ACTION!

IMPROVED COMMUNICATION TECHNIQUES TO CONVERT INVASIVE SPECIES SCIENCE TO POLICY

LESLIE D. HARTMAN

MATAGORDA BAY ECOSYSTEM LEADER

COASTAL FISHERIES

TEXAS PARKS & WILDLIFE

BUT "THE SCIENCE SPEAKS FOR ITSELF!"

"IT IS HUMAN VALUES, MORE THAN SCIENCE AND TECHNOLOGY, WHICH CHANGE PUBLIC PERCEPTIONS. ACCEPTING THIS IS A CHALLENGE FOR THOSE SEEKING TO COMMUNICATE ~~CLIMATE~~ SCIENCE. TOO OFTEN, ***THEY ASSUME THAT THE FACTS WILL SPEAK FOR THEMSELVES*** *–* ***IGNORING THE RESEARCH THAT REVEALS HOW REAL PEOPLE RESPOND****. THAT IS A PRETTY UNSCIENTIFIC WAY OF GOING ABOUT SCIENCE COMMUNICATIONS."*

- ADAM CORNER, RESEARCH DIRECTOR FOR CLIMATE OUTREACH

NEWSCIENTIST

J Environ Manage. 2019 Jan 1;229:133-144. doi: 10.1016/j.jenvman.2018.06.047. Epub 2018 Jun 25.

The role of trust in public attitudes toward invasive species management on Guam: A case study

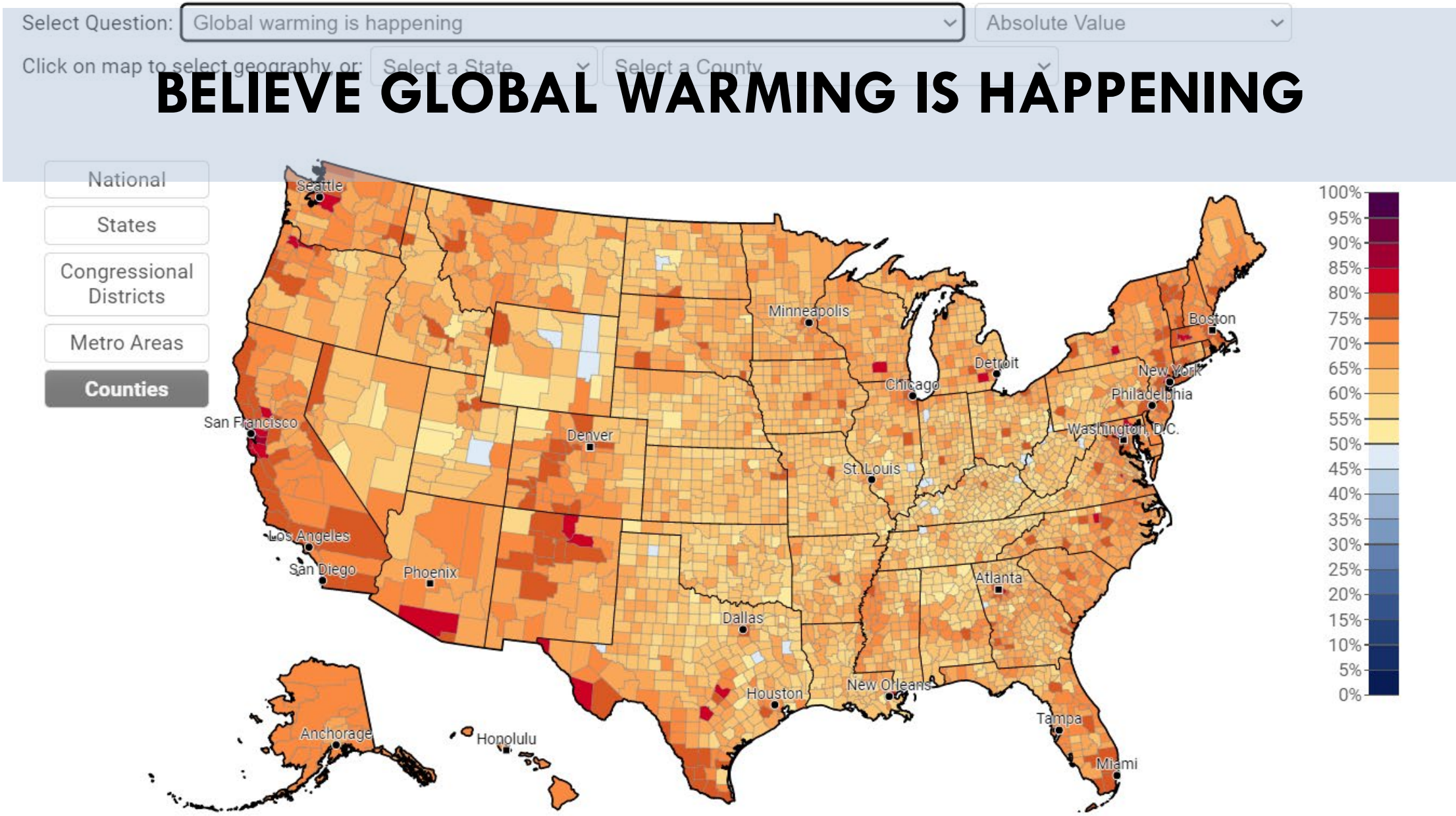
Dara M Wald [1], Kimberly A Nelson [2], Ann Marie Gawel [3], Haldre S Rogers [3]

