

APS Journal Research Related to Epidemics: Publicly Available Online

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The Association for Psychological Science has made its journal research pertaining to epidemics and related health issues publicly available.

[Distress, Worry, and Functioning Following a Global Health Crisis: A National Study of Americans' Responses to Ebola](#): *Clinical Psychological Science*, April 26, 2017

Abstract: The 2014 Ebola crisis received unprecedented media attention in the United States, despite low risk of transmission. We examined theoretically derived correlates of psychological response to the crisis, including Ebola-related media exposure, prior mental health history, and stress response to a recent prior collective trauma (the 2013 Boston Marathon bombing, BMB). A national probability sample completed a survey 2–4 weeks post-BMB; 18 months later, the same sample reported responses to the Ebola crisis ($N = 3,447$). History of mental health diagnoses, acute stress response to the BMB, and Ebola-related media exposure were associated with greater psychological distress and functional impairment. Prior acute stress and Ebola-related media exposure were also associated with Ebola-related worry; individuals with higher BMB-related acute stress who consumed more Ebola-related media were

more worried about contracting Ebola. Media coverage of the Ebola public health crisis was associated with negative psychological outcomes, even among individuals at low risk for contracting the disease.

[Effects of Symptom Presentation Order on Perceived Disease Risk](#): *Psychological Science*, March 5, 2012

Abstract: People are quick to perceive meaningful patterns in the co-occurrence of events. We report two studies exploring the effects of streaks in symptom checklists on perceived personal disease risk. In the context of these studies, a streak is a sequence of consecutive items on a list that share the characteristic of being either general or specific. We identify a psychological mechanism underlying the effect of streaks in a list of symptoms and show that the effect of streaks on perceived risk varies with the length of the symptom list. Our findings reveal a tendency to infer meaning from streaks in medical and health decision making. Participants perceived a higher personal risk of having an illness when presented with a checklist in which common symptoms were grouped together than when presented with a checklist in which these same symptoms were separated by rare symptoms. This research demonstrates that something as arbitrary as the order in which symptoms are presented in a checklist can affect perceived risk of disease.

Related news release: [Checking Off Symptoms Online Affects Our Perceptions of Risk](#)

[Sneezing in Times of a Flu Pandemic: Public Sneezing Increases Perception of Unrelated Risks and Shifts Preferences for Federal Spending](#): *Psychological Science*, January 22, 2010

Abstract: The public's perception of a given health risk increases with coverage of the risk in the news media (e.g., [Kalichman, 1994](#); see [Breakwell, 2007](#), for a review). Laboratory experiments further suggest that heightened perception of the risk posed by one hazard fosters heightened perception of the risk posed by other, unrelated hazards ([Johnson & Tversky, 1983](#)). This generalization across domains reflects that intuitive risk assessments are often based on current feelings ([Loewenstein, Weber, Hsee, & Welch, 2001](#)), which allows feelings elicited by one threat to influence assessment of other threats ([Schwarz & Clore, 2007](#)). Accordingly, minor everyday events that bring a current, affectively charged threat to mind may influence risk perception in unrelated domains. We present a naturalistic test of this possibility in the context of the current swine flu pandemic, which spread from initial cases in Mexico to more than 70 countries and all 50 states of the United States, resulting in some 30,000 documented cases with 145 deaths worldwide within 2 months ([World Health Organization, 2009](#)). The extensive media coverage of swine flu highlighted the risk of contagion and offered hygiene recommendations, ranging from frequent hand washing to wearing face masks and avoiding physical contact (Centers for [Disease Control and Prevention, 2009](#)).

[Fear of Ebola: The Influence of Collectivism on Xenophobic Threat Responses](#): *Psychological Science*, May 20, 2016

Abstract: In response to the Ebola scare in 2014, many people evinced strong fear and xenophobia. The present study, informed by the pathogen-prevalence hypothesis, tested the influence of individualism and collectivism on xenophobic response to the threat of Ebola. A nationally representative sample of 1,000 Americans completed a survey, indicating their perceptions of their vulnerability to Ebola, ability to protect themselves from Ebola (protection efficacy), and xenophobic tendencies. Overall, the more

vulnerable people felt, the more they exhibited xenophobic responses, but this relationship was moderated by individualism and collectivism. The increase in xenophobia associated with increased vulnerability was especially pronounced among people with high individualism scores and those with low collectivism scores. These relationships were mediated by protection efficacy. State-level collectivism had the same moderating effect on the association between perceived vulnerability and xenophobia that individual-level value orientation did. Collectivism—and the set of practices and rituals associated with collectivistic cultures—may serve as psychological protection against the threat of disease.

