mundane situations	93%	96%	.65
Number of interpersonal interactions described (<i>M</i>)	2.26	2.70	.66
Entries that describe meals	83%	84%	.84
Entries that describe spending time with a romantic partner	33%	0%	.89
Entries that describe spending time with family	43%	66%	.78
Entries that refer to religion	1%	50%	.87
Entries that refer to alcohol	17%	0%	.78
Entries that positively reference country	3%	3%	1.00
Entries that negatively reference country	0%	1%	1.00

Note. Reliability coefficients are Krippendorff's alphas: 1.00 reflects perfect agreement between coders, and scores higher than .80 indicate strong agreement.

diary entries, with 33% of entries referring to time spent with romantic partners and 17% of entries speaking of alcohol. Similarly, Pakistanis described following the dictates of authority figures more than Americans did, but only 11% of Pakistani entries spoke of these kinds of interactions. Other stereotypes—such as the view that Pakistanis lack warmth—did not bear out at all in the diaries: Pakistanis and Americans made a similar number of positive statements and described a similar number of social interactions in their entries, suggesting equivalent levels of warmth. In sum, our coding did reveal differences and some stereotypical behaviors across people of the two countries but also captured frequent references to common situations and positive social events.

Step 2: Intervention

Participants. Two hundred seventeen participants signed up for our study, and 200 completed it; the participants lost to follow-up did not differ appreciably from the other participants in demographics or attitudes, according to initial measures. We used a power analysis to ensure that we recruited a sufficiently large sample to detect real effects of our intervention if they were there. Our power analysis suggested that our sample had approximately an 80% chance of detecting effects of $f = .25$,

an effect size similar to that of many other interventions summarized in Paluck and Green.¹⁵ Logistical restrictions in Pakistan prevented us from gathering a larger sample.

Of the final 200 participants, 100 were American and 100 were Pakistani, and the two groups did not differ in age or gender. The Americans were undergraduate and graduate students at a large mid-Atlantic university; 50 were men, 50 were women, and their mean age was 21.08 years ($SD = 4.61$). The Pakistanis were also undergraduate and graduate students; 51 were men, 49 were women, with a mean age of 21.70 years ($SD = 3.14$). They attended various universities in two cities, with 73 in Islamabad and 27 in Abbottabad. Most participants had grown up in the region in which they were recruited and came from a range of urban, suburban, and rural backgrounds. Participants who completed the study were paid the equivalent of \$40.

Design. Participants received a set of diary entries from one of the 20 writers over the weeklong intervention. Assignment was quasi-random: rather than selecting which volunteers would read diaries from an American or a Pakistani purely randomly, we made sure that an equal number of American and Pakistani participants received in-group or out-group diaries.

The same was true for gender, although we were not focused on gender in our analyses. Each reader received diary entries from just one writer over the course of the study.

Recruitment & Initial Survey Procedure. We recruited participants via paper flyers (in Pakistan and the United States), classroom announcements (only in Pakistan), and an online forum where students could sign up to participate in studies (only in the United States). The recruitment materials stated the seven-day study was related to social memory. Volunteers who expressed interest in the study were assigned an ID number and told that they would be receiving diary entries from a randomly selected individual they had not previously met and that, over the course of the study, they would be asked questions about how well they remembered the diary entries. This e-mail also included a link to the initial online survey for those who remained interested in the study. Beyond posing the questions that gave us baseline measurements for each of our dependent variables (stereotypes and perceptions of cultural distance), this initial survey included a consent form and asked about demographics. The demographic items asked participants to identify their religion and also to indicate their income level (using a scale of 1 to 5, with 1 = *low-income group* and 5 = *high-income group*).

Intervention Procedure. We enrolled participants who successfully completed the initial survey. On each subsequent day at 5 p.m.—a time at which research assistants were consistently available to send out diaries—these participants received a Qualtrics link to a page where they could view their diary writer’s entry and then, on a separate page, recall as much as they could of it, as would be expected for a study ostensibly testing social memory. Each diary entry was headed with the diary writer’s name, nationality, and age (although, to preserve anonymity, these did not correspond to the writer’s real name and age). Participants were asked to complete each diary summary before midnight on the day they received the link. After having read all seven entries, participants received a final survey by e-mail that again assessed stereotypes and perceived cultural

distance. Then they were paid and told the true purpose of the study.

Survey Design & Measures

As we have noted, participants completed the survey twice: once before the intervention (reading the week’s worth of diaries) and once after. We assessed whether contact through diaries could reduce perceived cultural distance and in that way reduce stereotyping, as follows.

Cultural Distance. Our approach to cultural distance differs somewhat from approaches used in past investigations of that variable. In most previous investigations, researchers have examined distance by comparing objective features of the cultures in question, such as their geographic or linguistic proximity.^{1,45} In our study, however, we were more concerned with people’s perceptions of cultural distance. There is some precedent for measuring distance subjectively,^{39,40,46,47} although those studies relied on one-item subjective measures. We chose to use a four-item index of perceived cultural distance instead, to maximize reliability. Three of these survey items—rated by participants on a scale of 1 to 5—were “How similar is life between the United States and Pakistan?” (with 1 = *very dissimilar* and 5 = *very similar*), “How close do you feel to American [or Pakistani] people?” (with 1 = *very distant* and 5 = *very close*), and “How familiar do you feel with Pakistani [or American] people?” (with 1 = *very unfamiliar* and 5 = *very familiar*). The fourth item was pictorial: participants indicated which of seven sets of circles that varied in overlap represented the relationship between Pakistani and American people.⁴⁸

Items were reverse-coded so that higher scores indicated greater cultural distance. The scores were then transformed to a standard scale and averaged to form an index of perceived cultural distance.

Stereotypes. As we noted earlier, stereotype-related items in the survey were specific to each culture and based on the results of the semistructured interviews conducted prior to the intervention. Some survey items assessed stereotypes by measuring people’s endorsement

of stereotype-relevant adjectives, whereas other items measured people's endorsement of stereotype-relevant statements. In all surveys, participants answered questions about stereotypes relating to their own group as well as to stereotypes relating to out-group individuals.

Because the Pakistanis who participated in the semistructured interviews tended to view Americans as immoral and as feeling superior to and being ignorant of other cultures, our survey measured how Americans and Pakistanis perceived Americans on those dimensions. To assess views of American morality, the survey asked participants to rate the extent to which they would describe Americans as "moral" and "sincere" using a 5-point scale anchored at 1 (*not at all*) and 5 (*extremely*) for each of those adjectives. To assess the extent to which participants thought Americans felt culturally superior to or were ignorant of other cultures, the survey asked participants to rate their agreement with the phrases "The U.S. is only concerned with enhancing its own wealth" and "Americans like to dominate other cultures" using a 5-point scale anchored at 1 (*strongly disagree*) and 5 (*strongly agree*).

American interview participants tended to view Pakistanis as antisocial and as lacking freedom. Therefore, we measured how American and Pakistani participants perceived Pakistanis' warmth and their freedom to make decisions about their lives. To assess Pakistani warmth, the survey asked participants to rate the extent to which they would describe Pakistanis as "warm" and "friendly" in the same scale format with which they rated American morality. To measure perceptions of Pakistani freedom, we had participants rate their agreement with the statement "Pakistanis are too dependent on their family" and "Pakistanis lack the freedom to make important life choices," applying the same scale format used to rate American cultural superiority and ignorance.

Responses to the two adjectives relating to Pakistani sociality correlated with each other; this was also true of the responses to the two statements relating to Pakistani personal freedom,

the two adjectives relating to American morality, and the two statements relating to Americans' sense of cultural superiority and ignorance of other cultures. We therefore collapsed the eight items into four indices for all analyses of survey data. (In a sort of shorthand, we refer to these indices as measures of Pakistani warmth, Pakistani freedom, American morality, and American ignorance.) See the Supplemental Material for more details on these indexes and for three additional kinds of measurements we took but did not analyze (as well as the reasons we did not analyze them).

Data Analyses & Results

Analytic Strategy

One American participant provided incomplete responses and was excluded from analyses. We noted several differences between Pakistani and American participants that could have confounded the outcomes. For instance, Pakistani participants used higher numbers on the scales. They were also more likely to identify with a formal religion and rated their incomes to be significantly lower than the Americans did. What is more, Pakistani and American participants started the intervention on different days. We statistically controlled for each of these differences in our analyses so that they did not influence our tests of the intervention's effectiveness.^{43,49} Our Supplemental Materials describe these differences—and the statistical tests we used to control for them—in more depth.

As we have stated, we hypothesized that the intervention condition, in which participants from one culture read diaries from people of the other culture, would significantly decrease perceived distance between the cultures and that this decrease would then lead to lower endorsement of harmful stereotypes. We evaluated these predictions with several statistical tests.

First, we determined whether being in the intervention condition produced a significant change in perceived cultural distance between the start and finish of the experiment. We made this

determination using a $2 \times 2 \times 2$ (Time \times Participant Country \times Condition) repeated-measures analysis of variance (ANOVA). For the purposes of the ANOVA, Time 1 (T1) is the baseline, before the reading of diary entries, and Time 2 (T2) is after diary entries have been read. If a participant read diary entries written by a member of his or her own group, the participant was considered part of the in-group condition; if a participant read diary entries written by a member of the out-group, the participant was considered part of the out-group condition. In other words, we examined whether and how much perceived cultural distance changed after people read diaries of members of a foreign culture versus their own culture and whether this change varied for American and Pakistani participants.

We then applied a set of tests to determine how the intervention condition's effect on participants' perceived cultural distance mediated stereotyping. Our initial approach used Preacher and Hayes's PROCESS macro (a kind of moderated mediation analysis),⁵⁰ and we followed those analyses with a supplemental set of Monte Carlo simulations. The PROCESS macro allowed us to test whether perceived cultural distance mediated differences between the out-group and in-group conditions in endorsements of a particular stereotype at the conclusion of the study, whereas the Monte Carlo simulations allowed us to test whether cultural distance mediated changes in stereotypes over the course of the intervention for people who read out-group diary entries. The Supplemental Materials contain more details about the analyses we performed.

Did Cultural Distance Change?

The analyses supported our prediction that reading diary entries from the out-group would reduce cultural distance, compared with reading diary entries from one's own cultural group. Our ANOVA found a Time \times Condition interaction, $F(1, 188) = 6.08$, $p = .015$, $d = 0.32$. Pakistani participants who received out-group diary entries showed reduced feelings of cultural distance between the beginning (T1) and the end (T2) of the intervention ($M_{T1} = 2.48$ versus $M_{T2} = 2.38$; standard error [SE] at T1 = .08 versus

$SE_{T2} = .09$), $F(1, 46) = 5.35$, $p = .024$. Americans displayed the same pattern ($M_{T1} = 2.32$ versus $M_{T2} = 1.99$; $SE_{T1} = .10$ versus $SE_{T2} = .10$), $F(1, 47) = 6.74$, $p = .010$. In contrast, people who read their own culture's diaries showed no change ($ps > .634$). The pattern did not significantly differ across Americans and Pakistanis ($p = .343$), suggesting that the intervention had similar effects on perceived cultural distance for both cultures. The change in perceived cultural distance also remained significant ($p < .016$) in subsequent ANOVAs, including tests that examined participant gender and diary writer gender, which did not significantly moderate the interaction ($ps > .475$).

Did Changes in Cultural Distance Catalyze Changes in Stereotyping?

We also found evidence that reduced cultural distance facilitated reductions in the stereotypes we examined. By virtue of reduced cultural distance, American participants who read Pakistani diaries viewed Pakistanis as warmer and as having more freedom at the end of the intervention, compared with Americans who read American diaries. Similarly, Pakistani participants who read American diaries viewed Americans as more moral and less culturally superior and ignorant at the end of the intervention, compared with Pakistani participants who read Pakistani diary entries.

Table 3 summarizes these effects in terms of confidence intervals (CIs). The moderated mediation CIs represent the results of our PROCESS analyses and indicate whether participants in the out-group conditions showed greater reductions in stereotypes over time compared with participants in the in-group conditions, as a function of their perceived cultural distance. The Monte Carlo CIs are derived from Monte Carlo simulations and indicate whether participants in the out-group conditions significantly changed their stereotyping over time, as a function of perceived cultural distance. Figure 1 summarizes the full moderated mediations and displays the indirect and direct effects assessed by these analyses. Figure 1's caption gives a detailed explanation of how to interpret the figure's components.



There have been **200,000** violent civilian casualties from US-involved wars in Afghanistan, Pakistan, and Iraq over the last 20 years



71.6% of Americans surveyed believe that Pakistan is a Middle Eastern nation

77%

Americans surveyed who would sign up for DCT without compensation

Table 3. Effects of condition (reading out-group or in-group diaries) on stereotyping as mediated by changes in perceived cultural distance

Moderated mediation results (indicating whether perceived cultural distance mediated differences between the out-group and in-group conditions in endorsements of a particular stereotype at the conclusion of the study)				
Type of analysis	Trait			
	Pakistani warmth	Pakistani freedom	American morality	American ignorance
Overall moderated mediation fit	[−.09, −.003]	[−.11, −.002]	[.01, .11]	[−.25, −.004]
Americans in out-group condition versus Americans in in-group condition	[.001, .06]	[.003, .08]	[−.05, .007]	[−.13, .02]
Pakistanis in out-group condition versus Pakistanis in in-group condition	[−.05, .002]	[−.05, .02]	[.004, .09]	[−.28, −.02]
Monte Carlo results (indicating whether cultural distance mediated changes in stereotypes over the course of the intervention for people who read out-group diary entries)				
Americans in out-group condition before versus after reading Pakistani diaries	[.01, .15]	[.01, .21]		
Pakistanis in out-group condition before versus after reading American diaries			[.0003, .11]	[−.30, −.001]

Note. Numbers in brackets represent confidence intervals, or probabilistic margins of error for the analytic results. If both values are negative, there is at least a 95% probability that the true value falls within the interval and is negative, and if both values are positive, there is at least a 95% probability that the true value falls within the interval and is positive. If one value is positive and the other is negative, the effect is not statistically significant. The table shows that people in the out-group condition, who read diaries from the other culture, perceived less distance between the cultures after reading diaries, which led them to engage in less stereotyping than people in the in-group condition did. Compared with their original views, perceiving less cultural distance prompted Americans to see Pakistanis as warmer and freer and Pakistanis to see Americans as more moral and less ignorant of other cultures.

Discussion

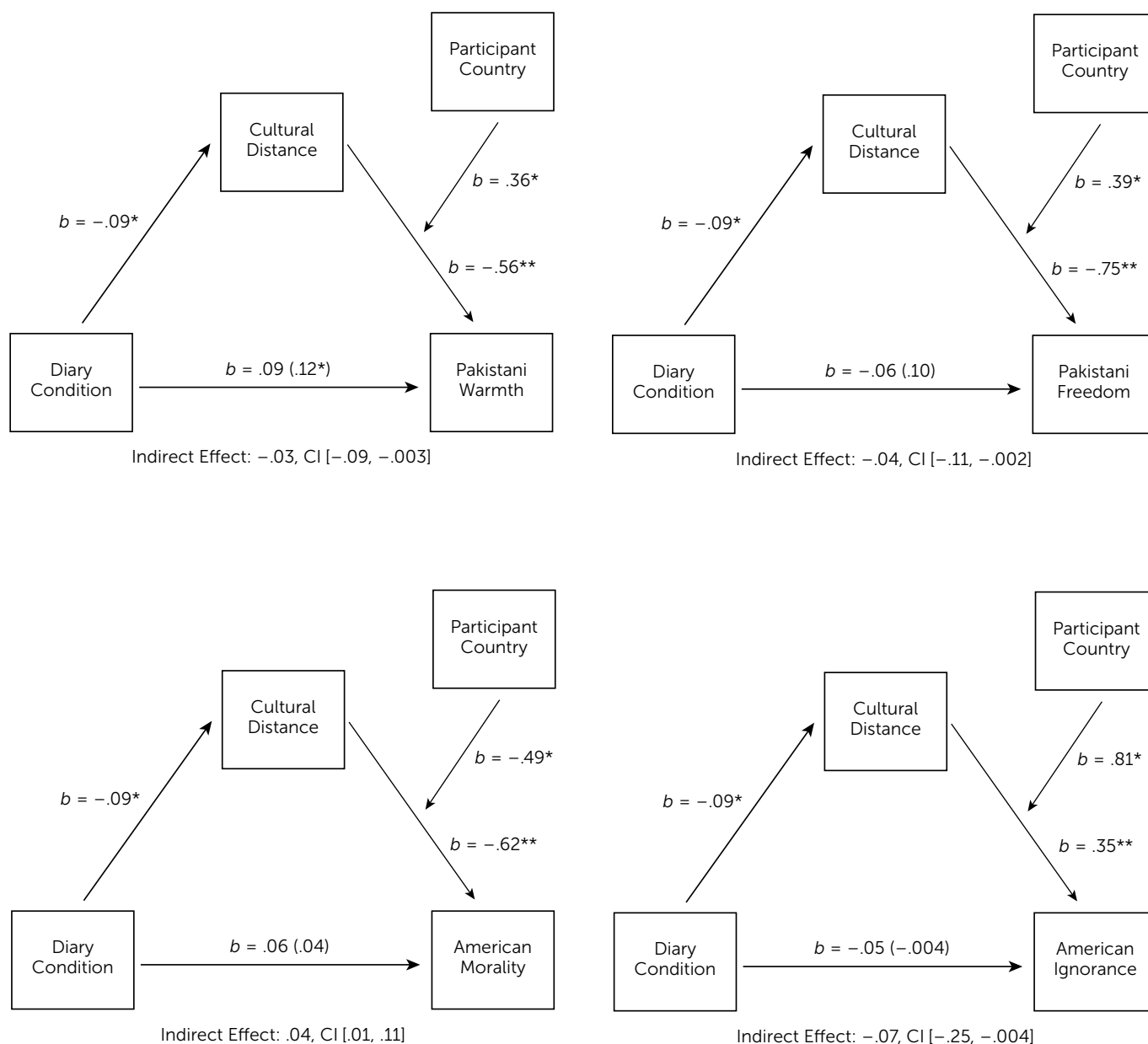
The world is increasingly interconnected, but it is also still regularly disrupted by conflict between groups. The hostility fueling these conflicts can be exacerbated when the mass media stereotype people from different cultures. We argue that these negative out-group stereotypes could be reduced by an intervention that encourages people to learn about out-group members' real experiences in daily life, which are often diverse and, contrary to stereotyping, much like the daily lives of the people who stereotype them. In this article, we introduce the DCT as such an intervention and provide initial support for the method's efficacy through a study of Pakistanis and Americans.

After seven days of reading real diary entries written by a randomly assigned individual from the other culture, participants in the out-group condition reported less perceived cultural distance between Pakistan and the United States, whereas no such change occurred for participants who read diary entries written by a person from their own culture. Before conducting the study, we had identified common negative stereotypes of each culture

through in-depth interviews of Pakistanis and Americans not involved in the study. The reductions in perceived cultural distance mediated a decrease in these negative out-group stereotypes. As a result of the reduced sense of cultural distance, Pakistanis who read American diaries, but not those who read Pakistani diaries, changed their views of Americans, perceiving them as more moral and less dismissive of other cultures than was the case before they read the diaries. Americans who read Pakistani diaries likewise came to perceive Pakistanis as friendlier and freer to make life decisions than they had originally thought. The change in stereotyping was country-specific (for example, Pakistanis changed their beliefs regarding Americans but not regarding Pakistanis), indicating that the participants who revised their views did not become more positive about people in general, only about people sharing the nationality of the diary writer.