Affiliations + expand

PMID: 29954615 DOI: 10.1016/j.jenvman.2018.06.047

- “PERCEPTIONS OF MANAGERS' TRUSTWORTHINESS, COMMUNICATION WITH MANAGERS, AND POSITIVE PERSONAL EXPERIENCES WITH MANAGERS WERE RELATED TO POSITIVE ATTITUDES ABOUT MANAGEMENT AND SUPPORT FOR EXISTING INITIATIVES, **INDICATING THE IMPORTANT ROLE OF TRUST AND ENGAGEMENT** FOR INVASIVE SPECIES MANAGEMENT.”

BELIEVE GLOBAL WARMING IS HAPPENING



Map · Feb 23, 2022

Yale Climate Opinion Maps 2021

By Jennifer Marlon, Liz Neyens, Martial Jefferson, Peter Howe, Matto Mildenberger and Anthony Leiserowitz

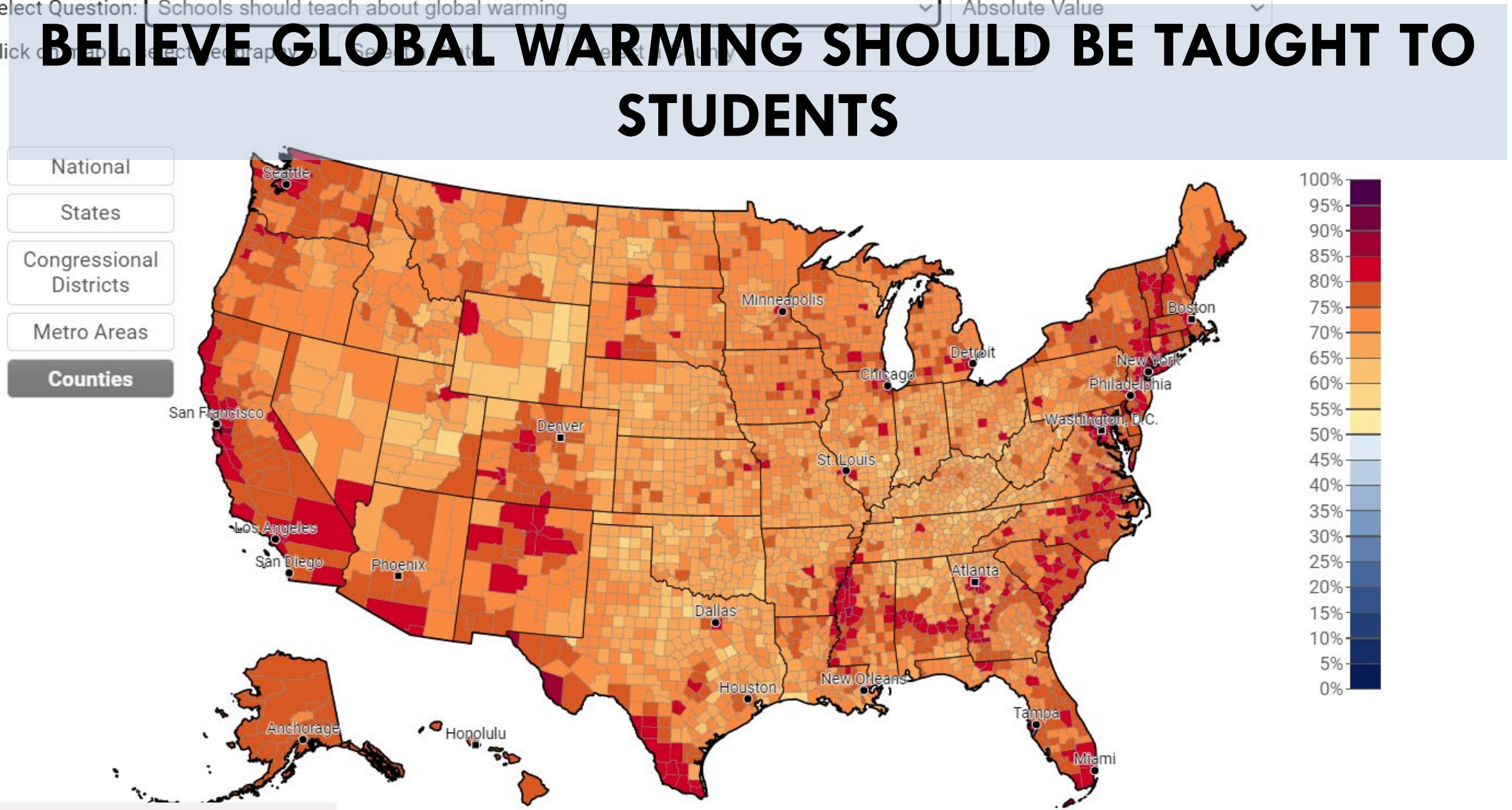
Filed under: Behaviors & Actions, Policy & Politics and Beliefs & Attitudes