Mere Visual Perception of Other People's Disease Symptoms Facilitates a More Aggressive Immune Response: *Psychological Science*, April 2, 2010

Abstract: An experiment ($N = 28$) tested the hypothesis that the mere visual perception of disease-connoting cues promotes a more aggressive immune response. Participants were exposed either to photographs depicting symptoms of infectious disease or to photographs depicting guns. After incubation with a model bacterial stimulus, participants' white blood cells produced higher levels of the proinflammatory cytokine interleukin-6 (IL-6) in the infectious-disease condition, compared with the control (guns) condition. These results provide the first empirical evidence that visual perception of other people's symptoms may cause the immune system to respond more aggressively to infection. Adaptive origins and functional implications are discussed.

Infections and Elections: Did an Ebola Outbreak Influence the 2014 U.S. Federal Elections (and if so, How)?: *Psychological Science*, March 14, 2016

Abstract: In the studies reported here, we conducted longitudinal analyses of preelection polling data to test whether an Ebola outbreak predicted voting intentions preceding the 2014 U.S. federal elections. Analyses were conducted on nationwide polls pertaining to 435 House of Representatives elections and on state-specific polls pertaining to 34 Senate elections. Analyses compared voting intentions before and after the initial Ebola outbreak and assessed correlations between Internet search activity for the term "Ebola" and voting intentions. Results revealed that (a) the psychological salience of Ebola was associated with increased intention to vote for Republican candidates and (b) this effect occurred primarily in states characterized by norms favoring Republican Party candidates (the effect did not occur in states with norms favoring Democratic Party candidates). Ancillary analyses addressed several interpretational issues. Overall, these results suggest that disease outbreaks may influence voter behavior in two psychologically distinct ways: increased inclination to vote for politically conservative candidates and increased inclination to conform to popular opinion.

Sick Body, Vigilant Mind: The Biological Immune System Activates the Behavioral Immune System: *Psychological Science*, November 4, 2011

Abstract: Activation of the behavioral immune system has been shown to promote activation of the biological immune system. The current research tested the hypothesis that activation of the biological immune system (as a result of recent illness) promotes activation of the behavioral immune system. Participants who had recently been ill, and had therefore recently experienced activation of their biological immune system, displayed heightened attention to (Study 1) and avoidance of (Study 2) disfigured individuals—cognitive and behavioral processes reflecting activation of the behavioral immune

system. These findings shed light on the interactive nature of biological and psychological mechanisms designed to help people overcome the threat of disease.

Note: A [Preregistered Direct Replication of this study](#) has been published in *Psychological Science*.

[It's Not All About Me: Motivating Hand Hygiene Among Health Care Professionals by Focusing on Patients](#): *Psychological Science*, November 10, 2011

Abstract: Diseases often spread in hospitals because health care professionals fail to wash their hands. Research suggests that to increase health and safety behaviors, it is important to highlight the personal consequences for the actor. However, because people (and health care professionals in particular) tend to be overconfident about personal immunity, the most effective messages about hand hygiene may be those that highlight its consequences for other people. In two field experiments in a hospital, we compared the effectiveness of signs about hand hygiene that emphasized personal safety (“Hand hygiene prevents you from catching diseases”) or patient safety (“Hand hygiene prevents patients from catching diseases”). We assessed hand hygiene by measuring the amount of soap and hand-sanitizing gel used from dispensers (Experiment 1) and conducting covert, independent observations of health care professionals’ hand-hygiene behaviors (Experiment 2). Results showed that changing a single word in messages motivated meaningful changes in behavior: The hand hygiene of health care professionals increased significantly when they were reminded of the implications for patients but not when they were reminded of the implications for themselves.