It is impressive that unfiltered diaries were able to induce these attitude changes. Many interventions aimed at reducing bias toward other cultures present situations or images that are purposely manipulated to run counter to stereotypes. Our diaries, however, contained a wide

Figure 1. The effects of reading diaries on perceived cultural distance & the four tested stereotypes



Note. Each plot corresponds to a different stereotype. Moderated mediation analyses confirmed our hypotheses that reading diary entries from someone in another culture could lead people to perceive less cultural distance between themselves and the other group and that this reduction would, in turn, lead to less stereotyping of the out-group. These plots show the findings for each stereotype separately.

The b values next to the arrows (unstandardized regression coefficients) indicate how much one variable is likely to change the other variable—for instance, how being in the out-group or in-group diary condition made a difference in perceived cultural distance among both American and Pakistani participants. The b values next to the arrow extending from the Participant Country box show that the diary reader's nationality influenced how strongly perceptions of cultural distance influenced trait assessments (the effect was strong only when the nationality of the diary reader differed from that of the diary writer).

The b value outside the parentheses on the arrow from the Diary Condition box to a stereotype-related trait indicates the total effect of the condition—the raw relation between being in the out-group condition and perceptions of a given trait; the number in the parentheses is the direct effect—the relation between being in the out-group condition and perception of a given trait once variance associated with cultural distance has been removed. The direct measures are given for completeness; however, they are not meaningful, because they are confounded by merging the measures for out-group stereotyping with measures for in-group stereotyping (such as Pakistanis' rating of Pakistani warmth).

The indirect effect noted at bottom is an estimation of the overall effectiveness of the intervention. In other words, did the data support our hypotheses? The confidence intervals (CIs) shown here and in the top row of Table 3 indicate that they did.

* $p = .05$. ** $p = .005$.

“participants in the out-group condition reported less perceived cultural distance between Pakistan and the United States”

range of situations and events, and some were consistent with prevailing stereotypes. American diarists, for instance, sometimes wrote about drinking alcohol and sleeping with casual romantic partners. Pakistani diarists sometimes wrote about religion and being disciplined by teachers. However, the authors intermingled these stereotype-congruent events with counter-stereotypic information and situations that highlighted the basic similarities between life in the United States and life in Pakistan. Providing this rich information about life in other cultures appears to be an effective way of reducing negative stereotypes of out-groups.

Our findings also support the effectiveness of virtual contact interventions. Although the DCT does not feature face-to-face contact—which was one of Allport’s original conditions for successful contact¹³—it nonetheless reduced perceived cultural distance and broke down negative stereotypes in this study. Indeed, few studies have systematically assessed the necessity of Allport’s conditions,²⁰ and our intervention’s success suggests that these conditions may not always be essential for contact to reduce prejudice.

When & How to Apply the DCT: Information for Policymakers & Organizations

We consider the DCT to be a useful alternative for researchers who cannot logistically implement traditional contact-based interventions. If further research confirms its value, we can see many ways that policymakers can use the DCT to ease tensions between hostile groups. For example, teachers or school superintendents could implement a version of this program that encourages children to read the diary entries of similarly aged children from other cultures. Organizations with employees from diverse backgrounds could use diaries to build familiarity and comfort between their staff members. Nonprofits and advocacy groups could collect diary entries from members of the cultural

groups that they represent and host these diary entries in an online database that allows people to learn about the daily lives of people from underrepresented groups. Governments could even create databases that would allow people in conflict-prone areas (such as Israel and Palestine) to learn about the lives of people whom they typically learn about only in news reports or on television. Even in the United States, political advocacy groups could consider using the diaries of people from liberal and conservative areas of the nation to break down political stereotypes and misconceptions. The intervention could also be useful for improving relations between citizens of the United States and immigrants.

One might wonder if people in these contexts would be willing to read the diaries of out-group individuals, given the time commitment required. However, a 350-person survey that we conducted of a nationally representative sample of Americans found that 77% of respondents would sign up for the intervention with no compensation, which suggests that many people are genuinely interested in reading the diaries of everyday individuals from around the world.

Although we emphasize that the DCT is particularly useful when groups are geographically distant and do not speak the same language, we note that it should also be effective among groups who live in the same region but are relatively unfamiliar with one another’s norms and values. The intervention is useful in any context because it can be distributed online like other computer-mediated-communication interventions^{24,30,51} or as hard copies. The DCT, moreover, is built to easily scale up to large numbers of participants, both in the real world and for research. Implementers need only to collect a suitable number of diary entries (we chose seven entries from 20 individuals) and make sure that participants in an intervention receive these diary entries on a regular basis.

We chose to e-mail an entry each evening over the course of the week, but other time frames may be appropriate, depending on an intervention's scope. Diaries can be custom curated, as they were in this study, or existing diaries can be adapted and hosted online if ethical approval is granted and the entries are clearly anonymous (see the work of David Broockman and Joshua Kalla⁵² for an example). If given the opportunity, people around the world may even be willing to contribute their own online journals. These journals need only be translated, anonymized, and hosted on a publicly accessible domain.

When recruiting participants for research, implementers must choose whether to include a control group—perhaps individuals who are e-mailed diary entries written by people from their own culture or who are not e-mailed at all. But a control group is necessary only for projects that seek to scientifically test the efficacy of the DCT.

Limitations & Future Directions

Despite the intervention's promising results, we acknowledge a few limitations and several avenues for future research. For example, because our intervention lasted a week, we cannot be sure whether its effects persisted beyond that time, a limitation that Paluck and her colleagues found to characterize many interventions.²⁰

We have a couple of reasons to suspect, however, that the effect may be durable. First, it provides real information about out-groups to people who have, by and large, had very little out-group contact. In the past, the interventions that have led to persistent effects are ones that have involved learning-based interactions with typical people from an out-group. For example, Broockman and Kalla have speculated that a canvassing intervention they used to reduce transphobia was successful because, even though the meetings were short, they gave people who generally do not have contact with openly transgender individuals the opportunity to learn about them firsthand.⁵² Americans and Pakistanis also typically have very little contact,

and our diary entries were likely the first time that our volunteers had seen life in the other culture described from the standpoint of an ordinary citizen.

Second, the most durable prejudice-reduction responses are those that occur when people generalize their positive feelings toward out-group individuals encountered in a study to the out-group as a whole. According to past research,^{36,53} such generalization is most likely to occur when contact occurs between "prototypical" group members.^{53,54} Even though our sample consisted of students, their everyday lives were typical of people in their culture, involving such activities as mowing the lawn, playing video games, eating dinner with family, and going on picnics with their friends. Reading about such activities probably explains why participants in our study changed their views on Pakistanis and Americans in general rather than viewing the person whose diary entries they read as atypical.

Another limitation is that our reliance on a student sample makes it difficult to generalize our findings to the broader public. Generalizability is critical for effective interventions, and real-world interventions should be replicable across groups that vary in their socioeconomic, religious, and educational backgrounds. There is some evidence that the DCT would work in varied populations. For example, participants' socioeconomic status and religious affiliation did not moderate the effects in our sample, which suggests that the intervention's efficacy generalizes to different demographic groups. Nevertheless, until the DCT is validated in a more representative sample, we cannot be sure that this supposition is correct.

We are also aware that the DCT could be co-opted for nefarious ends. Organizations or governments could intentionally manipulate the content of diary entries to depict selected groups as hostile, which research shows can lead to escalating tensions and conflict.⁵⁵ Indeed, negative contact can often affect inter-group attitudes more powerfully than positive contact does.^{56,57} We therefore emphasize that

using real diary entries—which earnestly depict universal everyday events—is key to the beneficial use of the DCT. Of course, real diary entries could potentially express hostility toward other groups, but that was not our experience. Pakistani diary writers in our study never expressed hostility toward Americans in their diaries and vice versa, which was likely a key part of why our intervention was successful.

Finally, we acknowledge that our measures targeted perceptions of cultural distance and specific negative stereotypes but did not test the intervention's effects on other attitudes (such as trust between the groups) or discriminatory behavior. We nevertheless consider our focus on perceived cultural distance and stereotypes to be important because it targets two pernicious misconceptions about out-group cultures: that out-group individuals possess several unlikeable qualities and that those qualities make such individuals fundamentally different from in-group members. Moreover, because explicit negative stereotypes tend to be correlated with prejudiced behaviors,⁵⁸ we consider it likely that the DCT paradigm would end up reducing those behaviors. For example, people who express negative rhetoric toward out-groups are also more likely to vote for politicians who advocate war against these groups⁵⁹ and less likely to help someone from an out-group when that person is in need.⁶⁰ Nevertheless, future researchers should directly test the scope of the DCT's effects, with a focus on determining whether they extend to reducing discriminatory behavior.

Future researchers should also examine whether the DCT can be scaled up to larger samples around the world and whether DCT-driven reductions in prejudice toward one culture might spill over to attitudes toward people in additional cultures—for example, whether Americans who read about Pakistanis then view Egyptians more favorably. And investigators should explore whether factors we have not addressed—such as individual differences or diary content—might moderate the efficacy of the DCT. We also encourage researchers to test the DCT in samples of people who hold more strongly to stereotypes than our volunteers did (and so are potentially less open to change), as

well as in regions where seemingly unresolvable conflicts are occurring. In one past intervention, Israelis and Palestinians who were encouraged to adopt a more malleable mind-set about out-group members showed a reduction in prejudice.^{16,17} Given that reading diary entries appears to facilitate a broader and more flexible view of people in other cultures, the DCT could exert a similarly positive effect.

Investigators would also do well to more deeply examine the psychological mechanism behind our effects. Reading a foreign person's diaries may reduce stereotypes via several routes. It could (a) provide information that personalizes members of the other group,^{37,61} (b) provide descriptions that run counter to stereotypes,³⁸ or (c) emphasize common connections.^{1,39–42} We consider it most likely that a combination of (b) and (c) operated in this study, which would explain why shrinking of perceived cultural distance mediated our effects. Nevertheless, our study was not designed to tease apart competing mechanisms, and research into the true mechanism behind our findings should be fruitful.

Conclusion

The DCT contributes to a growing set of virtual interventions meant to reduce the biases that can poison relations between groups. As is true of many virtual-contact interventions, ours did not have our participants interact directly. However, their indirect interactions through diary entries appear to have produced many of the same positive effects as previous interventions that relied on face-to-face contact—perhaps because diaries provide rich, personal, and authentic information about the everyday experiences and situations of people around the world.

Reducing intercultural conflict in today's interdependent world is arguably one of the most important challenges facing social science. The DCT intervention, which is theoretically rooted and logistically convenient, offers a way to do just that. It applies social psychological theory to intergroup relations in a way that could ease seemingly intractable disputes.

endnote

A. Editors' note to nonscientists: For any given data set, the statistical test used—such as the chi-square (χ^2), the t test, or the F test—depends on the number of data points and the kinds of variables being considered, such as proportions or means. The p value of a statistical test is the probability of obtaining a result equal to or more extreme than would be observed merely by chance, assuming there are no true differences between the groups under study (that is, the null hypothesis). Researchers traditionally view $p < .05$ as the threshold of statistical significance, with lower values indicating a stronger basis for rejecting the null hypothesis. In contrast to the case with p values, a large F value is a sign of significance. In addition to the chance question, researchers consider the size of the observed effects, using such measures as Cohen's d or Cohen's h . Cohen's d or h values of 0.2, 0.5, and 0.8 typically indicate small, medium, and large effect sizes, respectively. When confidence intervals are given, a 95% confidence interval indicates that there is less than a 5% probability that a result would fall outside the range indicated in brackets.

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author note

The authors contributed to the article as follows: Joshua Conrad Jackson and Michele J. Gelfand formulated the research idea. All authors contributed to the design and to data collection. Jackson and Gelfand analyzed and interpreted the data and drafted the manuscript. All authors approved the final version of the manuscript for submission.

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supplemental material

- <https://behavioralpolicy.org/publications/>
- Methods & Analyses

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Rebuilding trust between police & communities through procedural justice & reconciliation

Thomas C. O'Brien & Tom R. Tyler

abstract

In many societies around the world, segments of the public strongly distrust legal and political authorities. Regardless of how the distrust arises, it lessens the possibilities for future social cohesion, democratic governance, and successful economic development—factors that define strong communities. How can authorities build trust amid a legacy of distrust? In this review, the authors focus on relations between the police and communities and draw on two psychological literatures that articulate evidence-informed trust-building strategies. One, the *procedural justice approach*, concentrates on the fair and respectful exercise of authority during everyday interactions between individuals. The other, *reconciliation*, involves gestures that are carried out at the community level with the expressed intention of addressing past injustice and that promise changes in an authority's future relations with a community. This review concludes with policy recommendations, drawn from both literatures, describing a process of trust building that involves substantive improvements in procedural justice combined with reconciliatory gestures that signal a sincere intent to increase trust through service to communities.

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Social, political, and economic discrimination by authorities against a range of racial, religious, and ethnic groups is a sorry and continuing part of America's history. It has interfered with people's ability to buy homes, get hired and promoted in jobs, and receive health benefits, among other injustices. And America, of course, is not alone in this type of discriminatory behavior. It is no wonder, then, that political and other authorities around the world often lack legitimacy (acceptance as rightful, trustworthy bearers of power) in the eyes of the people they are meant to serve and find themselves encountering distrust and hostility. How can authorities who want to rebuild trust go about it?

In this article, we examine this question in the context of American policing, a context that offers a highly visible example of the challenges of trust building. Law enforcement as an institution has a long legacy of enforcing segregation and inequality, and individual officers continue to act in discriminatory ways—as news reports detailing beatings and killings of unarmed black men attest. If strategies for rebuilding trust between the police and communities in America can succeed, such achievements could pave the way for improving trust-building efforts beyond policing and beyond America.

Psychological research provides several potential paths forward for rebuilding trust between the police and the community. We focus on two—delivering procedural justice and engaging in reconciliatory actions—and delve into the research behind those approaches.

By way of context, we note that a substantial body of research in other fields (including sociology, organizational behavior, and organizational psychology) also has implications for trust building; their findings are not inconsistent with the implications proposed here.¹ One major finding of this extensive, multidisciplinary behavioral science research is that the ability to trust requires an acceptance of vulnerability.² In fact, scholars have defined *trust* as a psychological state in which a person is willing to be vulnerable because he or she expects the intentions or behavior of another to be positive.³ Trust can thus entail high stakes, particularly when

vested in powerful entities such as institutions and when people aware of past misconduct have good reasons to be wary of overtrusting the authorities in their communities.

The results of a national survey help to clarify why the police would want to take steps to enhance communities' belief in their trustworthiness. The survey compared three potential views of the police that might shape people's civic behavior: whether they view the police as legitimate, whether they think the police are accurate (such as not making mistaken arrests), and whether they believe that the police are effective in managing community problems such as crime.⁴ Figure 1 compares the influence of these factors on compliance with the law, willingness to report crimes to the police, willingness to testify in court if needed, and willingness to bring grievances to the police for redress rather than engaging in acts of private retribution or vengeance. The results indicate that the police have a great deal to gain from being viewed as legitimate: Legitimacy is the most powerful influence on all of these behaviors. Police officers who are seen as legitimate can do their jobs much more effectively. We argue that a combination of procedural justice and sincere efforts at reconciliation can go a long way toward enhancing trust in the police.

Benefits of Procedural Justice & Reconciliation

Procedural justice is the use of dispute-settling procedures that the people involved would say are unbiased, give them a voice, and treat them with respect.⁵ It is one of the best-studied and most-used methods for building legitimacy. By reorganizing policies and practices using a procedural justice framework, legal and political authorities can alter their behavior toward the public in ways that counteract negative beliefs about the authorities and earn the trust of the people they affect. Although trust building is more difficult when the parties involved begin from a position of strong distrust, it is still possible to achieve.^{6–8}

Abundant research supports the benefits of procedural justice in general and also specifically

Core Findings

What is the issue?

Community distrust in law enforcement remains a serious issue in the United States. Psychological research can assist policymakers and law enforcement officials in rebuilding this trust. Delivering procedural justice and engaging in reconciliatory actions are two ways in which to do so. This has broader implications for authorities seeking to build trust and gain legitimacy.

How can you act?

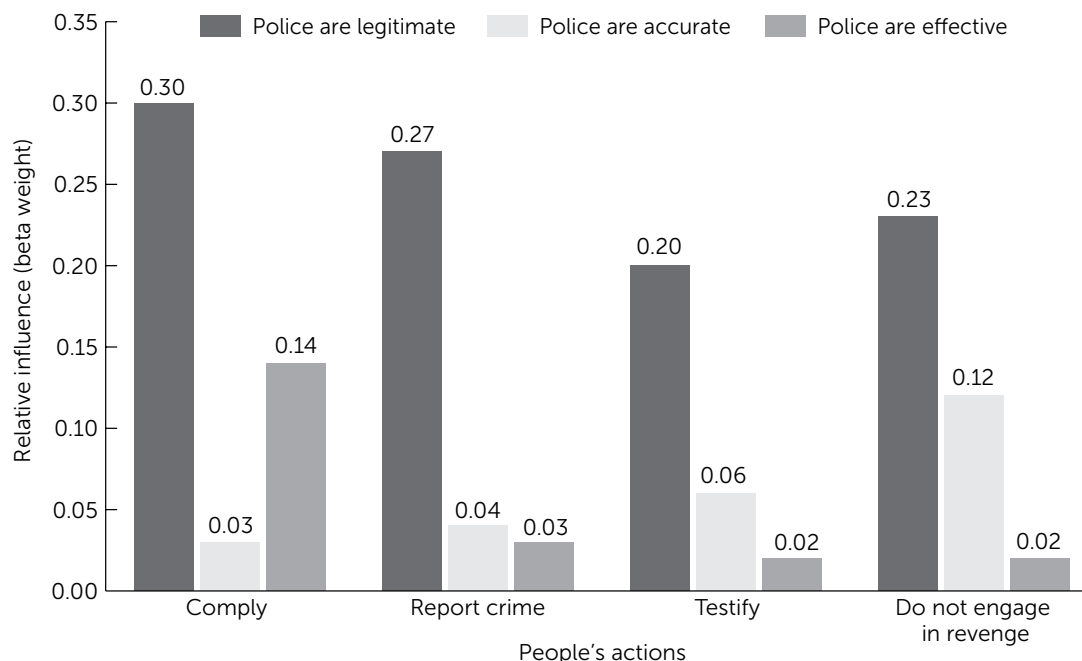
Selected recommendations include:

- 1) Transitioning law enforcement from a militaristic model to a service model, adopting metrics that measure community feelings and concerns
- 2) Evaluating the community's perception of the sincerity behind gestures designed to build trust

Who should take the lead?

Researchers, policymakers, and stakeholders in law enforcement

Figure 1. How citizens' views of police affect their actions



Note. Whether people comply with laws, report crimes, testify in court, and bring problems to the attention of legal authorities instead of engaging in private acts of retribution is affected more by whether they think the police are legitimate than by whether they think the police are accurate (do not make mistaken arrests) or are effective in managing problems in their community. The data come from a 2012 national survey of 1,603 randomly chosen Americans who were asked about their attitudes, beliefs, and behaviors. The bar heights represent the relative influence of each factor on the behavior listed. In statistical terms, they are beta weights for a regression that includes all three factors. Details of the study are explained in Tyler and Jackson, 2014.

Tyler, T. R., & Jackson, J. (2014). Popular legitimacy and the exercise of legal authority: Motivating compliance, cooperation, and engagement. *Psychology, Public Policy, and Law*, 20, 78–95.

when applied in policing.⁵ But simply instituting new procedures is not enough. Policymakers must also attend to several related practical issues. In the case of policing, procedural justice requires officers to change their everyday behavior toward the community—which itself involves changing the goals of policing, altering the culture of how police deal with the public, revising training programs and work rules, and in many cases revamping the internal culture of police departments themselves. For example, the police can make building public trust an organizational goal, reward officers who earn the trust of the community, and recognize the importance of seeking community input when making department policies. When these tasks have been successfully accomplished, police departments can increase public trust over time by managing problems in the community in a new way.

Procedural justice strategies are forward looking and meant to improve interactions

with individuals. They do not focus on the past, nor are they centered on acknowledging or apologizing for that past. They assume that if authorities treat people fairly, the affected individuals and others who hear about good experiences with the authorities will increasingly come to trust them. Although procedural justice approaches focus mainly on individuals, police leaders who implement them may, of course, make statements to the community that highlight the features of procedural justice—for example, by explaining why the police have adopted new policies, stating the goal of treating community members respectfully, and pointing out ways that the police will be held accountable (such as through complaint mechanisms).

One drawback of the procedural justice approach is that its lack of attention to the past means that any existing distrust can slow the process of trust building, with community

“police leaders can jump-start the trust-building process instead of waiting for people to notice the fairer treatment”

members interpreting their new experiences through the lens of the past.⁸ Authorities can compensate for this problem by complementing procedural justice with diligent work toward reconciliation.

Reconciliation is a process that emphasizes gestures intended to earn the trust of communities; these gestures address the community rather than individuals and acknowledge historical and other reasons for any distrust. Such efforts differ from procedural justice both in concentrating on the community as a whole and in recognizing, explicitly or implicitly, that authorities have acted with procedural injustice in the past (whether as an institution toward a group, such as African Americans, or in individual interactions).

Psychological research has shown that reconciliatory actions can ameliorate the distrust that arises from past injustice.^{1,9} The exact actions can vary, but they should display recognition of the past injustice; acknowledgment of the past harm; and either acceptance of responsibility, an apology, or both. It is key that authorities confront the past, not simply move beyond it. Moreover, to repair relationships, authorities making reconciliatory gestures should recognize that a community's needs have not been met and make it clear that change is occurring to redress that past failure. We emphasize the role of process in defining reconciliation because it is not one speech or event that will succeed in building trust but rather a series of gestures that community members view as coinciding with substantive improvements in procedural justice.

Reconciliation can have many goals.¹⁰ In this article, we focus on efforts intended to increase the community's trust in the police and to inspire community members to behave

lawfully and cooperate with the police. Police gestures may include conducting community meetings attended by both authorities and members of the public to discuss crime, safety, or trust of authorities; having officers mentor or coach youths or volunteer their time to help community members; or running a police department–led summer camp. The actions might also take the form of statements that overtly or implicitly acknowledge existing distrust and signal a desire to change the relationship. For instance, police could express remorse over past actions that have hurt the community, accept responsibility for such harm, or apologize for it—as when a Georgia police chief apologized in 2017 for a lynching that occurred decades earlier.¹¹

By communicating directly with the community, police leaders can jump-start the trust-building process instead of waiting for people to notice the fairer treatment being accorded by the police through procedural justice. In other words, by directly addressing the past, police who engage in such reconciliation efforts can potentially dispel a legacy of distrust more quickly than they could by relying solely on the incremental, essentially future-facing approach to trust building that characterizes procedural justice. Of course, although gestures can initiate and help to sustain a process of reconciliation, they cannot be expected to completely and suddenly resolve distrust. Forgiveness for a specific event or for a systemic problem is especially difficult to muster when past experiences have created strong distrust.⁹

In the balance of this article, we consider what research says about the outcomes of past procedural justice and reconciliatory efforts, which factors influence success, and the potential downsides to engaging in these approaches when addressing alienation and distrust. Many police departments have embraced some aspects of procedural justice, but reconciliatory gestures have been less widely used, and their effects have been less studied. Procedural justice policies are easier to adopt because they focus on changing what the police do in the future without noting historical problems or grappling with such issues as whether and

how to acknowledge or apologize for existing distrust. In this review, therefore, we attempt to fill in the gap and emphasize empirical research on the reconciliatory approach. Although we describe these literatures separately, we believe that trust building requires substantive improvements in everyday procedural justice combined with reconciliatory gestures to the community.

Research on Procedural Justice

Overall, research into procedural justice demonstrates that it is an effective way to build and maintain trust^{4,5,12,13} and legitimacy.^{14–18} Community members grant authorities legitimacy when the authorities demonstrate that the methods they use to make and implement decisions are fair—such as when, after pulling over a speeding driver, an officer explains that surpassing the speed limit was the reason for the stop and listens to the driver’s explanation. Procedural fairness affects legitimacy more than various other contributing factors do, such as whether people receive the outcome they desire,¹⁹ whether the outcomes themselves are deserved, or whether the police are deemed effective at managing crime and other community problems.¹³ These procedural justice findings have been replicated at the individual and community levels, with people reacting both to their own experiences and to their impression of what goes on in their neighborhood.^{16,20}

Whether fairer procedures will increase trust in authorities depends on many factors beyond the implementation of the procedures themselves. Judgments are influenced, for instance, not only by fairness but also by whether people are given the opportunity to provide input when policies are initially being designed.²⁰

Past history and inferences about the motivations of authorities matter as well. When legal authorities try to build popular legitimacy using procedural justice approaches, they often have to do so from a starting point of distrust. As panel studies (which make comparisons at different points in time) have demonstrated, people’s views about the police after direct personal contact are colored by both their prior views and the nature of their new experience.⁸

Indeed, procedural justice research consistently finds that people react strongly to their inferences about the motives of legal authorities.⁴ What is more, the perception that most shapes public reactions is whether the authority is sincerely trying to address a person’s or a group’s needs and concerns. For example, when survey respondents were asked about their degree of agreement with the statement that police officers “try to do what is best for the people they are dealing with,” the respondents’ answers correlated notably with their trust in the police. Similarly, a respondent’s belief that judges are “trying to do what is best for the people they are dealing with” correlates closely with that respondent’s trust in the courts.

The strong influence of inferred motives highlights the importance of sincerity in both procedural justice and reconciliatory gestures.⁹ If community members infer that the police truly regret past injustices or intend to make beneficial changes in procedures and behavior and then find that the authorities were insincere, this lack of sincerity is likely to backfire in the long run. To be sustainable over time, the effort to build trust must involve policies that community members view as sincerely motivated.

To be sure, procedural justice and reconciliation efforts have some commonalities. Procedural justice does, after all, contain an element of reconciliation: If the community desires respect as well as acknowledgment and affirmation of its dignity, and if the motivation of authorities is a sincere desire to address the needs and concerns of the community, then procedural justice is partly about addressing grievances that arise from the past. It does not, however, acknowledge or address those concerns directly.

If authorities say, “You are entitled to treatment with dignity, and we will give you that type of treatment in the future,” that statement is similar to but not the same as saying, “We acknowledge that you have been treated unfairly in the past; we apologize for that past mistreatment, and we will treat you differently in the future.” The latter statement moves into the realm of reconciliation.

Procedural justice is necessary for legitimacy and trust building, but it takes more than procedural justice to achieve legitimacy in a context of distrust. Groups in the United States who have suffered systemic discrimination have strong reasons to distrust the motives and behaviors of the government. Their concerns are distinct from the low level of trust that many people have in the motives and behaviors of authorities on the basis of their own personal experiences.^{7,9} When group-based distrust runs high, authorities need to engage in a trust-restoring process that involves major improvements not only in procedural justice but also in how the past is addressed.

Research on Reconciliation

Next, we review a selection of reconciliation research studies that are relevant to policing but do not directly address policing. Then we turn to studies focused specifically on the police.

The reconciliation literature complements the procedural justice literature in several ways. First, it emphasizes antecedent conditions, such as the degree to which parties have equal power or common goals and how these antecedent conditions can influence perceptions within and following the interaction.²¹ For instance, although groups in conflict may have equal status in specific contexts (such as by law), their power is usually asymmetric.²² The procedural justice literature focuses not on antecedent conditions but on what happens during interactions (that is, on whether the police enact the rules governing just decisionmaking) and on how people should be treated. Second, as noted, reconciliatory gestures are directed at entire communities, whereas procedural justice is directed at particular people, and the literature reflects that difference. Finally, reconciliation involves attention to the past, whereas procedural justice relates to current and future actions.

Broad Findings

In reviewing reconciliation research, we have concentrated on literature addressing the repair of relations between groups rather than between individuals. Researchers conducting

this work have sought to understand how groups in conflict can build trust and overcome hostility. With the exception of research into the legitimacy of the South African government near the end of and after apartheid,^{23,24} the psychological literature we examined has largely focused on the attitudes of and interactions between different ethnic or social groups and on the factors that influence behaviors that affect and are affected by relations between groups.

One such behavior is the willingness of the members of different groups to become friends and cooperate with members of other groups, including different racial and ethnic groups. This research tends to support *contact theory*: it shows that, under certain circumstances, contact (which could include direct conversation or other forms of interaction) can increase positive attitudes between groups,^{25,26} in particular when individuals have close and positive contact, such as when they become friends.²⁷

Research into the effects of intergroup contact reveals that groups can differ in their responses to interactions. Authorities embarking on reconciliation efforts need to keep these differences in mind. Although contact strongly reduces prejudice in members of powerful groups, the impact of contact is milder in members of less powerful groups.²⁵ Research on intergroup contact suggests that background factors reflecting the power or status of the group, such as race or income level, strongly shape the motives of the parties involved.^{10,22,28,29} For instance, groups that have more power may be less motivated to examine power differences.²² Such findings indicate that, to be successful, contact interventions should not focus solely on prejudice reduction but must also focus on justice.²²

Studies likewise show that circumstances influence whether efforts at reconciliation have positive or negative consequences for individuals and societies. Reconciliatory efforts can, for instance, build a community's social capital—increasing the strength of social networks and norms that favor contributing to the common good. But they can also undermine the mental health of victims.³⁰ For example, although truth

telling could have psychological benefits, in the context of the Gacaca courts of Rwanda following the 1994 genocide, witnesses who testified had higher levels of posttraumatic stress disorder and depression than nonwitnesses did.³¹

Satisfying interactions can reduce a group's perception that other groups have bad intentions.^{26,27,32,33} At times, though, positive contact might not have completely positive consequences: Certain communities may be leery of having good interactions with more powerful groups that might abuse the less powerful group's trust; such a wariness could reflect the recognition that positive feelings about the interactions could undermine their own group's will to demand social change. For example, Tamar Saguy and her coauthors³⁴ have conducted research demonstrating a tendency for positive contact to undermine motivation for social change.

As we have noted, people routinely attempt to infer the motives behind the behavior of others,^{35,36} and they are likely to wonder why authorities who attempt reconciliation are doing it. They might ponder the issue especially intently if they have reason to believe that someone could be acting deceptively. (In the case of policing, many communities have reasons to suspect that the police might be disingenuous and will eventually betray the trust they are seeking.)

Some work has focused on the question of how perceptions of the motives behind reconciliatory gestures can affect the gestures' success. Gestures will impress a community favorably only if (a) its members infer that the authority's motivation in making the gestures stems from a true desire to restore trust and help the community and (b) the community is not suspicious that some other agenda is operating; communities may be less likely to infer sincerity when they start from a place of strong distrust.⁶ Whether reconciliatory gestures enhance trust and cooperation will also depend on such factors as whether procedural justice is also occurring and whether authorities are confronting the past in ways that are helpful or inadvertently

“people routinely attempt to infer the motives behind the behavior of others”

distressing. Further, if the authorities act more fairly in everyday interactions but do not indicate to the public that they are trying to build trust, their efforts may have less effect.

Given that inferences about motives so strongly influence whether people react positively to reconciliatory gestures, a key question is, How do the circumstances and nature of a reconciliatory gesture shape perceptions of its sincerity? In 2018, Michael Wenzel and his colleagues found that delaying an apology usually reduced perceived sincerity, although perceived sincerity increased when the apology was given in a commemoration.³⁷ Other studies have examined the conditions under which apologies promote forgiveness. In a nutshell, the effectiveness of apologies depends on the victims' perceptions of the sincerity of the harmdoer.³⁸ Being the victim of historical subjugation or of specific acts of aggression may lead some groups to perceive public apologies or acknowledgements of injustice as insincere.³⁹

Not surprisingly, insincere gestures are often counterproductive. In the early procedural justice literature, scholars commented on the possibility that sham gestures might occur and undermine legitimacy. Craig Haney famously argued in 1991 that court authorities provided only symbolic and not real justice and that, if the public recognized this, it might at some point rebel against this pretense and distrust the motives of the authorities.⁴⁰ Similarly, if leaders seem to be making insincere gestures of reconciliation, they may also undermine rather than build trust.³⁸ The issue in both cases is the inferred motive for the authorities' behavior.

We view the overall process of restoring trust as one that unfolds over time, shaped in part by while also shaping beliefs about procedural justice and legitimacy.^{6,9,41} Reconciliatory efforts can help to change a community's view of the

trust

Psychological state in which a person is willing to be vulnerable because he or she expects the intentions or behavior of another to be positive

contact theory

Under certain circumstances, direct conversation or other forms of interaction can increase positive attitudes between groups

injustice gap

Discrepancy between what conciliatory messages acknowledge and the scope of the problem

legitimacy of the police or other authorities in ways that are distinct from the community's view of procedural justice—the fairness of the interactions they or their family, friends, and neighbors have had with the authorities on an individual level. This is not to say that legitimacy built entirely on reconciliatory gestures would be sustainable without continuing procedural justice but that this boost to legitimacy may give authorities the level of trust they need to convince the public to expect fair treatment and to thus facilitate positive interactions in the future. In this sense, reconciliation attempts can potentially jump-start the building of trust that follows reforms in procedural justice. When it comes to policing, a sustainable process of reconciliation requires substantive improvements in procedural justice in addition to acknowledgment of the historical and ongoing reasons for why groups would distrust policing as an institution.

Reconciliation Between Police & Communities: Field Data

Police–community relations make an ideal arena for exploring how to reestablish popular legitimacy (including trust), because law enforcement represents an arm of governmental power. In the last decade, police leaders across the United States have widely recognized that they have a trust gap with minority communities and have made attempts to bridge it. These activities, as we have mentioned, have included community-level initiatives intended to build trust, such as meetings to discuss local crimes; public statements by leaders acknowledging harm; and the acceptance of responsibility and even apologies for past injustices that the police have committed.

Most law enforcement is managed by local communities, so no systematic national database records all the community-level efforts taking place to increase trust in American police forces. To offer insight into the factors influencing responses to reconciliation efforts by police, we draw on some of our own research that speaks directly to this issue. In the spring of 2017, we, together with Tracey L. Meares, surveyed 2,501 New York City residents about the communities in their neighborhoods, city

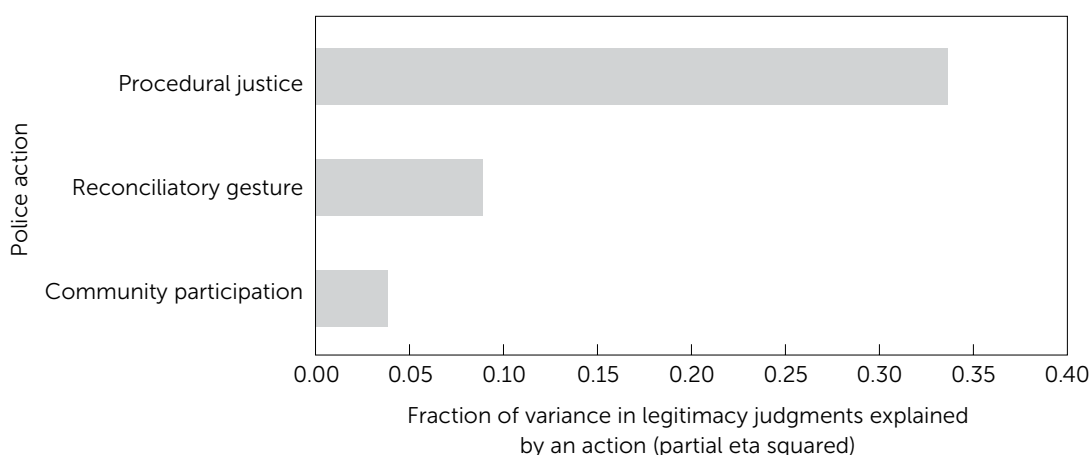
government, and their experiences with and behavior toward police in their neighborhood.⁴²

In one part of the survey, we asked if respondents had heard about the New York Police Department in their neighborhood “taking any initiatives to improve their relationship with the community and build trust.” We controlled for other factors that shape legitimacy and cooperation and found that those who knew of some initiative viewed the police as more legitimate and reported a stronger likelihood of cooperating with the New York Police Department by reporting crime.

The survey also included questions about the procedural justice of two aspects of policing: (a) how the police acted when dealing with people in the community and (b) whether people were given a chance to co-manage crime-control strategies through participation in community meetings. The results indicated that both types of procedural justice mattered to legitimacy. As in past research, individual experiences and community-level judgments about police procedural justice in the neighborhood were associated with popular legitimacy and willingness to cooperate.¹³ Also consistent with past procedural justice findings were survey responses showing that people had strong opinions about whether the police treated people fairly and respectfully and whether the police allowed community participation in decisionmaking.⁴³

Awareness of a reconciliatory gesture had an influence on trust distinct from the contribution of procedural justice. (See Figure 2.) Reconciliatory gestures had the greatest positive impact on trust when people agreed or agreed strongly that these gestures were sincerely intended to help the community, and most respondents who had heard of a gesture fell into one of those categories. Knowing of a gesture the police had made predicted stronger belief in the police's legitimacy; however, this relation held true only for participants who agreed that the gesture was truly intended to help the community. Hence, with both procedural justice and reconciliatory gestures, evaluations of sincerity appear to moderate their impact.

Figure 2. Relationship between police actions & residents' judgments of police legitimacy



Note. A survey of New York City residents assessed the degree to which three police actions influenced their opinion of police legitimacy (their opinion that the police act in ways consistent with residents' beliefs about right and wrong). The survey measured respondents' agreement with the view that their neighborhood police use procedural justice (behave fairly) and that the police value community participation (pay heed to community views when managing crime), and it asked whether respondents knew of reconciliatory gestures that the police had engaged in (initiatives undertaken to build trust with the community in the respondents' neighborhood). Views on procedural justice most strongly predicted belief in police legitimacy, but views on reconciliatory gestures and community participation also had an influence. Partial eta squared is commonly used to assess effect size, or the extent to which a particular variable predicts or causes another variable.

O'Brien, T. R., Tyler, T. R., & Meares, T. (2019). Building popular legitimacy with reconciliatory gestures and participation: A community-level model of authority. *Regulation & Governance*. Advance online publication. <https://doi.org/10.1111/rego.12264>

The results also add support for the notion that the gestures people perceive as insincere can backfire and undermine trust. Respondents who did not agree that a gesture they had heard about was sincerely intended to help the community expressed significantly less belief in the legitimacy of the police, not just compared with others who knew of a gesture and perceived it to be sincere but also compared with those who had not heard of a gesture. An additional analysis in which we used the same controls as we did in the main analysis suggested that knowing of a gesture had divergent effects on assessments of legitimacy: positive for those who agreed that the gesture was sincerely intended to help and negative for those who did not.

This correlational study suggests that making a gesture that recipients view as designed to be reconciliatory (to improve relationships) can be helpful and that this effect is distinct from the positive benefits of procedural justice. However, gestures not viewed as occurring in good faith can impair trust. In this study, we did not examine the content of the gestures made

and did not address whether and how reconciliatory gestures should speak to the past, but we conducted a separate experimental study in which we considered these issues, as we discuss next.