[How Do People Value Life?](#): *Psychological Science*, December 22, 2009

Abstract: Who should be saved when health resources are limited? Although bioethicists and policymakers continue to debate which metric should be used to evaluate health interventions, public policy is also subject to public opinion. We investigated how the public values life when evaluating vaccine-allocation policies during a flu epidemic. We found that people’s ratings of the acceptability of policies were dramatically influenced by question framing. When policies were described in terms of lives saved, people judged them on the basis of the number of life years gained. In contrast, when the policies were described in terms of lives lost, people considered the age of the policy’s beneficiaries, taking into account the number of years lived to prioritize young targets for the health intervention. In addition, young targets were judged as more valuable in general, but young participants valued young targets even more than older participants did.

[Misinformation and Its Correction: Continued Influence and Successful Debiasing](#): *Psychological Science in the Public Interest*, September 17, 2012

Abstract: The widespread prevalence and persistence of misinformation in contemporary societies, such as the false belief that there is a link between childhood vaccinations and autism, is a matter of public concern. For example, the myths surrounding vaccinations, which prompted some parents to withhold immunization from their children, have led to a marked increase in vaccine-preventable disease, as well as unnecessary public expenditure on research and public-information campaigns aimed at rectifying the situation

[Increasing Vaccination: Putting Psychological Science Into Action](#): *Psychological Science in the*

Public Interest, April 3, 2018

Abstract: Vaccination is one of the great achievements of the 20th century, yet persistent public-health problems include inadequate, delayed, and unstable vaccination uptake. Psychology offers three general propositions for understanding and intervening to increase uptake where vaccines are available and affordable. The first proposition is that *thoughts and feelings* can motivate getting vaccinated. Hundreds of studies have shown that risk beliefs and anticipated regret about infectious disease correlate reliably with getting vaccinated; low confidence in vaccine effectiveness and concern about safety correlate reliably with not getting vaccinated. We were surprised to find that few randomized trials have successfully changed what people think and feel about vaccines, and those few that succeeded were minimally effective in increasing uptake. The second proposition is that *social processes* can motivate getting vaccinated. Substantial research has shown that social norms are associated with vaccination, but few interventions examined whether normative messages increase vaccination uptake. Many experimental studies have relied on hypothetical scenarios to demonstrate that altruism and free riding (i.e., taking advantage of the protection provided by others) can affect intended behavior, but few randomized trials have tested strategies to change social processes to increase vaccination uptake. The third proposition is that interventions can *facilitate vaccination directly* by leveraging, but not trying to change, what people think and feel. These interventions are by far the most plentiful and effective in the literature. To increase vaccine uptake, these interventions build on existing favorable intentions by facilitating action (through reminders, prompts, and primes) and reducing barriers (through logistics and healthy defaults); these interventions also shape behavior (through incentives, sanctions, and requirements). Although identification of principles for changing thoughts and feelings to motivate vaccination is a work in progress, psychological principles can now inform the design of systems and policies to directly facilitate action.

[Memory Transmission in Small Groups and Large Networks: An Agent-Based Model:](#)

Psychological Science, November 9, 2015

The spread of social influence in large social networks has long been an interest of social scientists. In the domain of memory, collaborative memory experiments have illuminated cognitive mechanisms that allow information to be transmitted between interacting individuals, but these experiments have focused on small-scale social contexts. In the current study, we took a computational approach, circumventing the practical constraints of laboratory paradigms and providing novel results at scales unreachable by laboratory methodologies. Our model embodied theoretical knowledge derived from small-group experiments and replicated foundational results regarding collaborative inhibition and memory convergence in small groups. Ultimately, we investigated large-scale, realistic social networks and found that agents are influenced by the agents with which they interact, but we also found that agents are influenced by nonneighbors (i.e., the neighbors of their neighbors). The similarity between these results and the reports of behavioral transmission in large networks offers a major theoretical insight by linking behavioral transmission to the spread of information.

[Communicating Health Risks With Visual Aids:](#) *Current Directions in Psychological Science*, September 25, 2013

Informed decision making requires that people understand health risks. Unfortunately, many people are not risk literate and are biased by common risk communication practices. In this article, we review a

collection of studies investigating the benefits of visual aids for communicating health risks to diverse vulnerable people (e.g., varying in abilities, ages, risk characteristics, and cultural backgrounds). These studies show that appropriately designed visual aids are often highly effective, transparent, and ethically desirable tools for improving decision making, changing attitudes, and reducing risky behavior. Theoretical mechanisms, open questions, and emerging applications are discussed.