Experimental Evidence

The two of us have used vignette-based experiments to seek causal evidence of our survey findings.⁴⁴ We conducted three studies with African-American respondents who used the TurkPrime platform.⁴⁵ We presented hypothetical scenarios concerning community-level actions by a police chief and asked participants to consider how they would respond if those actions occurred in their own community.

The findings support the survey results. Studies 1 and 2 found that a conciliatory message (presented to respondents as being motivated by the desire to "build trust with the community") enhanced willingness to cooperate with the police relative to a control message on improving technology (Study 1) or a message indicating the desire to take joint actions to control crime (Study 2). Study 3 showed that

conveying the intent of building trust matters more than the specific topic of focus and that the intent can be communicated effectively without spelling it out explicitly. Regardless of whether the police were portrayed as trying to build trust or reduce crime, participants who read that the police wanted input (participation) from the community expressed more willingness to cooperate than did participants who received messages that did not mention community input. In addition, the findings of Studies 2 and 3 demonstrated that the impact of the conciliatory message on cooperation was mediated by participant inferences about the sincerity of the police gesture for helping the community.

Experiments have also explored which aspects of specific types of police gestures are most important. Consider research on public apologies. Some U.S. police chiefs have advanced apologies to minority communities in an effort to address past injustices. Although these apologies can be a start, they may omit key points that community members may want to hear. For instance, one chief apologized for the “actions of the past” but went far out of his way to assert that police officers of today were not responsible for those actions, and he even dismissed the notion that the police of the past were responsible, blaming the laws instead. In this situation, there is a clear *injustice gap*,⁹ a discrepancy between what the message acknowledges and the scope of the problem. What is the impact of apologies that include an acknowledgment of responsibility or, on the contrary, expressly dismiss responsibility?

We and Meares⁴⁶ have conducted an experiment in which we varied the content of apologies given by authorities to a sample of online respondents recruited from TurkPrime.⁴⁵ We asked participants how they would react if a described gesture occurred in their own community. We manipulated two dimensions of the message: whether a police chief acknowledged responsibility for past harm and whether the police chief apologized.

We found that apologies lacking acknowledgment of responsibility for past harm can reduce

cooperation among those who do not believe that the police are generally procedurally just; these are the very people whom the authorities most want to reach with reconciliatory gestures. For this group, apologies without some acceptance of responsibility actually reduced cooperation relative to messages that included no apology.⁴⁶ Different messages had no significant impact among those who already viewed the police as generally being fair. More studies are needed to tease out the features of reconciliatory gestures that will lead to the best outcomes.

Research into reconciliatory efforts by the police highlights a tension between the motivations of authorities and the needs of communities. To build trust through reconciliatory gestures, authorities should acknowledge their institution’s responsibility for past harm, yet other pressures may work against such acknowledgment. For instance, police officers themselves may be angered by this kind of action. Psychological research shows that people do not like their group to be criticized,⁴⁷ and officers who were not personally involved in past injustices may particularly dislike being cast as having some responsibility for them. Further, people are particularly sensitive to their groups being criticized in front of an outside audience.⁴⁸ Yet public self-criticism is the express purpose of any meaningful acknowledgment and apology.⁴⁹

In crafting reconciliatory gestures, institutional leaders will have to address the needs of the communities they have sworn to serve and also find a way for members of the institution to cooperate with the program.

Policy Implications

The procedural justice and reconciliation literatures both offer potentially relevant psychological bases for policymakers seeking to build trust. They provide theoretical frameworks and sets of empirical research findings. But do they offer empirically supported suggestions for making policy and, in particular, for devising policing policies? As this review shows, procedural justice has been demonstrated to have value for policing. Reconciliatory gestures also

seem to have considerable potential, but that potential has been less studied. Some national groups have called for reconciliatory gestures (for example, the National Network for Safe Communities at the John Jay College of Criminal Justice), but no one has made a concerted effort to apply empirical research findings about reconciliation to policing. Hence, policy recommendations concerning applications of reconciliatory gestures to policing must be more tentative.

Policy Implications for Procedural Justice

Procedural justice has already been widely used as a framework for efforts to build trust in the courts and in police departments. It is an incremental process that involves multiple efforts to build trust by exercising authority through fair procedures. A strong body of research supports its general propositions, and findings from recent studies more specifically suggest it can be applied to policing.⁵⁰ Specific types of policy changes that advance the agenda of trust building through procedural justice involve reimagining the mission of the police, expanding the metrics of success, reevaluating policy, retraining officers, and changing internal procedures.

Change the Mission Statement. Many police departments conceptualize themselves as a police force, framing their role in terms of a command-and-control presence in a community. If the police define themselves as a police service, their focus changes to whether they are, in fact, meeting the concerns and needs of their community. As officers transition from a militaristic model of their function to a service model, the nature of their interactions should change as well. This emphasis on the community should also lead to the adoption of metrics that measure community feelings and concerns and thereby provide information about the police's popular legitimacy.

Enlarge the Suite of Metrics for Assessing Success. Today, most departments define their success or failure by looking at the crime rate, in part because crime rate data are automatically collected and available for analysis. In contrast, few departments systematically collect data on

“few departments systematically collect data on their popular legitimacy ”

their popular legitimacy. This lack means that officers who make more arrests have evidence of achievement that can be pointed to for promotions and awards, whereas officers who prevent crime by cultivating a positive relationship with the community tend to go without official recognition or reward when their contributions cannot be so easily quantified. It is important to find ways to acknowledge and reward efforts to build popular support. This requires finding ways to quantify those efforts, such as through post-contact surveys in which the public evaluates officers' actions.

Reevaluate Policy. The policies and practices of legal institutions—the police, the courts, jails and prisons, parole systems—need to be evaluated and brought into conformity with the principles of procedural justice to increase perceived fairness. Many of the changes to these institutions will directly affect the dynamics of their interactions with the public.

In an early effort, the California courts audited their procedures with the aim of creating an environment that allowed disputants to feel that they were treated fairly.⁵¹ On the basis of their findings, they instituted a variety of innovations—for example, they enhanced help lines, established in-court aid centers, and provided translation services. A similar effort in police departments is described in *Principles of Procedurally Just Policing*.⁵² Departments took steps such as establishing rules for when officers are allowed to use force, instituting the use of wearable cameras (to provide an objective record of interactions), and training police in de-escalation tactics. Another similar effort, in the United Kingdom, is the West Midlands Police's Fairness in Policing project, which focuses on police–citizen interactions.⁵³

Retrain Officers. Both courts and police departments recognize that their staffs need to be

trained to incorporate the concepts of procedural justice into their work and to adopt new tactics for dealing with the community. A core objective is to change the staff's vision of their mission. Such training was recommended by Barack Obama's President's Task Force on 21st Century Policing, which advocated training police officers to think of themselves as a police service, not a police force.⁵⁴

Can training change police behavior? Several assessments tentatively suggest it can. In a study published in 2015, Wesley G. Skogan and his colleagues found that participation in a procedural justice training program in Chicago increased police officers' expressed support for using procedural justice strategies in the community.⁵⁵ Dennis P. Rosenbaum and a colleague reported in 2017 that such training shifted cadet behavior toward being more neutral and respectful during scenarios involving interactions with people in the community.⁵⁶ Emma Antrobus and her associates found similar positive effects of procedural justice training on officer attitudes and on-the-job behavior in a small sample of Australian police officers.⁵⁷ And Emily G. Owens and her colleagues found in 2016 that procedural justice training led a group of Seattle police officers to use force less frequently against people in the community.⁵⁸

Each of these studies supports the value of procedural justice training. However, they have important limits. Only two consider behavior in the community, and both use small samples. Further, the Owens study focuses on one-on-one training by a supervisor once an officer has been identified as exhibiting problematic behaviors.⁵⁸ None of these studies speak to the key policy question: Can a police department change the overall nature of officer behavior across a large number of officers using a training program that can realistically be implemented? At this time, the data are too sparse to provide an answer.

Change Internal Department Procedures. An obstacle to retraining is that officers may resist the teachings and be reluctant to shift their approach to policing. They may, however,

respond to departmental changes that revise internal procedural justice, not solely police treatment of members of the public. Research on police departments indicates that officers themselves feel that they work in environments that lack procedural justice. Studies suggest that if a department is converted into a fairer work organization, officers will change their behavior toward the community.^{59–66}

This kind of internal change can help police departments meet multiple goals simultaneously. The performance of officers improves, because they are more likely to adhere to department policies. Their well-being improves, thanks to a reduction in the notoriously high levels of stress associated with police work. And officers treat people in the community more fairly.⁶⁷ Further, the approach does not meet the resistance to change that is sometimes encountered with retraining. As officers experience fairness in their departments, they become less alienated and stressed and are more open to treating the public fairly without explicit orders to do so.

Policy Recommendations in Brief

- Redefine the mission of policing as providing a service.
- Adopt measures that quantify successes in building popular legitimacy.
- Evaluate policies in terms of their impact on popular legitimacy.
- Retrain officers to emphasize procedural fairness in their actions in the community.
- Structure police departments so that officers are treated in a procedurally just way.

Policy Implications for Reconciliation Efforts

Although the recommendations emerging from reconciliation research do not have the strong evidence base of the recommendations from procedural justice research, the following suggestions for the police seem reasonable. Critically, reconciliatory gestures alone are not enough. They acknowledge problems and

signal the intention to build trust, but to be fully successful, they must be paired with substantive improvements in procedural justice.

Make Explicit Reconciliatory Gestures. Because past and present racial and other inequalities make distrust likely, explicit gestures to improve police–community relations are critical. Research has shown that such gestures have added value: they can contribute to building trust beyond the benefits derived from procedural justice. In addition to working on improving people’s everyday experiences with the police, leaders should directly articulate to the community and beyond how they are working to establish just policing and should state frankly that they want to rebuild trust. However, they must also seek community input about all the reasons why these gestures may be perceived as insincere and then address those factors. This step is particularly important, because research into reconciliation in policing is still in its beginning stages. We recommend seeking community input especially but not exclusively from communities that are most likely to distrust police, to fully understand the barriers that must be addressed before gestures are made.

Be Thoughtful About the Types of Gestures Chosen. Research demonstrates that not all gestures are equally influential. Hence, a key question for further study is what traits they should have. As we have stressed, there is no simple formula. One thing is certain, though: To be effective, gestures must be perceived as sincere. Further, apologies without acknowledgements of responsibility are not effective.

Reconciliatory gestures themselves can address the past, but they are also about the present and future. So far, studies have not explored whether simply promising to change in the future is an adequate response to distrust. Researchers need to look further into whether leaders must address the past if they want to build trust and, if so, how to best do so.

Be Aware That Positive Effects Will Not Occur Automatically. Leaders who decide to take reconciliatory steps need to understand the

needs and grievances of community members so as to gear gestures and devise future policies appropriately. Piecemeal apologies or acknowledgments that sound defensive may not be effective and can even be counterproductive. Research shows, for instance, that failing to acknowledge responsibility can negate the potential benefits of apologizing.

Combine Procedural Justice With Reconciliation. Although the procedural justice and reconciliation literatures have been presented separately, reconciliatory gestures will not work in a vacuum. They need to be accompanied by ongoing changes in everyday police behavior. Police leaders eager to address distrust and frustrated by the challenges of changing their departments might be drawn to the seeming simplicity of making reconciliatory pronouncements. Those are unlikely to have positive impact in the absence of signs that policing practices are changing.

The connection between procedural justice and reconciliation is that people are likely to assess the sincerity of reconciliatory gestures through the perspective of procedural justice. If people experience or learn about procedurally just interactions between authorities and community members, they will see reconciliatory gestures (such as acknowledgments, apologies, or community–police meetings) as sincere attempts to help the community. If people experience or learn about procedurally unjust interactions between authorities and communities, they will see reconciliatory gestures as insincere. Unless authorities join reconciliatory gestures directed at the community with a commitment to procedural justice in individual interactions, communities will perceive such gestures as a sham.

It is important to avoid the trap of considering policies built around reconciliatory gestures as a substitute for changes in everyday practices. In particular, the success of both reconciliation and procedural justice depends on perceived sincerity, and these two approaches can either mutually reinforce or mutually undermine each other in shaping such perceptions.

Policy Recommendations in Brief

- Make community-level trust-building gestures.
- Recognize that not all gestures are effective. Evaluate the community's perception of the sincerity behind any such gestures.
- Combine community-level gestures with visible acts of procedural justice to provide evidence of sincere intentions.

Conclusion

This review has focused on distrust of the police. The discussion has centered on the police because distrust of them has recently drawn national attention. Yet the implications of this research are much broader. In many places, including the United States, people have lost faith in their political, legal, and social institutions; policies that can restore trust are crucial to humanity's collective future. The police-related research suggests that the procedural justice and reconciliation literatures provide useful frameworks for designing evidence-based policies and practices aimed at building trust in many realms where it is broken.

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How behavioral science can empower parents to improve children's educational outcomes

Peter Bergman

abstract

Parents powerfully influence their children's educational outcomes. Yet psychological and informational barriers impede parents' ability to engage with their children in ways that improve outcomes: parents tend to have inflated perceptions of their children's performance, which can deter them from taking helpful steps to effectively support their learning, and parenting is complex. Limited cognitive bandwidth for coping with complexities can steer parents' attention away from actions that have long-term benefits for their children and toward actions yielding immediate returns. Poor school-to-parent communication and poverty exacerbate all of these problems. In this article, the author demonstrates how providing timely, actionable information to parents can lower these barriers and help parents engage with their children more productively from kindergarten through high school. Moreover, providing this information can improve educational outcomes at low cost.

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Core Findings

What is the issue?

Parents often do not make the right long-term investments in their children's educational outcomes. Both psychological and informational barriers impede parental decision-making about these outcomes. Timely and actionable interventions are required to address cognitive biases, limited cognitive bandwidth, and low salience.

How can you act?

Selected recommendations include:

- 1) Automating the gathering and delivery of information about a child's educational outcomes to parents
- 2) Investing in efficacious opt-out rather than opt-in communication strategies about outcomes

Who should take the lead?

Researchers, policymakers, and stakeholders in education

Families powerfully influence children's learning.^{1,2} In 1966, the Coleman Report surveyed the state of educational opportunity in public schools across the United States³ and concluded that families are a more significant source of inequality than schools are.¹ Differences in home inputs, such as the number of words a child hears in an hour, can differ substantially across families: a child in a low-income family typically hears less than a third the number of words heard by a child in a professional-class family.⁴ These types of differences are meaningful. Researchers at the University of Pennsylvania showed that equalizing these types of home inputs can reduce the Black–White and Hispanic–White achievement gaps by more than 25%—a far greater reduction than would be achieved by equalizing inputs from schools.⁵

This evidence suggests that interventions aimed at parents could increase student achievement. Unfortunately, these interventions are often expensive and difficult to implement, despite being cost-effective in the long run (see note A). Until recently, there was a dearth of rigorous research into low-cost strategies to engage parents.^{6,7} In the last six years, however, randomized controlled trials have shown that inexpensive behavioral interventions can empower parents to improve children's educational outcomes; in such trials, investigators randomly assign participants to receive an intervention (treatment) or to be part of a control group not receiving the intervention. In this review, I summarize the relevant research and discuss the policy implications of the findings as well as the potential to scale useful interventions. Because this research is recent, many of the findings appear in working papers and await peer review.

Barriers to Parental Engagement in Children's Education

Parents face a number of barriers to engaging in activities that enhance their children's education. I loosely categorize these barriers as being either psychological (such as having biased beliefs and limited bandwidth for attending to

complexities and educational issues) or informational (such as experiencing difficulty obtaining clear information about a child's academic progress). Many of these factors interact with one another and with other detrimental features in families' environments, as the studies that follow, which are not exhaustive, indicate.

Biased Beliefs

Research into parents' views of how well their children are doing in school shows that, on average, parents are overly optimistic about several aspects of their kids' educational performance. Specifically, they overestimate assignment completion,^{8,9} attendance,^{9–11} and grades.^{9,12} In 2018, for instance, Rebecca Dizon-Ross found that parents in Malawi overestimated their children's test scores and that lower income families estimated less accurately than did higher income families.¹³ And I have found that the worse children perform, the less accurate their parents' beliefs tend to be.⁸ Inflated beliefs could have consequences if they cause a family to make educational investments that are poorly aligned with their child's skill level. Such investments

In Brief:

Psychological and informational barriers impede parents' ability to engage with their children in ways that improve educational outcomes.

Parents overestimate their children's academic performance along multiple dimensions.

Parenting is complex, and limited cognitive bandwidth steers parents' attention away from steps that would have long-term benefits for education and toward steps having immediate returns.

Poor school-to-parent communication makes it difficult to monitor children and make accurate assessments of their performance.

Poverty exacerbates these problems for families.

The provision of simple, timely, actionable information to parents can attenuate these barriers and promote effective parental engagement from kindergarten through high school.

Providing this information via text message can improve student learning at low cost.

“the worse children perform, the less accurate their parents’ beliefs tend to be”

can be money spent on remedial or enrichment programs or put aside for later school expenses but can also be nonmonetary investments, such as time spent assisting with homework.

Not only do parents misperceive absolute performance, but they also tend to overestimate performance relative to a child’s peers—such as by misjudging differences in attendance and test scores.^{11,14} These mistakes matter, because families alter investments in their children on the basis of how the students perform relative to others in their peer group.¹⁴ Improper relative assessments could lead to too little parent and teacher engagement and thus to disappointing outcomes. Evidence indicates that a child’s class rank affects long-term academic performance.^{15,16} Given that families tend to overestimate their child’s relative performance, more accurate information could enhance parental engagement and improve educational outcomes.

Parents may formulate inaccurate beliefs because monitoring children requires time and attention and because school report cards are often complex, among other reasons. A study I conducted in the 2010–2011 school year at a combined middle school and high school in Los Angeles indicated that 11% of families did not understand the A-to-F grading system.⁸ This difficulty may seem surprising, but many families emigrate from countries that rely on different grading schemes. Children who are underperforming may exacerbate misperceptions because they have an incentive to avoid telling their parents about their poor grades. In 2015, I incorporated biased beliefs and monitoring difficulties into a model of parent–child interactions and found that each can independently impede parental engagement and reduce student effort.⁸

Parents may also misunderstand how their child learns. For example, they may underestimate the benefits of investing in their child’s education

early in childhood, as well as the importance of reinforcing these early investments further as the child gets older.^{17,18} Flávio Cunha and his collaborators surveyed mothers to elicit their beliefs about the benefits of early childhood investments.¹⁹ Compared with the authors’ calculations, these mothers understated the returns, on average. In terms of a child’s effort and resulting learning in school, parents tend to overstate their child’s willingness to compete,²⁰ particularly for their sons. This misperception is potentially worrisome, because willingness to compete can predict educational and occupational decisions.

Other misperceptions extend to higher education. In 2018, Zachary Bleemer and Basit Zafar reported that parents inaccurately estimate the costs of and economic returns to attending college.²¹ In a nationally representative survey, they found that 60% of families overestimated net college costs. Further, almost 75% of families underestimated the average returns to a college degree. These misestimations were larger for less educated and lower income households. Complexity again may be an issue, given that determining the net cost of college after financial aid is difficult.²²

Limited Cognitive Bandwidth & Attention & Low Salience

Parenting involves the frequent need to make complex decisions.²³ Often, the correct decision is not obvious; each choice may have uncertain implications. These challenges may be more significant for low-income families, who contend with higher cognitive loads.^{24,25} Low-income families face burdens such as more unpredictable work schedules, varying incomes, and language barriers.^{26,27} These uncertainties and budget constraints, although outside the domain of education, can impose a psychological tax on families that has broad ramifications for attention, impulse control, and the smooth function of working memory, which facilitate reasoned decisionmaking.^{25,28}

This psychological tax could impede parental engagement in their children's education in several ways. First, families' attention may be drawn away from education-related decisions and toward financial decisions. In other words, the educational decisions become less salient. Second, the complexity and number of educational choices may cause parents to disengage with these decisions.^{23,29,30} For instance, in many school districts, parents can view their child's missed assignments, attendance, and grades online via a district website. This requires logging in with a username and password. However, parents may forget to log in or misplace their log-in information. I have found that less than one third of parents across several hundred schools in multiple districts have ever logged in to view their child's grades online.³¹ Log-in rates are lower in schools that have more low-income families, as measured by the percentage of recipients of free and reduced-price lunches. (I find that periodically providing families with their log-in information increases usage.)

Guilherme Lichand and his collaborators have provided the most direct evidence that limited cognitive bandwidth and low salience can impede parental engagement.³² The authors conducted a survey of parents in Brazil and primed a random sample to think about financial concerns (primed parents are more likely to have financial concerns top of mind). Subsequently, primed parents were less likely to pay for an evidence-based education intervention. The authors also found that families divert cognitive resources away from education decisions with returns experienced only after a delay, such as participation in beneficial education programs, and toward decisions having more immediate impacts, such as those involving immediate financial needs.

Tendency to Discount the Value of Future Benefits

Education provides benefits in the long run but requires continual investment.³³ There is evidence that a temporary negative shock to people's finances increases how much they discount or devalue their assessment of benefits that might come in the future.³⁴ This discounting may cause low-income families to underinvest

in their child's education, despite the value of education for later earnings. Compounding this issue, many parenting practices, such as reading and discipline, often require continuous attention, but the benefits of these practices on performance and self-management take a long time to manifest. Parents may tend to delay activities that do not pay off quickly in favor of activities offering immediate rewards.

Costs of Monitoring Student Progress

An additional cognitive challenge of parenting is the difficulty of monitoring children's progress. Schools contribute to this difficulty. They may provide information that is not in parents' native language, issue confusing report cards, and send information to families infrequently. In a study conducted in the largest school district in West Virginia, for instance, Eric W. Chan and I found that 45% of parents were contacted less than once every three months about their child's schoolwork or grades (whether by report cards, phone calls, or e-mails).⁹

Studies from outside the United States raise similar concerns. In Brazil, school landlines are blocked from calling cell phone numbers.³⁵ This impedes school-to-parent communication, because few families in Brazil—as is true in many low-income countries—have landlines. Cell phone penetration, however, is above 90%. In Malawi, 64% of parents do not know their child's current academic standing; among the most commonly cited reasons for this lack of knowledge are not receiving a report card and not being able to understand the report card when it comes.¹³

Low-Cost Interventions That Leverage Behavioral Insights

The evidence above suggests that the provision of timely, actionable information to families about their children's academic progress could address many of these behavioral and informational barriers. *Timely* implies that the information is top of mind right at the point a decision must be made. *Actionable* means that the information is simple and clear and that it suggests a response that can directly improve educational outcomes. The timing of

information delivery and the recommended actions must be specific to the age of the child.

Next, I describe interventions targeted according to children's age ranges. Many of these interventions address multiple behavioral biases or structural barriers simultaneously. All the studies cited are randomized controlled trials, and all the findings reported below refer to differences between the treatment groups and controls.

Preschool Through Primary School

Fostering learning in preschoolers and kindergarteners can be a complicated task with steps that are difficult to discern. What might successful parental involvement look like at these ages?

Benjamin York and his coauthors designed a literacy intervention that delivered timely, actionable advice to families.²³ Their intervention consisted of short, simple text messages sent to parents three times a week over eight months. The first message of the week was a child-development fact that highlighted the importance of a particular literacy skill. The second message of the week described a simple activity parents could do to improve this skill. The third message informed parents about how to build on this activity. The brevity of the messages reduced the cognitive burden on families while making actionable content salient.

To test the intervention, the authors recruited roughly 1,000 families with preschool-aged children and surveyed teachers to discern how the parents of each child responded to the messages. Treatment-group parents asked teachers more frequently about what their child was doing in school, requested tips for teaching their child to read, and asked whether their child got along with others. These impacts coincided with increased literacy scores equivalent to three months of learning (0.10–0.15 standard deviations).

Susan E. Mayer and her coauthors also studied how behavioral interventions targeted to parents could improve preschool-aged children's literacy.³⁶ They gave tablets loaded with 500 books to 169 parents. Parents were then

“parents in the treatment group read to their child more than twice as much as did parents in the control group”

randomly assigned to a control group or a three-component intervention. In the intervention's first component, parents made a “soft” commitment, informing a research assistant of how much time they intended to spend reading to their child the following week. (Research shows that making a public commitment increases the likelihood the commitment will be honored.) At the end of each week, parents received an assessment of how much they actually read to their child compared with their goal, based on data collected by the tablet. The second component consisted of sending parents a text message each weekday reminding them about their reading goal and the importance of reading. The third component was a social reward: parents received a congratulatory message for achieving their reading goal or for doing the most reading, compared with the other families within their preschool center. Over the course of six weeks, parents in the treatment group read to their child more than twice as much as did parents in the control group (for 152 minutes versus 63 minutes).

In a study similar to one I conducted in 2014 with middle school and high school students (described below),⁸ Stanley Siebert and several of his colleagues tested an intervention intended to make it easier for parents in China to monitor grade school students.³⁷ In a trial involving 10 schools and approximately 4,000 students, the authors provided students and their parents with weekly information, primarily about the students' behaviors in school. Teachers met with students every two weeks to review a progress report card that was sent to parents using WeChat, a popular messaging platform in China. Providing this information to both parents and students proved particularly effective at enhancing the academic achievement of lower performing students (who showed an

average of 0.25 standard deviations of improvement in math and language), but looping in parents added no benefit over direct feedback for higher performing students.

Felipe Barrera-Orsorio and his collaborators and, independently, Rebecca Dizon-Ross also conducted studies focused on enhancing scholastic performance information delivery while looking specifically at effects on parental bias.^{13,38} They randomized the provision of test score information to parents in Colombia and Malawi, respectively. In both settings, parents' beliefs became more accurate as a result of receiving the scores. In Colombia, student performance gradually improved (particularly for children who started with low grades), although these effects faded five months after the intervention. In Malawi, Dizon-Ross offered leveled workbooks to parents and found that those who received their children's scores were more likely to accurately match workbook levels to their child's reading ability. But another result was mixed: children whose parents initially underestimated their performance were more likely to persist in school, but those whose parents overestimated performance were less likely to persist. The reduced persistence might have resulted from parents deciding that investing in schooling was no longer worthwhile for children who were not doing as well as the parents had thought.

In the United States, Todd Rogers and Avi Feller also tested an intervention targeting parents' inaccurate beliefs, this time about their child's school attendance.¹¹ They sent one of three types of mailers to the parents of students in kindergarten through 12th grade: one displayed the child's total number of absences, another displayed this information along with a comparison to the number of absences for the average child, and the third informed families about the importance of attendance and offered encouragement. The authors randomized these mailers to 30,000 households. The first two mailers reduced absences by one day, and the third mailer reduced absences by half a day. No mailer affected students' test scores, however, raising the question of whether

large improvements in attendance or complementary interventions are needed to improve learning.

Middle School Through High School

As children get older, parents may be less likely to directly help with assignments and more likely to shift to monitoring and incentivizing their child's effort in school. Low grades, missed assignments, and absences become more pertinent to academic performance, but various interventions with parents can help mitigate these problems.

The study I conducted in Los Angeles at a public combined middle and high school, mentioned earlier, provided information on grades and missed assignments to parents in the treatment group via text messages sent every two weeks.⁸ Missed assignments were defined as incomplete assigned tasks, which included in-class work, projects, essays, exams, and homework. This measure was easy for parents to interpret: their child had been assigned a task, and the child had not completed it. On average, students were missing 20% of all their assignments.

The messages affected parental behaviors in several ways. First, parents in the treatment group were significantly more likely to take away privileges from their child. As a result of the intervention, parents in the treatment group also formed more accurate beliefs about the number of assignments their child had turned in. This combination of changed beliefs and increased incentives resulted in greater student effort: assignment completion increased by 25%, grade point average went up by roughly 0.20 standard deviations, and math scores improved.⁸

Since this study was reported, variations of this intervention have been conducted in different contexts across the United States and around the world. In the United States, Matthew A. Kraft and Todd Rogers sent parents messages written by teachers during a summer credit recovery program.³⁹ Parents were randomly assigned to one of two treatment conditions: one group received weekly messages that highlighted behaviors their child could improve, and the

<1/3

Words a child in a low-income family hears relative to one from a professional-class family



The standard deviation in achievement gaps across races and incomes in the US is 0.75-1.25.

60%

Discrepancy between what conciliatory messages acknowledge and the scope of the problem

other group received weekly messages about good behaviors their child was demonstrating and should continue doing. Averaging across both treatments, the intervention increased credit completion by 6.5 percentage points relative to the control group. The data suggested that the improvement-oriented messages were more effective, probably because they provided more actionable information.

In Chile, Samuel Berlinski and his collaborators sent text messages to parents about their children's attendance, grades, and behavior.¹² The sample included nearly 1,500 children in Grades 4–8 across eight schools. After four months, students in the treatment group improved their math grades by 0.09 standard deviations, the share of children with attendance rates of 85% or greater increased by 6.6 percentage points, and poor behavior fell by 20%. Parents in the treatment group more accurately reported their child's performance as well.

In the United Kingdom, a study called the Parent Engagement Project tested the effects of sending text messages to parents about the dates of upcoming tests and whether assignments had been completed.⁴⁰ The study encompassed 36 secondary schools serving 15,697 students. The intervention increased math scores by 0.07 standard deviations (representing roughly one month of learning) and decreased absenteeism by one half day.

In Brazil, Nina Cunha and others conducted a trial with 19,300 ninth-grade students.³⁵ The intervention had multiple treatment arms, including one that informed families via text message about their child's missed assignments and attendance in math class and another that reminded families that it is important for their child to attend class and complete assignments. The impacts were large and similar in size across arms: attendance increased by five days over the year, math grades and math test scores increased by 0.09 standard deviations, and the number of children who were promoted to the next grade at the end of the year increased by 3 percentage points. Although the messages related only to math, achievement did not

decrease (and sometimes increased) in other subjects. The effects coincided with parents talking to their children more often about school, providing their children with greater incentives, and showing increased college aspirations for their children.

At first glance, it might seem surprising that both treatment arms yielded similar outcomes despite one of the arms providing no student-specific information. The authors argued that, in Brazil, just making education top of mind may be enough to prod parents to engage in behaviors that support their children's schooling. In Brazil, it costs money to contact families via their cell phones, which contributes to poor baseline school-to-parent communication. From a policy standpoint, the finding that a generic reminder can be effective is important, because generating such messages is less costly than having to gather information from teachers and push out tailored messages for each family.

In Mozambique, Damien de Walque and Christine Valente studied how to improve school attendance of girls aged 11–15 years.⁴¹ In one arm, parents were provided a cash transfer conditional on their child's attendance. In a second arm, parents were sent information about their child's attendance without incentives. The information-only arm increased attendance by 7%, which was 75% as large as the effect of the cash incentive. Moreover, the information arm increased test scores, whereas incentives to parents did not.

Francisco Gallego and his collaborators assessed whether sending text messages to parents about their child's Internet usage (measured in megabytes) would alter that usage.⁴² They randomly assigned 7,707 parents of middle school students in Chile to one of several groups, including one in which parents received usage information weekly and one in which parents received messages reminding them that it is important their child use his or her computer productively but with no information on usage. Although the authors could not study the effects of these messages on academic outcomes, the usage

treatment reduced Internet usage by 6%–10% relative to baseline.

College Transition & Beyond

Much less research evaluates interventions targeted at parents during their child's transition to college and later. This lack is perhaps natural (students have significant agency once they reach college age), but it is also practical: After children turn 18 years old in the United States, they control access to their student records. Information from these records can be provided to parents only with students' permission.

As a result, research has focused on the college matriculation process instead of on academic progress. In 2012, Eric Bettinger and his collaborators showed how severely the complexity of the college financial aid application process can impede enrollment.⁴³ They randomized parents into two groups: One group received personal assistance filling out the Free Application for Federal Student Aid (FAFSA), and a second group received information about financial aid and a tuition-cost estimate but no assistance filling out the FAFSA. Compared with the second group, the assistance group was 16 percentage points more likely to complete the FAFSA and 8 percentage points more likely to enroll in college for at least two years.

Ben Castleman and Lindsay C. Page tested a low-cost intervention aimed at reducing the complexity and increasing the salience of key college-enrollment steps.⁴⁴ They sent text messages about the actions high school seniors must complete to matriculate; these messages included reminders and information about orientation, housing forms, and FAFSA completion. The authors conducted a multiarm trial to evaluate their intervention. One arm provided prompts only to students, and another arm provided prompts to both students and their parents. They found that including parents added no additional efficacy to the students-only messaging, which increased on-time enrollment by 3 percentage points. The value of involving parents and using low-cost interventions while students enroll in and continue attending college is an open area for further research.

Discussion

Table 1 summarizes a number of the studies described above as well as related ones, noting details about the interventions, barriers addressed, sample, primary outcomes, and findings. The evidence is notable for its rigor—every study is a randomized controlled trial. These are not replications: The exact design of each intervention varies within and across student age groups. Even while restricting attention to randomized controlled trials, I found that engaging parents with timely, actionable information consistently improved student effort and achievement and did so in disparate regions, such as Brazil, Chile, China, England, Malawi, Mozambique, and the United States.

The evidence also supports a few of the mechanisms that have been hypothesized to explain why different interventions help to change parental behavior related to education. The findings sometimes conflict, however, so further research is needed to distinguish the importance of one mechanism over another.

The model of parent–child interactions that I developed in 2015, mentioned earlier, was meant to distinguish between two of these mechanisms: The effects of reducing monitoring costs and the effects of altering beliefs. In the United States, I found that about 40% of the effect stemmed from lowering monitoring costs and 50% came from belief changes. Yet, the multiarm trial conducted by Nina Cunha's team in Brazil suggests that tailored information and lowered monitoring costs are not necessarily key drivers of impacts in that country: their reminder treatment, which increased the salience of the importance of schoolwork, had effects as large as those of individualized information.³⁵ Meanwhile, in research not described above, Christopher Doss and his collaborators found that personalized messages have a substantially greater impact than generic text messages do.⁴⁵ Understanding whether personalization matters is important for policy because gathering individualized data can be costly. If generic messages can improve outcomes, they have the benefit of being easier to implement and cheaper to scale.

Table 1. Interventions, primary barriers they addressed, & their effects

Study	Intervention	Primary barriers addressed	Sample	Primary outcome	Findings
Preschool through primary school					
Barrera-Osorio et al. (2018) ^A	Information to parents on school and student performance; suggestions for parents on how to support their children; information for both provided via home visits	Biased beliefs about performance in school; understanding of productive parent engagement strategies	Primary school children in Manizales, Colombia	Composite reading and math test score	Composite score dropped by 0.02 standard deviations three years after the intervention.
Dizon-Ross (in press) ^B	In-person explanation to parents about their child's absolute and relative test score performance	Biased beliefs about performance in school	Parents of primary-school children in Machinga and Balaka, Malawi	Primary school enrollment persistence	Dropout rate for above-median performing students fell by 2 percentage points; for below-median performing students, the rate increased by 2 percentage points.
Mayer et al. (2018) ^C	To encourage parents to read more to their children over six weeks, parents were (a) provided a "soft commitment device," (b) texted two reminders about their weekly reading goals, and (c) sent a congratulatory message for reading more than their peers.	Procrastination/ present bias; limited attention; inaccurate beliefs about benefits to reading	Parents enrolled in a subsidized preschool program in Chicago, Illinois. Parents were provided tablets with preloaded books.	Recorded time parents spent reading to their child.	Reading time increased by 79 minutes over six weeks.
Rogers and Feller (2018) ^D	Up to five mailers sent to households graphically showing their child's total absences.	Biased beliefs about absolute and relative school attendance	Kindergarten through Grade 12 children in a Philadelphia, Pennsylvania, school district	Full-day absences	Full-day absences were reduced by one day.
Siebert et al. (2018) ^E	Weekly feedback provided to students and parents about their academic performance and behavior.	Monitoring costs; poor school-parent communication	Students in primary schools and their parents in Shaoyang County of rural China	Math and reading test scores	Math and reading scores increased by 0.25 standard deviations, but parent-provided feedback was beneficial only for low-performing students.
York et al. (2018) ^F	Literacy curriculum for parents delivered via text messages over eight months.	Complexity; cognitive load; limited attention	Parents of preschool children in San Francisco, California	District-administered reading test scores	Scores increased by 0.10–0.15 standard deviations. The effects were particularly strong for letter recognition and sound awareness.
Middle school through high school					
Avvisati et al., 2014 ^G	School meetings instructing parents how to help their child with their schoolwork	Complexity; low valuation of schooling	Middle school students in low-income areas of Paris	Test scores, behavior, attendance	25% reduction in truancy; 21% reduction in disciplinary sanctions; 0.02 drop and 0.04 rise in standard deviations on French and math test scores, respectively.
Bergman (2015) ^H	Biweekly text messages sent every two weeks to parents in English and Spanish describing their child's missed assignments and grades	Biased beliefs about assignment completion; monitoring costs	Middle and high school students in Los Angeles, California	GPA, missed assignments, test scores	GPA increased by 0.20 standard deviations; assignment completion increased by 25%; evidence of math score improvements of 0.20 standard deviations; no increase in English scores.
Bergman et al. (2018) ^I	Weekly text messages to parents about their child's absences, grades, and missed assignments	Biased beliefs about assignment completion; monitoring costs	Three lowest performing middle and high schools in an urban, Midwestern school district	GPA, student retention in the district, math and English test scores	GPA increased by 0.13 standard deviations; district retention increased by 3 percentage points; no improvements in math or English scores.

(continued)

Table 1. Interventions, primary barriers they addressed, & their effects (*continued*)

Study	Intervention	Primary barriers addressed	Sample	Primary outcome	Findings
Berlinski et al. (2017) ^j	Text messages sent to parents of children about their attendance, grades, and behavior in math class	Biased beliefs about test score performance; monitoring costs	Parents of children in Grades 4–8 in two low-income municipalities of Santiago, Chile	Math grades, behavior, attendance	Math grades improved by 0.09 standard deviations; share of students with >85% attendance increased by 7 percentage points; poor behavior decreased by 20%.
Cunha et al. (2017) ^k	Text message to parents about their child's missed assignments and attendance in math class; reminders about the importance of assignment completion and attendance	Limited attention, biased beliefs, monitoring costs	Grade 9 students in Sao Paulo, Brazil	Math grades and test scores, grade promotion	Math grades and test scores increased by 0.09 standard deviations; grade promotion increased by 3 percentage points.
de Walque and Valente (2018) ^l	Information intervention arm was a weekly report card showing students' attendance as marked by teachers. The system was explained to parents by a nongovernmental organization. Report cards were sent home with the children.	Monitoring costs	Parents of female students in Grades 6 and 7 in Manica Province, Mozambique	Attendance and test scores	7% increase in attendance; math scores increased by 9%.
Gallego et al. (2017) ^m	Text messages to parents about their child's Internet usage	Monitoring costs	Low-income Grade 7 students' parents across Chile	Internet download (measured in megabytes).	6%–10% reduction in Internet usage (megabytes downloaded)
Kraft and Rogers (2015) ⁿ	Four messages to parents written by teachers about their child's performance. Messages were framed as either positive messages or "needs improvement" messages and sent in parents' native language via e-mail, text, or phone call.	Monitoring costs	Large, urban district's summer credit recovery program (city unspecified)	Course credit	6.5 percentage point increase in the likelihood a student received credit at the end of the program
Miller et al. (2017) ^o	Text messages to parents about the dates of upcoming tests, assignment completion, and what their child was doing in school	Monitoring costs	Geographically dispersed secondary schools in England	English, math, and science test scores; absences	Math scores increased by 0.07 standard deviations and absenteeism decreased by a half day. No effects on English or science scores.
College transition and beyond					
Bettinger et al. (2012) ^p	Two intervention arms: (a) personalized help by a tax assistant at H&R Block, who helped families fill out their Free Application for Federal Student Aid (FAFSA) using their tax information; and (b) information about how to fill out the FAFSA and a tuition-cost estimate	Complexity, salience	Tax preparation offices across Ohio and Charlotte, North Carolina; low-income households with one member between 17 and 30 years of age without an undergraduate degree	College enrollment and persistence	No effect on FAFSA completion or college enrollment for the information-only group; the assistance group was 16 percentage points more likely to complete the FAFSA and 8 percentage points more likely to enroll in college for at least two years.
Castleman & Page (2018) ^q	Text messages sent to parents and their children about the steps high school seniors must take to matriculate to college.	Complexity, limited attention	Parents of high school graduates enrolled in uAspire sites in Boston, Lawrence, and Springfield, Massachusetts (uAspire is a nonprofit focused on college financial aid advising)	College enrollment	On-time college enrollment increased by 3 percentage points.

Table 1 notes

Note. All studies in this table were randomized controlled trials, and all results refer to differences between treatment groups and controls. GPA = grade point average.

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Research by Gallego and his coauthors has provided further support for the importance of salience and reminders.⁴² Children's Internet usage drops most the day immediately after parents receive a text message informing them about the extent of their child's Internet usage. The authors also randomized the timing of the messages each week for one group of parents. This random timing led to a sizeable additional reduction in Internet usage, which is consistent with the importance of salience.

Several other papers not mentioned above show how the framing and frequency of messaging can affect a program's success. In an early literacy program, Frans Fricke and coauthors demonstrated that more is not always better:

high-frequency messaging (five versus three messages per week) more than doubled the dropout rate from their intervention program.⁴⁶ Similarly, Nina Cunha's group found that increasing messaging frequency beyond twice a week did not improve their intervention's effectiveness.³⁵ Complex message wording also increases the dropout rate.⁴⁷ Simplicity and message frequency matter for efficacy.

The effect sizes of all the interventions described above imply they are no panacea. Achievement gaps across races and incomes in the United States are on the order of 0.75–1.25 standard deviations.⁴⁸ The effects of using behavioral interventions are not nearly enough to close these gaps by themselves. Nevertheless, they

“Simplicity and message frequency matter for efficacy”

offer an opportunity for educational policy-makers to enhance student performance in a way that is low cost and easy to implement.

Scalability & New Challenges

This low cost and ease of use offers the promise of scale. In a study that Eric Chan and I conducted in 2018,⁹ we used Twilio, a tool known as an *application programming interface*, to automate the gathering and delivery of information to parents. As part of a study involving 22 middle and high schools in West Virginia, the application gathered data about student attendance and performance and automatically sent out text message alerts to parents. It delivered weekly alerts about missed assignments and class absences and monthly alerts about low grades. The intervention reduced course failures by nearly 30% and increased class attendance by 12% relative to the control group. Twilio sent more than 32,000 text messages over the course of the school year, which cost \$64. Teachers were not required to fill in any additional information because the intervention drew from existing data in the learning management system (such as from teachers’ digital grade books).

However, efficacy in a controlled trial—even across many schools and students—does not imply sustained efficacy at scale. Typically, school districts ask parents to opt in to the type of automated-alert intervention described above, which is likely to yield fewer signups than would an opt-out program, which includes parents unless they explicitly choose to be excluded. In 2017, I, Jessica Lasky-Fink, and Todd Rogers showed that the opt-in approach leads policymakers to understate the efficacy of text messaging, which in turn lowers their willingness to pay for it.⁴⁹ We randomized nearly 7,000 parents to one of three treatment groups:

a standard opt-in group, in which parents enrolled in the automated-alert intervention by signing up via a district website; a simplified opt-in group in which parents could enroll by responding “start” to a text message prompt; and an automatic-enrollment, or opt-out, group, in which parents were enrolled in the intervention but could stop the messages at any time by replying “stop.”

The results were stark: The take-up rate in the standard opt-in group was less than 1%. Take-up in the simplified opt-in group was only 11%. In contrast, only 5% of families in the automatic-enrollment group ever opted out. Unsurprisingly, treatment effects appeared only in this last group.

Why would policymakers ever implement an opt-in program? We surveyed more than 100 district leaders serving more than 3 million students and asked them to guess parents’ take-up rates under each of the experimental conditions. They found that leaders overestimated take-up in the opt-in groups by roughly 30 percentage points and underestimated it in the automatic-enrollment group by approximately 30 percentage points. When presented with the take-up rates under each condition, leaders’ willingness to pay for the intervention increased by more than 150% if enrollment shifted from opt in to opt out.

Will these messaging interventions remain effective as time goes on? Arguably, families receive more information from various sources today than ever before. Although text messages work now, they may not continue to be as effective if more organizations start using them, overwhelming families with information, or if people begin to favor other modes of communication. Ideally, researchers will clarify which features of messages are most likely to elicit parental action and why text messages command more attention than other modes of communication do. Such insights will help policymakers and schools figure out how to hold parents’ attention even as communication technologies continue to change over time.

endnote

- A. Programs such as the Nurse–Family Partnership, which provides low-income first-time mothers with home visits from registered nurses, have demonstrated lasting health effects but are often costly: The Nurse–Family Partnership, for example, costs approximately \$7,600 per child. The program is intensive, and similar but easier-to-implement programs have not been shown to have the same positive effects.⁵⁰ A second frequently cited example is the Perry Preschool Program, which has a component that aims to involve mothers in their child’s development. The Perry Preschool Program improves long-run socioemotional outcomes and earnings but costs \$17,759 per child.⁵¹

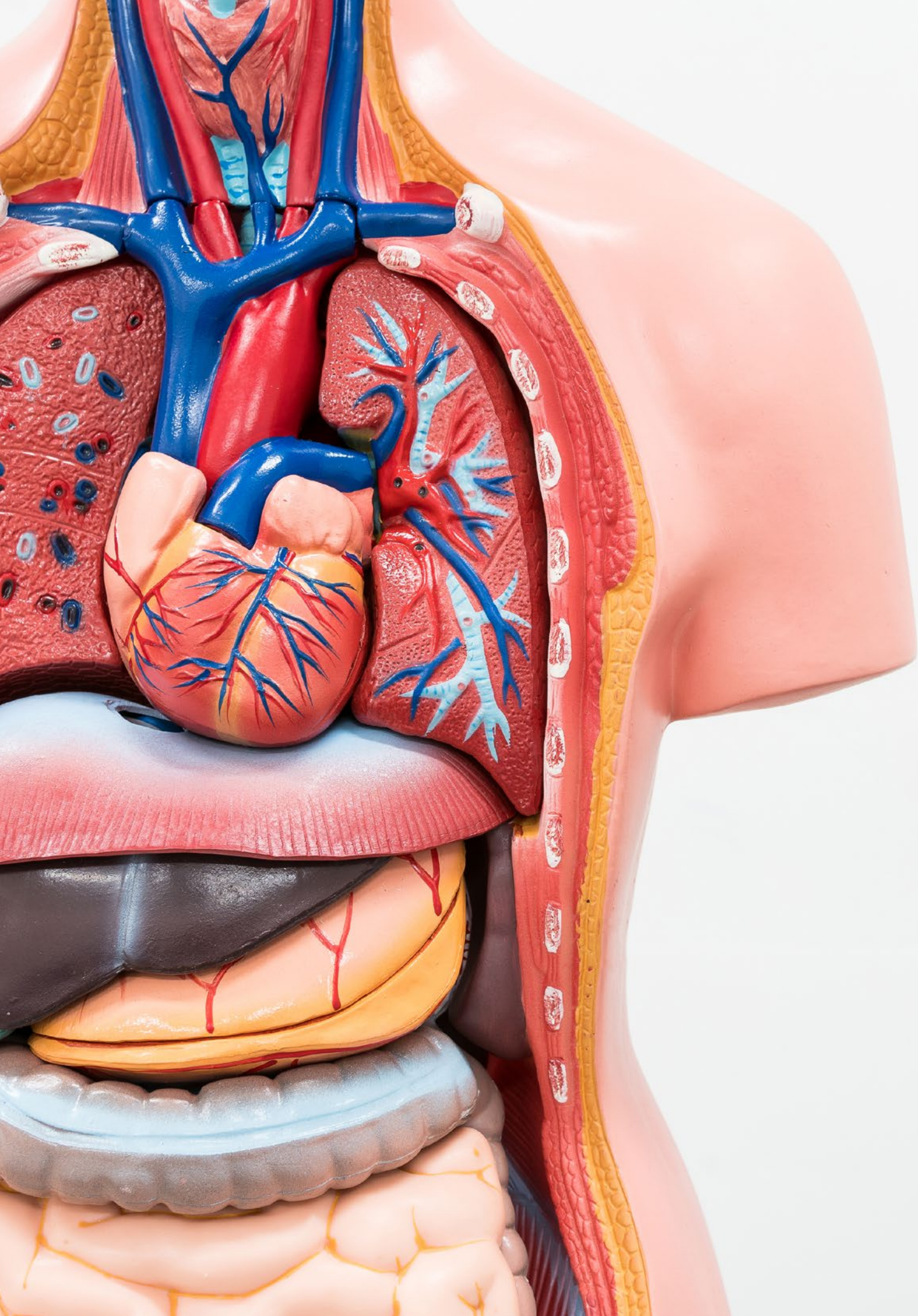
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Does changing defaults save lives? Effects of presumed consent organ donation policies

Mary Steffel, Elanor F. Williams, & David Tannenbaum

abstract

In this review, we examine whether presumed consent organ donation policies save lives. We compare presumed consent defaults (where people are considered organ donors by default but can opt out of donation) with explicit consent defaults (where people are considered nondonors by default but can opt in to be considered donors). Experimental, cross-sectional, and longitudinal evidence indicates that rates of consent, donation, and transplantation are higher under presumed consent policies than under explicit consent policies. The evidence also suggests, however, that presumed consent is one factor among many that determine the number of organs donated and lives saved; policymakers must balance a number of other considerations to ensure that shifting to a presumed consent system will boost donation and transplantation rates. We underscore the importance of investing in health care infrastructure to support organ procurement and transplantation and offer empirically informed recommendations to enable consent policies to save the most lives.

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Core Findings

What is the issue?

A systematic review of available evidence suggests that setting defaults to presume consent for organ donation offers a promising way to increase consent, donation, and transplantation rates. But the evidence also suggests that presumed consent defaults must be complemented by other features that facilitate donation, including support for families of potential donors and optimized health care infrastructure.

How can you act?

To make presumed consent policies more effective:

- 1) Simplify the consent process for potential donors
- 2) Support and facilitate consent from surviving family members
- 3) Improve infrastructure for donation and transplantation

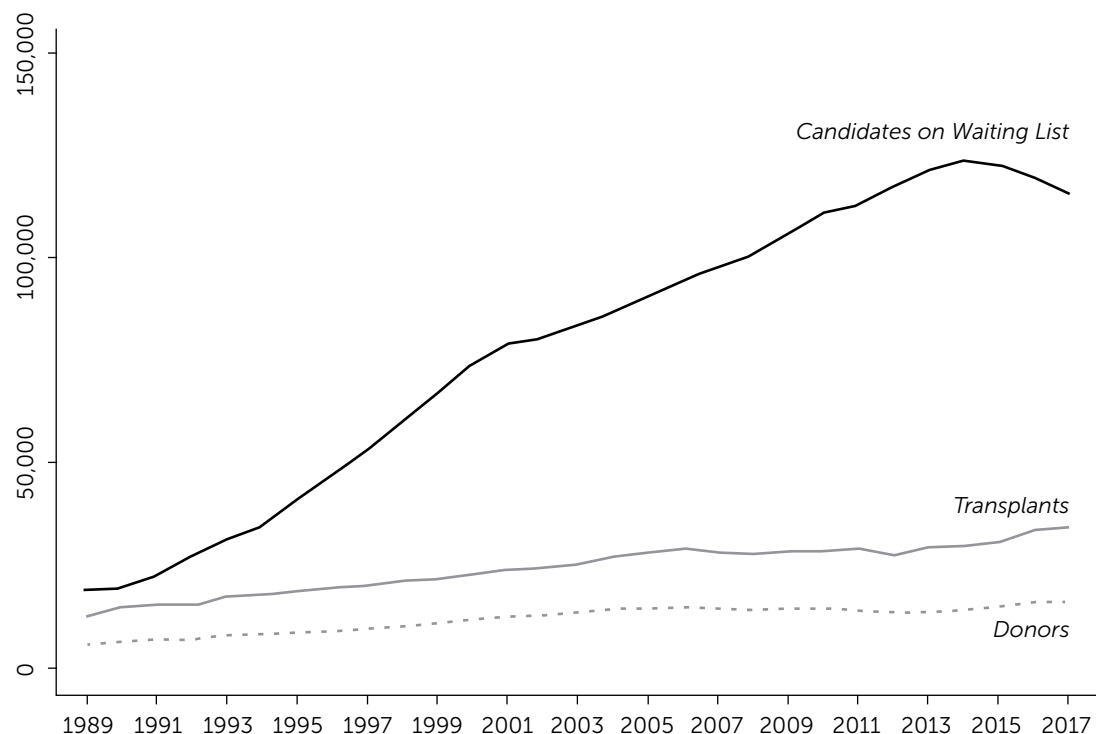
Who should take the lead?

Policymakers, researchers, and stakeholders in health care

Each day in the United States, approximately 20 people die while waiting for an organ transplant.¹ In 2003, behavioral scientists Eric J. Johnson and Daniel Goldstein made an audaciously simple proposal for how to save the lives of many of those on organ donation waiting lists: Switch from an explicit consent organ donation policy (where citizens are presumed to be nondonors unless they actively elect to become donors) to a presumed consent organ donation policy (where citizens are presumed to be donors unless they actively elect not to become donors).² Johnson and Goldstein provided lab and field evidence that this switch could dramatically increase the number of citizens consenting to donation. They were not the first to propose leveraging presumed consent as a solution to the transplantable organ shortage, but their article galvanized research into how default options can influence behavior and improve societal welfare.

In the United States, more than 148,000 people have died since 1995 while waiting for a suitable donor, and the gap between those who remain on the waiting list and those who receive transplants continues to widen (see Figure 1).³ Meanwhile, legislation regulating consent policies varies widely both across and within countries, and enthusiasm for using defaults to combat the organ donation shortage is inconsistent. In the United States, a handful of states have considered or proposed laws that would switch from explicit to presumed consent, but so far none have enacted them.^{4,5} Organizations that help facilitate organ procurement in this country frequently oppose presumed consent legislation, fearing that it could spur a backlash by the public. One president of an organ procurement organization described such policies as well-intentioned but fretted that “if we got this wrong, it would cost lives.”⁶

Figure 1. Candidates on waiting list for organ transplant, transplants, & donors in the United States between 1989 and 2017



Note. Data are from “Organ Donation and Transplantation Statistics: Graph Data,” by U.S. Government Information on Organ Donation and Transplantation, 2019 (<https://www.organdonor.gov/statistics-stories/statistics/data.html>). In the public domain.

“an overwhelming majority of citizens in the United States and abroad hold favorable views of organ donation”

In this review, we examine experimental and field evidence for how policy defaults affect the rates of consent, donation, and transplantation. We then consider consent policies within a broader set of factors that influence organ donation and look at how such factors may boost or undermine the effectiveness of different consent policies. We end by offering actionable recommendations for policymakers.

Why Defaults Matter

The rationale for presumed consent comes from the empirical finding that defaults are often “sticky”—individuals tend to stay with the default option, whatever that option happens to be. A recent meta-analysis by Jon Jachimowicz and colleagues, examining 58 studies in a variety of choice contexts and involving a pooled total of 73,675 participants, found that people are more likely to choose an option when that selection is designated as the default (Cohen’s $d = 0.68$, 95% confidence interval [0.53, 0.83]; see note A).⁷ Defaults can be powerful tools for nudging people toward desired behaviors, such as using greener electricity,^{8,9} saving for retirement,^{10,11} making healthier food choices,^{12,13} preserving privacy online,¹⁴ and receiving beneficial medical tests and treatments.^{15–17}

There are a number of reasons why having organ donation be the default could, in theory, increase donor registration rates. The most basic is that an overwhelming majority of citizens in the United States and abroad hold favorable views of organ donation,¹⁸ and presumed consent makes it easier for their donor status to match their preferences. Defaults can also counteract people’s tendency to skip making a decision when they do not have a strong preference; under a presumed consent system, such individuals would be registered as donors.² In addition to reducing effort and other costs of making an active decision, a default serves as a reference point against which other options

are evaluated; all things being equal, individuals tend to be biased toward staying with their initial reference point. They have this bias because the potential losses associated with switching loom larger than the benefits of switching¹⁹ and because people focus first and foremost on reasons to choose the focal option and not the alternative.²⁰ A presumed consent policy may also be viewed as an implicit endorsement of donation by the policymaker.^{21,22} Further, making donation the default may cause people to construe not donating as a more significant lapse in behavior than they would if nondonation were the default.²³

Although substantial experimental evidence delineates the benefits of defaults, not all findings are positive. Some studies in the meta-analysis mentioned above failed to find a reliable default effect, and two studies documented backfire effects.⁷ An example of a possible backlash against presumed consent for organ donation comes from recent legislation in the Netherlands. When the country switched to presumed consent, many citizens who had previously registered as donors switched their status to nondonor.²⁴

One reason why defaults can backfire is that they may sometimes be viewed as an intrusion or imposition by the government, which people may reflexively push back against.^{25,26} Another possibility is that citizens become more upset about having their organ donation preferences misrepresented by a presumed consent policy (where people who fail to state a preference are registered as donors) than by having their preferences misrepresented by an explicit consent policy (where people who fail to state a preference are registered as nondonors).²⁷ Finally, surviving family members may be more hesitant to consent to donation on behalf of a deceased relative under a presumed consent system because they are uncertain whether the deceased’s consent status reflects behavioral

inertia or a true donation preference. This uncertainty is eliminated under explicit consent.²⁸

Empirical Evidence of the Impact of Presumed Consent

Researchers conducting both controlled experiments and field studies have examined how different defaults affect consent rates for organ donation. Actual donation and transplantation rates do not lend themselves to experimental study; hence, for these outcomes, we examine their association with presumed consent legislation across countries and over time. Table 1 provides a summary of all studies that have compared consent, donation, or transplantation rates under presumed consent policies with rates under explicit consent policies. Table

2 provides a summary of the evidence from controlled survey-based experiments that vary the default for consent and compare hypothetical consent decisions. Table 3 provides a summary of the field evidence from panel studies that compared actual donation and transplantation rates across countries with different consent policies over time. Table 4 provides a summary of the field evidence from pre–post studies that compare actual donation and transplantation rates before and after the introduction or repeal of presumed consent in a country.

Consent Rates

Most researchers conducting studies examining the impact of policy defaults on consent rates have taken an experimental approach. In

Glossary

Consent Systems for Donors

Explicit consent: An individual is considered a nondonor unless the person explicitly registers a preference to donate organs after death. Consent is tracked via a donor registry or by carrying a donor card. Also called an *informed consent* or *opt-in policy*.

Presumed consent: An individual is considered to have agreed to donate organs after death unless the person actively objects to doing so. Lack of consent is tracked via a nondonor registry or by carrying a nondonor card. Also called *deemed consent* or an *opt-out policy*.

Active choice consent: An individual chooses whether or not to donate his or her organs after death, essentially answering *yes* or *no* to some version of the question “Do you want to be an organ donor?” Although technically there is no default status in this system, a failure to choose will typically result in the person’s organs not being donated. Also called *prompted choice*. (Although people are asked to explicitly state a preference, this approach is distinct from *explicit consent* as defined above because it does not necessarily assume that people who fail to express a preference are nondonors by default.)

Mandated choice consent: An individual chooses whether or not to donate organs after death. Choice is compulsory and typically requires an individual to register a preference in official government documents (such as in a driver’s license application or on annual tax returns) before those documents can be processed.

Consent Systems for Families

Soft consent: A deceased individual’s next of kin are actively consulted on organ donation, even if the deceased individual’s donation preferences are known. The family’s decision typically overrides the individual’s. Also called *weak consent*.

Strict consent: A deceased individual’s donation preferences (if known) are carried out without actively consulting next of kin. Also called *hard consent* or *strong consent*.

Outcomes

Consent rates: The proportion of citizens granting permission for their organs to be removed for transplantation if brain death occurs. Also called *registration rates*.

Donation rates: The proportion of eligible donors from whom organs are removed for transplantation. Also called *procurement rates*.

Transplantation rates: The proportion of people on an organ transplant list who receive organs.

Table 1. Evidence documenting an increase, decrease, or no difference in consent, donation, or transplantation rates as a function of presumed consent

Increase under presumed consent	Decrease under presumed consent	No difference or inconclusive
Abadie & Gay, 2006 (Panel) Albertsen, 2018 (Pre-post) Bilgel, 2012 (Panel) Bilgel, 2013 (Panel) Gimbel et al., 2003 (Panel) Gnant et al., 1991 (Pre-post) Horvat et al., 2010 ^a (Panel) Johnson & Goldstein, 2003 (Panel & survey) Li, Hawley, & Schnier, 2013 (Survey) Low et al., 2006 ^a (Pre-post) McCunn et al., 2003 ^a (Panel) Michielsen, 1996 ^a (Pre-post) Moseley & Stoker, 2015 (Survey) Neto et al., 2007 (Panel) Roels et al., 1991 (Pre-post) Roels & de Meester, 1996 ^a (Panel) Shepherd et al., 2014 (Panel) Soh & Lim, 1992 (Pre-post) Ugur, 2015 (Panel) van Dalen & Henkens, 2014 (Survey) Vanrenterghem et al., 1988 (Pre-post)	Dominguez & Rojas, 2013 (Pre-post)	Coppen et al., 2005 ^a (Panel) Coppen et al., 2008 ^a (Panel & pre-post) Healy, 2005 (Panel) Moseley & Stoker, 2015 (Postsurvey behavior)

Note. Panel = panel data study; Pre-post = pre-post study; Survey = survey-based experiment; Postsurvey behavior = survey-based experiment in which participants were redirected to a registrar site to complete registration. The references may be found in the reference list in the Appendix.

^aThe study did not report a statistical test of the differences in donation or transplantation rates between presumed and explicit consent conditions.

Table 2. Evidence from survey-based experiments

Citation	Sample	Method	Findings	Limitations
Johnson & Goldstein (2003)	161 online bulletin board members	Participants imagined moving to a state with policy: <ul style="list-style-type: none"> Explicit consent: confirm or change status as nondonor Presumed consent: confirm or change status as donor Mandated choice: choose whether or not to be donor 	95% higher consent rates under presumed than explicit consent	Hypothetical; nonrepresentative sample
Li, Hawley, & Schnier (2013)	270 Georgia State University students	Participants were assigned to one or two treatments across 30 rounds of consent decisions with monetary incentives: <ul style="list-style-type: none"> Explicit consent: tick box to change status to donor Presumed consent: tick box to change to nondonor Explicit consent + priority on transplant waiting list Presumed consent + priority on transplant waiting list Abstract explicit consent: "tokens" in lieu of organs 	93% higher consent rates under presumed than explicit consent across all rounds	Hypothetical; nonrepresentative sample; multiround economic game with questionable ecological validity (for example, experiment introduced financial penalties for switching from the default)
Moseley & Stoker (2015)	4,005 British adults	Nondonors invited to visit registrar site in different ways: <ul style="list-style-type: none"> Explicit consent: tick a box to visit registrar site to opt in Presumed consent: untick a box to not visit site Mandated choice: tick a box to visit or not visit site 	53% higher consent rates and registrar site visits under presumed than explicit consent, but less than 1% of all participants completed official registration	Unclear why so few people actually officially registered
van Dalen & Henkens (2014)	2,069 Dutch adults	Participants imagined moving to a state with policy: <ul style="list-style-type: none"> Explicit consent: leave status as is and not become a donor, register as a donor, or don't know Presumed consent: leave status as is and become a donor, object and not become a donor, or don't know Mandated choice: choose whether or not to be a donor Active choice: choose whether to be a donor, not be a donor, or delegate the decision to one's relatives 	64% higher consent rates under presumed than explicit consent if "I don't know" coded as default; 24% higher consent rates when omitting "I don't know" responses	Hypothetical; atypical wording of consent decisions and questionable ecological validity (for example, participants in explicit and presumed consent provided with "I don't know" option)

Note. The references may be found in the reference list in the Appendix.

Table 3. Field evidence from panel data

Citation	Sample	Factors controlled for	Findings	Limitations
Abadie & Gay (2006)	22 countries, 1993–2002	Health spending, mortality rates, gross domestic product, common versus civil law, religion, blood donation rate	16%–32% higher deceased donation rates under presumed consent compared with explicit consent	
Bilgel (2012)	24 countries, 1993–2006	Health spending, donor pool, common versus civil law, civil liberties, family consent, registry type	13%–18% higher deceased donation rates under presumed consent compared with explicit consent	
Bilgel (2013)	30 countries, 2008–2009	Health spending, income, legislative considerations, procedural considerations, managerial considerations, common versus civil law, civil liberties, religion, education	32%–43% higher deceased donation rates under presumed consent compared with explicit consent	
Coppen et al. (2005)	10 European countries, 2000–2002	None	No observable difference in conversion of potential donors to effectuated donors under presumed consent compared with explicit consent	No statistical controls for potential confounds; no statistical tests reported; United Kingdom misclassified as presumed consent (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)
Coppen et al. (2008)	10 European countries, 1995–2005	None	No observable difference in conversion of potential donors to effectuated donors under presumed consent compared with explicit consent	No statistical controls for potential confounds, no statistical tests reported; United Kingdom misclassified as presumed consent (Palmer, 2012)
Gimbel et al. (2003)	28 European countries, 1995–1999	Transplant capacity, religion, education	57% higher deceased donation rates under presumed consent compared with explicit consent	Consent policy classified on the basis of practice rather than law; no controls for mortality rates, gross domestic product, health spending, or legislative system (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)
Healy (2005)	17 countries, 1990–2002	Health spending, mortality rates, GDP	2.7 more donations pmp under presumed consent compared with explicit consent, but difference was not statistically reliable	No controls for transplant capacity, religion, education, or legislative system (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)
Horvat et al. (2010)	44 countries, 1997–2007	None	63% higher median kidney transplantation rate from deceased donors under presumed consent (22.5 pmp) compared with explicit consent (13.9 pmp)	No statistical controls; no statistical tests reported (Palmer, 2012)
Johnson & Goldstein (2003)	17 European countries, 1991–2001	Health care infrastructure, education, attitudes toward transplantation, presence of national registries	16% higher donation rates under presumed consent compared with explicit consent	
McCunn et al. (2003)	Two transplant hospitals, one in the United States & one in Austria, 2000	None	100% conversion of potential donors to effectuated donors under presumed consent at Austrian transplant center, compared with 46% under explicit consent at U.S. transplant center	No statistical controls; only used one hospital in each country; extremely small sample sizes, no statistical tests reported (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)
Neto et al. (2007)	34 countries, 1998–2002	Health spending, mortality rates, gross domestic product, common versus civil law, religion, access to information	21%–26% higher deceased donation rates under presumed consent compared with explicit consent	
Roels & de Meester (1996)	4 countries, 1992–1994	None	Higher deceased donation rates and organ transplants under presumed consent compared with explicit consent	No statistical controls; extremely small sample sizes; no statistical tests reported (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)
Shepherd et al. (2014)	48 countries, 2000–2012	Mortality rates, hospital beds, gross domestic product, common versus civil law, religion, helping behavior	43% higher deceased donation rates under presumed consent compared with explicit consent; 26% higher total number of kidney transplants and 50% higher total number of liver transplants under presumed consent compared with explicit consent	No controls for health spending, transplant capacity, or education
Ugur (2015)	27 European countries, 2000–2010	Health spending, health care infrastructure, mortality rates, religious beliefs, education	28%–32% higher donation rates and 27%–31% higher total number of kidney transplants under presumed consent compared with explicit consent	

Note. pmp = per million population. The references may be found in the reference list in the Appendix.

Table 4. Field evidence from pre–post data

Citation	Sample	Year when new consent implemented	Prechange period	Postchange period	Findings	Limitations
Albertsen (2018)	Wales	2015 EC → PC	2014–2015	2016–2017	11% increase in number of registered donors after the introduction of presumed consent; 3% increase in conversion of potential donors to effectuated donors after the introduction of presumed consent	Small time window before and after legislation; no statistical tests reported
Coppen et al. (2008)	Germany Italy Netherlands Sweden	1997 PC → EC 1999 EC → PC 1998 PC → EC 1996 EC → PC	1995	2005	Germany and Italy demonstrated no apparent differences in conversion of potential donors to actual donors before and after the introduction of the new consent system; Sweden and the Netherlands saw temporary changes in conversion of potential donors to actual donors after the introduction of the new consent system	No statistical tests or analyses reported (only graphical data); no statistical controls
Domínguez & Rojas (2013)	Chile	2010 EC → PC	2000–2009	2010–2011	29% decrease in deceased donation rates after the introduction of presumed consent; family refusal rates also increased over this time period	No statistical controls; small time window after legislation; did not account for concurrent trends in donation rates
Gnant et al. (1991)	A single Austrian transplantation center	1982 EC → PC	1965–1981	1982–1985	119% increase in deceased donation rates after the introduction of presumed consent	No statistical controls; only examined a single transplantation center; 16-year base period may not be appropriate comparison (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)
Low et al. (2006)	Singapore	2004 EC → PC for liver, heart, and corneas	2002–2004	2004–2005	160% increase in liver donations and 43% increase in liver transplants after the introduction of presumed consent	Extremely small sample size; no statistical controls; no statistical tests reported (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)
Michielsens (1996)	Belgium	1986 EC → PC	1986	1987–1988	86% increase in kidney donations after the introduction of presumed consent	No statistical controls; small sample size; no statistical tests reported (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)
Roels et al. (1991)	Belgium	1986 EC → PC	1982–1985	1987–1989	106% increase in kidney donations after the introduction of presumed consent	No statistical controls; limitations in the analysis (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)
Soh & Lim (1992)	Singapore	1987 EC → PC for kidneys	1970–1987	1988–1990	565% increase in kidney donations after the introduction of presumed consent	Small sample size; no statistical controls (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)
Vanrenterghem et al. (1988)	A transplantation network in Belgium (19 nephrology units)	1986 EC → PC	1978–1986	1987–1988	100% increase in kidney donations after the introduction of presumed consent	Small sample size; no statistical controls (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009; Rithalia, McDaid, Suekarran, Norman, et al., 2009)

Note. EC → PC = switched from explicit consent to presumed consent; PC → EC = switched from presumed consent to explicit consent. The references may be found in the reference list in the Appendix.

these experiments, participants are randomly assigned to confront hypothetical consent decisions that use language approximating the wording used in real life for policies based on explicit consent, presumed consent, or another kind of consent (see Glossary). This approach enables researchers to test whether different ways of framing consent have a direct causal effect on consent decisions.

As shown in Table 2, three experiments involved presenting participants with hypothetical consent decisions.^{2,29,30} Participants in these studies were 24% to 95% more likely to consent to donation under presumed consent than explicit consent. These results demonstrate that changing the default for donation causally affects consent choices, but they do not address whether consent rates in the lab reflect behavior out in the world. A fourth experiment attempted to test whether these preferences would translate into real behavior. It, too, found that presumed consent increased the proportion of individuals who said they were willing to be donors. But when subjects were directed at the end of the study to an official registry, fewer than 1% actually signed up as donors.³¹

Field studies suggest that presumed consent tends to increase the percentage of individuals registered to donate. Zeynep Burcu Ugur found that people in EU countries with presumed consent policies were less likely than those in EU countries with explicit consent policies to actively register a preference to donate, yet overall, the presumed consent countries had higher donation rates.²⁷ Apparently, citizens who weakly favored donation allowed themselves to be defaulted into consent without seeking out a donor card, and citizens who weakly preferred not to donate did not go to the trouble of removing themselves from the donor rolls, which led to overall higher rates of consent but lower rates of active choice. A similar pattern emerged when Wales introduced presumed consent legislation in 2015.³²

Passive enrollment into organ donation may prove problematic if the family of a potential donor is consulted about donation when the person dies: Fewer explicitly committed donors

in a country may result in a greater proportion of refusals by surviving family members, who may be uncertain about whether the deceased's consent reflects a true donation preference or a failure to register a preference to the contrary. In Wales, presumed consent laws did not affect family refusal rates, but Chile did see an increase in family refusals after a presumed consent policy was introduced.^{32,33}

Donation & Transplantation Rates

To answer the question of whether defaults save lives, as Johnson and Goldstein have suggested, it is not enough to examine consent rates. The ultimate outcomes of interest are whether defaults lead to an increase in donation rates (that is, whether organs are harvested from a donor) and transplantation rates (that is, whether organs are implanted from a donor into a recipient). One approach to determining whether defaults save lives relies on cross-country comparisons in panel studies (see note B). Although panel studies on organ donation defaults cannot isolate whether consent policies directly cause observed differences in donation rates, many of these studies come close by statistically adjusting for a variety of factors that may also affect donation rates, including a country's gross domestic product, health spending, and ability to carry out transplants (we discuss additional factors later in this review). Across the 14 panel studies we identified, countries with presumed consent policies consistently had higher donation rates than countries with explicit consent policies (see Table 3). On average, countries with presumed consent policies demonstrated a roughly 30% higher rate of donations when compared with countries with explicit consent, although the size of the effect varied substantially across studies.

Panel investigations are complemented by pre-post studies examining rates of organ procurement before and after the introduction of presumed consent in a country. The number of countries that have switched to presumed consent in recent decades is relatively small, so not many empirical studies have been able to address this question. These studies also come with their own limitations, as they typically do not adjust for other concurrent trends

or legislative changes affecting donation rates, and they apply inconsistent time horizons when comparing donation rates over time. Still, findings from pre–post studies are generally consistent with the panel evidence and suggest that donation rates increase after countries implement presumed consent legislation (see Table 4). Some anecdotal evidence suggests that donor efficiency rates (the conversion of potential donors into actual donors) may also increase with presumed consent.³⁴ One exception to this trend was Chile, where organ donation rates decreased over a two-year period after presumed consent legislation was introduced.³³

To our knowledge, only five studies have looked specifically at transplantation rates rather than at donation rates. These studies compared rates in countries with presumed consent and explicit consent policies and again found a positive effect of presumed consent legislation, although these increases were not always statistically significant.

Other Consent Policies: Active & Mandated Choice

As we noted when discussing experimental research, explicit and presumed consent policies are not the only kinds of consent policies available to states and countries. Whereas explicit and presumed consent policies focus on what happens when individuals fail to make a decision, two other systems—active and mandated choice policies—focus on clarifying donor preferences. They prompt individuals to specifically state whether they prefer to be registered as donors or as nondonors, rather than asking merely whether they wish to maintain or change their default status. People are given both *yes* and *no* options to the question of whether they want to be a donor and are told to pick one. On the one hand, mandated choice systems make the choice compulsory, typically by requiring people to register their preferences in official government documents before those documents can be processed (such as in driver's license applications or annual tax returns).^{35–38} Active choice systems, on the other hand, allow people to defer making a decision on the matter,

in which case individuals are typically registered as nondonors. (Although both active and mandated choice systems ask people to make explicit choices, this does not automatically make them explicit consent systems, because they do not necessarily assume that people who fail to express a preference are nondonors by default.)

Richard H. Thaler and Cass R. Sunstein championed active and mandated choice systems in their 2008 book *Nudge: Improving Decisions About Health, Wealth, and Happiness*,³⁹ as have organizations such as the American Medical Association and the United Network for Organ Sharing.³⁸ Mandated choice has some meaningful drawbacks compared with presumed choice (see Table 5), but it is a particularly appealing alternative when having a presumed consent system is not feasible. It is attractive for several reasons. First, many people believe that consent for organ donation is best achieved by having adults decide for themselves whether to donate.³⁶ Second, mandated choice systems help to alleviate the uncertainty that many surviving family members face when deciding whether to consent to donation; experimental evidence suggests that individuals have more confidence that they know someone else's donation preferences under mandated choice systems than with presumed consent systems.^{28,40} As we discuss in more detail later, being sure of a potential donor's wishes can increase the rate at which surviving family members consent to donating the deceased's organs. However, both of these virtues diminish in active choice systems if choice-deferral rates are high.

Evidence on the efficacy of active and mandated choice legislation is sparse. Researchers who have examined hypothetical consent decisions have usually found that active and mandated choice systems yield consent rates higher than those of explicit consent systems but similar to those of presumed consent.^{2,30,31} Yet some studies cast doubt on the effectiveness of active choice systems. A laboratory experiment in which participants' organ donation preferences were entered into an official registry did not find reliably different consent rates under active choice versus explicit consent approaches.⁴¹

Table 5. Summary of benefits & drawbacks for presumed consent, explicit consent, & active or mandated choice

Policy	Potential benefits	Potential drawbacks
Explicit consent	<ul style="list-style-type: none"> • <i>Makes preference to donate explicit to surviving family</i> Because a person must opt in to become a donor under explicit consent, it is clear to surviving family members that a deceased person's status as a donor reflects a desire to donate. 	<ul style="list-style-type: none"> • <i>Least effective at increasing donation rates</i> Explicit consent tends to lead to lower consent, donation, and transplantation rates than presumed consent or active or mandated choice. • <i>Requires people to take action to become donors</i> When most citizens hold positive attitudes toward organ donation (as in the United States), explicit consent makes it difficult for a nation's majority to behave in accordance with its preferences.
Presumed consent	<ul style="list-style-type: none"> • <i>Most effective at increasing donation rates</i> Presumed consent tends to increase consent, donation, and transplantation rates—often substantially so—compared with explicit consent. • <i>Makes it easy to consent</i> When most citizens hold positive attitudes toward organ donation (as in the United States), presumed consent makes it easy for a nation's majority to behave in accordance with its preferences. 	<ul style="list-style-type: none"> • <i>Makes preference to donate ambiguous to surviving family</i> Because a person is assumed to be a donor unless they opt out under presumed consent, it is unclear to surviving family members whether the deceased person's status as a donor reflects a desire to donate or a failure to opt out. • <i>More likely to result in political blowback</i> Presumed consent is viewed as a more intrusive policy than explicit consent. Citizens may also be more upset if their preferences are misrepresented under presumed consent than under explicit consent.
Active choice & mandated choice	<ul style="list-style-type: none"> • <i>May increase donation rates relative to explicit consent</i> Although field data are sparse, they suggest that mandated choice may increase donation rates compared with explicit consent. • <i>Make preferences clear to surviving family</i> Active and mandated choice alleviate the uncertainty that surviving family members often face in deciding whether to consent to donation, as the deceased individual's preferences are known and can be honored. • <i>Less likely to result in political blowback</i> Survey data suggest that active and mandated choice are likely to receive support from the general public, as many people believe that consent for organ donation is best achieved by having each adult explicitly register a preference. 	<ul style="list-style-type: none"> • <i>Require people to take action to become donors</i> Active and mandated choice require people to actively register their preference to be a donor or not. • <i>May be logistically difficult to register individuals' preferences</i> Mandated choice may be logistically difficult, as it should be carried out in a setting that gives all citizens equal ability to register their preferences (for example, registering organ donation preferences at a driver's license renewal will reach only those citizens who drive). • <i>Can be ineffective if individuals do not register their preferences</i> Active choice can be ineffective when individuals can easily decide not to respond and are then defaulted to nondonation.

We are aware of only one field examination of active choice's effect on consent rates and none looking at mandated choice. In the study, California's switch to active choice from an explicit consent approach in 2011 was examined.⁴¹ Introduction of active choice led to a decrease in consent rates of roughly 2 to 3 percentage points relative to the rates in other comparison states over the same time period. Consent rates were examined over a short time horizon (less than a year), however, so the long-term effects of the change are unclear. Anecdotal evidence from other states is consistent with the data from California, though. Virginia instituted an active choice law in 2000 and reconsidered the policy because of low enrollment rates; large numbers of citizens failed to register a decision and were defaulted to nondonation.^{42–45}

Thus, active choice systems appear to offer no advantage if nonenrollment is the implicit default and individuals can easily decide not to respond. If that impression were borne out, it—combined with the other data described in this article—would suggest that states would end up with the most donors by using presumed consent, rather than the active choice or explicit consent that is currently in place in all 50 states.

Putting Consent Policies Into Perspective

Consent policies are just one factor among many that determine donation and transplantation rates—including specific features of the consent process, how surviving family members are consulted, and broader social

“families of potential donors almost always make the final call, officially or unofficially”

and cultural values around organ donation. Moreover, consent is helpful only insofar as viable organs are available for transplantation and only if health care infrastructure is in place to facilitate efficient organ procurement and transplantation.

Features of the Consent Process

A number of obstacles, including seemingly minor ones, can interfere with getting people to register as donors. Too much paperwork can reduce registration rates, so minimizing that paperwork or finding other ways to make registering more efficient helps.⁷ Until 2014, New York had a notoriously complicated procedure, requiring a person to have multiple witnesses present to officially certify his or her donation consent, and approval was granted only after one received a driver license but was not given at the Department of Motor Vehicles (DMV) itself. Likely not coincidentally, New York had one of the lowest consent rates in the United States. The state changed to an active choice system in 2012 and afforded people multiple ways to register their preferences; it has since seen a meaningful expansion of the donor roll.⁴⁶

Incentives may also help motivate citizens to explicitly register their donation preferences. Policy proposals have included monetary compensation for families of donors^{47,48} or giving registered donors priority in the event that they themselves need a transplant.⁴⁹

The setting where people are approached also matters: not all settings will attract the same population of potential donors, nor will all settings give all citizens equal ability to register their preferences. For instance, combining donor registration with the process of obtaining a driver's license is certainly efficient, as relevant information is already being gathered. But asking about organ donation during license renewal will mean that only drivers will have a convenient opportunity to register their preferences. In addition, settings like DMVs can make it difficult for people to give the appropriate

amount of time, attention, or gravity to a decision about an end-of-life matter, leading them to possibly abstain from choosing.⁵⁰ (Individuals can instead make the decision at home, using an organ procurement organization website, but many people do not know that.)

As for donation rates, one frequently overlooked donation determinant is that the families of potential donors almost always make the final call, officially or unofficially. For this reason, some have suggested that increasing donation consent rates from families may be the most promising way to increase organ availability.⁵¹

Countries differ in how much weight they give to the preferences of the family members.^{52,53} In countries with a “soft consent” policy, survivors are typically consulted and make the final decision, whereas under a “strict consent” policy, registered preferences are followed without active consultation with next of kin. Austria has perhaps the strictest policy: doctors recover organs without conferring with family as long as the deceased did not actively elect out of donation.⁵⁴ In practice, in most countries, family members are consulted and are less likely than the donors themselves to approve donation. Donation rates are lower in countries where family consent is routinely sought,⁵² and transplantation rates in countries where family consent is legally required are half those of countries lacking this requirement.⁵⁵

However, in contrast to families whose permission is sought, those who are informed about the wishes of the deceased and told that the organ procurement organization's goal is to honor those wishes are less likely to oppose donation.^{56,57} Personal contact between donation coordinators and families can also help: In one study, surviving families who were contacted about possible cornea donation were considerably more likely to approve the request when approached in person (81.6%) than by telephone (55.2%).⁵⁸ Further, education and counseling for families has been

found to increase consent. Families of patients who are brain dead (as is the case for many potential donors) are more likely to agree to donation when they understand brain death and are counseled by on-site coordinators with specialized training.⁵⁹ This finding has led some observers to argue that new presumed consent policies must be combined with on-site coordinators to work with families.⁵⁰

The Social Context of the Consent Process

The political climate in a state or country can have a substantial influence on which organ donation policies are set and thus how potential donors are solicited. For example, part of the concern with a switch to presumed consent in the United States is that public opinion on the topic is not well understood.⁴⁵ The most recent national survey of attitudes toward presumed consent, conducted in 2012 by the U.S. Department of Health and Human Services, found that roughly half of adults supported a presumed consent default (51%)—a substantial increase over the 42% support rate found in 2005.^{6,18} It is unclear how or whether people's preferences have changed in the intervening seven years, and getting a handle on public preference is not easy.

Public support for presumed consent is also often dwarfed in public opinion polls by a preference for mandated or explicit choice. In one such study, which examined families who had made decisions about donating a loved one's organs, families tended to be more supportive of a strict mandated choice system in which families would not have an override (43%) than a presumed consent system (23%).⁴⁵ Other research has found a similar pattern but with greater approval for presumed consent.^{2,30,36,60} Aaron Spital found in a 1992 analysis that most respondents supported presumed consent (62% approval), but it was still less popular than mandated choice (90% approval).⁶⁰ Other polls show that presumed consent is sometimes preferred to explicit consent: When the United Kingdom was starting initial deliberations about a presumed consent law to increase organ donation, 65% of those surveyed in a national panel supported a change from explicit to

presumed consent, and the proportion jumped to 72% when the panel learned more about the proposed changes.⁶¹

Given the uncertainty about how presumed consent policies will be received, some organ procurement organizations in the United States have been hesitant or even strongly opposed to presumed consent as a policy.^{62,63} Presumed consent is unlikely to gain much traction until those organizations feel comfortable lobbying on behalf of such a policy.

Anecdotally, some countries have experienced political backlash after changing from an explicit consent policy to a presumed consent policy. In addition to the controversy in the Netherlands mentioned earlier, Brazil offers an example: It enacted a presumed consent law in 1997 only to repeal it a year later. Not only was the legislation poorly implemented, as it did not provide resources to improve donation infrastructure, it also sparked a great deal of pushback from people who feared that doctors would prioritize harvesting organs over saving lives.⁶⁴ There were also concerns that the poor and illiterate in Brazil would be less capable of opting out, as consent decisions were registered when obtaining or renewing a driver's license, which many poor citizens did not have.^{65,66}

Cultural beliefs and values may influence consent, too. Organ donation rates from deceased donors are higher in predominantly Catholic countries, where organ donation is viewed as an act of service,^{55,66–69} and lower in countries in which religious beliefs about keeping the body intact after death are common.⁵⁵ More broadly, positive public attitudes toward helping and giving correlate positively with donation.^{67,69}

Trust in government and medical systems also likely play an important role in shaping public attitudes about organ donation. In the United States, a number of ethnic groups and minorities are less likely to consent to donate, citing disbelief that the government has their best interests in mind or suspecting that physicians may not be as motivated to save them in a medical emergency if they are a registered donor.⁷⁰ Mistrust in

the government and the health care system has been cited as another possible source of resistance to presumed consent in Brazil^{69,71} and a reason for the unpopularity of organ donation itself in Japan.⁷² Additionally, emotional considerations, such as disgust at the idea of organ donation and superstitious beliefs that registration will somehow lead to harm or death for the potential donor, may play a role in how people respond to consent policies.^{73,74}

Education^{55,68} and access to information⁶⁶ can help build support for organ donation; even dramatizations in popular television shows have been shown to increase knowledge and willingness to donate.⁷⁵ Likewise, awareness of consent policies can help to increase consent: presumed consent has a greater advantage over explicit consent when citizens are aware of their country's approach to consent than when they are not.⁷¹ Informational campaigns may do little, however, to curb negative opinion grounded primarily in religious, emotional, or superstitious considerations.⁷⁶

The Process for Organ Procurement & Transplantation

Donation and transplantation rates depend, in part, on the supply of viable organs. Several organs can be procured from living donors, including kidneys and partial livers, but most other donated organs and tissues must come from patients who have been declared brain dead but whose hearts continue to beat so that their organs and tissues remain viable for transplantation.⁷⁷ Thus, donation and transplantation rates may depend critically on whether public policy and medical practices permit organs to be harvested from donors efficiently.⁷⁸

Because procurement rates depend on the number of people who experience brain death but maintain a heartbeat, the frequency of different causes of death in a country has a sizeable impact on organ donation rates.³⁴ Causes of death that leave people in the appropriate state for donation are relatively rare: The most generous estimates suggest that, at most, 40,000 deaths fit the criteria in the United States,⁷⁹ and this estimate does not take into account additional information about

potential donors that could preclude donation. In comparison, a 2003 estimate attempting to account for such exclusions put the maximum number of potential donors at 14,000 annually in the United States.⁸⁰ Further, the supply of viable organs for transplantation has been falling in many countries due to improvements in traffic safety and advancements in treating what in the past would have been fatal brain injuries.⁷⁸ In the United States, however, the recent opioid epidemic has led to a surge of eligible donors that has partly offset those other trends.⁸¹

A hugely important factor for donation rates—one at least as substantial as presumed consent legislation—is the medical infrastructure supporting organ donation.^{52,53,55,66,68} An analysis of organ donation trends in countries of Europe, North America, and South America found that the effect of presumed consent legislation on donation rates was dwarfed by the impact of per capita spending on health care.⁶⁶ Another cross-country analysis found that the single strongest predictor of donation rates was the per capita number of transplant centers in a country (the second strongest predictor was presumed consent legislation).⁶⁸

Additionally, in the United States, a concerted effort to improve the efficiency by which organ procurement organizations converted medically eligible donors into “effectuated” donors (whose organs were actually used for transplants) corresponded with an increase in conversion rates from 57% in 2004 to 73% in 2012.⁸² Indeed, some have argued that the success of the Spanish model of organ donation, one of the most effective and widely emulated systems in the world, is due not to the addition of presumed consent alone but to its combination with other policies, such as those focused on improving infrastructure for donation and transplantation.^{83,84}

Cost Considerations

Policies designed to increase organ donation tend to be cost-effective when compared with other policies for improving health.⁴² And implementing a change to a presumed consent policy is likely to be inexpensive relative to other policy

20

Americans who die every day while waiting for an organ transplant

30%

Average increase in successful organ donations in countries with presumed consent policies

14k

Estimated maximum number of viable heart-beating donors per year in the US

or infrastructure changes designed to increase organ donation, because many of the forms, registries, and procedures already in place to administer an explicit consent policy can be adapted to administer a presumed consent policy. In general, nudge-style interventions, such as changing a default option, tend to yield a better return on investment than traditional policy tools, such as financial incentives or educational campaigns.⁸⁵ However, a presumed consent policy will be most successful when implemented alongside other policy and infrastructure changes that carry additional costs. For example, when the United Kingdom considered switching to a presumed consent policy for organ donation in 2008, the Organ Donation Taskforce estimated that approximately £45 million (about \$59 million) would be needed for setup costs (such as for initiating a public awareness campaign and developing a secure database) and £2 million (about \$2.6 million) would be needed for annual operating costs.⁸⁶

Recommendations for Making Consent Policies More Effective

On the basis of the available evidence, we believe that presumed consent policies offer a promising way to increase the number of potential organ donors and save more lives. Policymakers will need to balance a number of other considerations to ensure that these policies are successful, however. In Table 5, we provide a summary of the potential benefits and drawbacks associated with each consent system discussed in this article. In the text that follows, we highlight the importance of investing in health care infrastructure that supports organ donation, and we offer recommendations informed by behavioral science for promoting the conditions that will make presumed consent policies most effective.

Make It Easy for Individuals to Register Their Preference

One of the most powerful lessons from studies of choice architecture (that is, how options are presented) is that even small frictions and difficulties can dramatically influence the decisions people make—a fact often underappreciated

by policymakers.⁸⁷ Making it easy for people to become organ donors can help to increase donor registration rates. For example, organ donor registration rates in the United States rose 21.1-fold relative to the baseline average when Facebook enabled members to specify *organ donor* on their profile and provided links to educational materials and members' state registries.⁸⁸ Presumed consent is appealing in part because it eliminates these frictions by defaulting citizens to an outcome that matches the majority preference to donate.

Under such a system, policymakers should also strive to make it easy for citizens to register a preference not to donate. As discussed earlier, Brazil overturned its presumed consent law in part because people who did not drive or own a car (that is, the country's poorest citizens) did not have a viable way of opting out.⁶⁶ This barrier will become even more important as autonomous vehicles and other new alternatives to driving reduce the likelihood that citizens will have to interact with the DMV. Making registration easy to accomplish outside the DMV should not only boost the number of consenting donors but also ensure that those who do not want to donate their organs are properly accounted for on donor rolls.

Educate the Public

Ensuring that the public is aware of consent policies can increase the effect of presumed consent on donation.⁷¹ Also, the more overtly a policy frames organ donation as good citizenship and a life-saving action, the more effective such a policy may be.⁸⁹ For example, knowing specifically how others are helped by one's donation can increase consent rates.⁴¹ Policymakers should also address concerns of minority and ethnic groups who might be skeptical of the medical system or government.⁷⁰ Switching to presumed consent without addressing cultural values or obtaining buy-in from the community will likely exacerbate people's worries and could lead to political blowback.²⁴ More generally, a systematic approach to education on organ procurement policies and practices may increase people's understanding of and receptivity to organ donation.

Craft Public Messaging Carefully

The success of any policy is at least partly determined by how that policy is presented to the public. Policymakers considering a change to presumed consent can highlight the fact that most people wish to donate and that their new policy proposal would better align with people's preferences. Such messages may go far toward mitigating skepticism, especially among people who view presumed consent legislation as an attempt by policymakers to coerce individuals into donation.²⁴ Other kinds of messages should also increase consent rates over the rates that would be achieved with standard messaging—for instance, ones that highlight notions of reciprocity (such as "If you needed an organ transplant, would you have one? If so, please help others"), calculate the lives lost due to a shortage of donors (such as "Three people die every day because there are not enough organ donors"), emphasize social norms in favor of donation (such as "Every day thousands of people who see this page decide to register"), or highlight the number of lives that could be saved by donation (such as "You could save or transform up to nine lives as an organ donor"). These messages are ranked in order from most to least effective according to 2013 findings of the Behavioural Insights Team, an organization devoted to applying behavioral science research to inform public policy.⁹⁰

Roll Out New Policies Gradually

Gradual, transitional steps to a new consent policy may also help boost acceptance of presumed consent or any other consent system. For example, active or mandated choice may serve as a useful interim step, because they tend to garner a lot of popular support and have increased consent rates in hypothetical studies^{2,30,31} and in real decisions about blood donation,⁹¹ health program enrollment,⁹² and advanced directives.^{93,94} However, such policies may need to be executed more carefully than simply requesting a yes or no answer to some form of the question "Do you want to be an organ donor?" (see the Supplemental Material for consent language by state in the United States).⁴¹ For example, enhanced active choice—active choice with informational or normative

"active and mandated choice may serve as a useful interim step"

nods to the desired response⁹⁵—can help to encourage consent. Utah, for one, highlights the prosocial effects of consent by wording its request, "I would like to register my desire to help others by being an organ, eye, and tissue donor (life-saving anatomical gift)."

Support & Facilitate Consent From Surviving Family Members

Surviving family members often have the final say on donation either by law or in practice, and family decisions to consent largely depend on their knowledge of their loved ones' donation preferences. Unfortunately, many families lack such information—less than half of the families in one study reported having had an explicit discussion about organ donation with their loved ones.⁵¹ When officials do know that a deceased person has volunteered to be a donor, they would be wise to take guidance from the research, mentioned earlier, indicating that informing families of the deceased's wish and expressing the organ procurement organization's goal of honoring the deceased's preference can increase consent relative to simply asking for permission to carry out the organ donation.⁵⁶

Policymakers should further be aware that surviving family members may be less certain of the potential donor's preferences under presumed or explicit consent policies than under a mandated choice policy.^{28,41} Also important to consider is that families are being asked to make a grave choice at an often unexpected and traumatic time. Ensuring that families are approached in a quiet and private place, educated about brain death before discussing donation, and counseled by on-site coordinators with specific training is key both to tactfully respecting the family members' relationship with their loved one and to increasing

the chances that they will ultimately consent to donation.^{50,59}

Final Thoughts

Overall, the research suggests that presumed consent often yields higher consent, donation, and transplantation rates. However, presumed consent is not a panacea but rather one factor among many that determine the number of organs donated and lives saved. Evidence suggests that presumed consent policies will be most effective if they are backed up by a simple process for registering preferences, accurate information about organ donation, clear public messaging that highlights the value of donation and addresses concerns, a gradual rollout of new policies, on-site support and counseling for families making consent decisions, and efficient infrastructure for organ procurement and transplantation.

Perhaps the most important lesson to be drawn from this review is the importance of further research and of continued learning by researchers and policymakers at all stages of the policymaking process. Although the bulk of research suggests that presumed consent is the most effective consent policy for promoting organ donation, many open questions remain about the extent to which presumed consent can increase donation rates, under what conditions such policies are most effective, and whether active or mandated choice is a viable alternative when presumed consent is seen as politically untenable.

Further, policymakers should strive to take an evidence-based approach to crafting consent policies and managing the context surrounding consent. The Behavioural Insights Team's "test, learn, adapt" approach⁹⁶ uses randomized

controlled trials to determine how best to execute new policies and serves as an example of how other policymakers can ensure that data, rather than intuition, drive important policy decisions.

Johnson and Goldstein's research opened eyes to the possibility that consent defaults are vital to the success of organ donation.² In the 16 years since, more evidence in support of this contention has accumulated, along with important information about how to make defaults most effective. Now researchers and policymakers need to build on what is known and ensure that defaults truly do improve public welfare and save lives.

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supplemental material

- <https://behavioralpolicy.org/publications/>
- Supplemental table

endnotes

- A. Editor's note to nonscientists: Researchers assess the size of observed effects using measures such as Cohen's *d*, for which values of 0.2, 0.5, and 0.8 typically indicate small, medium, and large effect sizes, respectively.
- B. Published reviews of panel studies by Rithalia and colleagues,^{97,98} Palmer,⁹⁹ and Shepherd et al.⁶⁹ discuss the methodological approaches and quality of various studies of presumed consent; see these reviews for more information about how these studies were conducted and how such methods may affect the interpretation of the findings.

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