UCSB UNIVERSITY OF CALIFORNIA SANTA BARBARA

YALE PROGRAM ON Climate Change Communication

UtahState University

BELIEVE GLOBAL WARMING SHOULD BE TAUGHT TO STUDENTS



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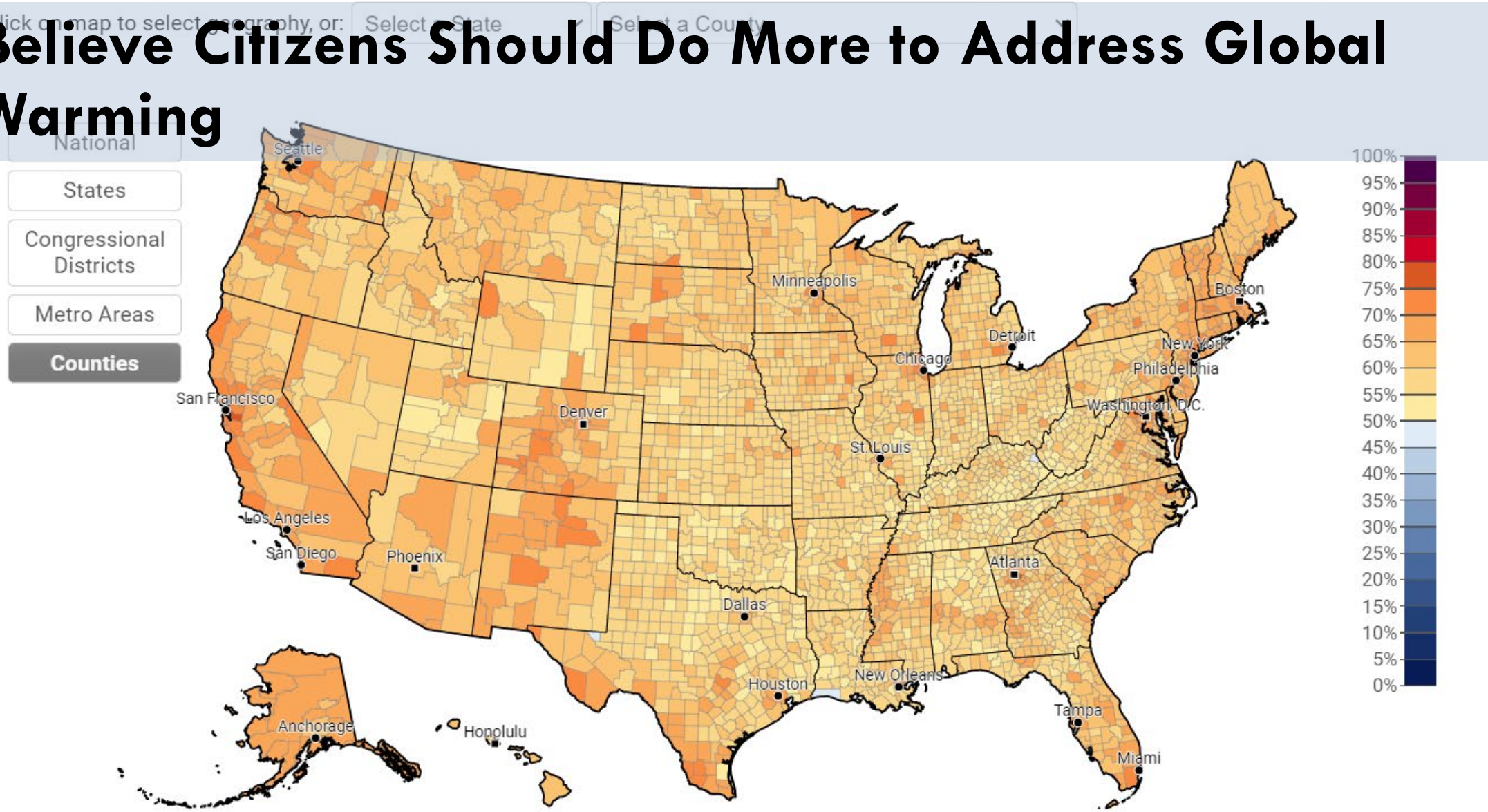
Believe Citizens Should Do More to Address Global Warming



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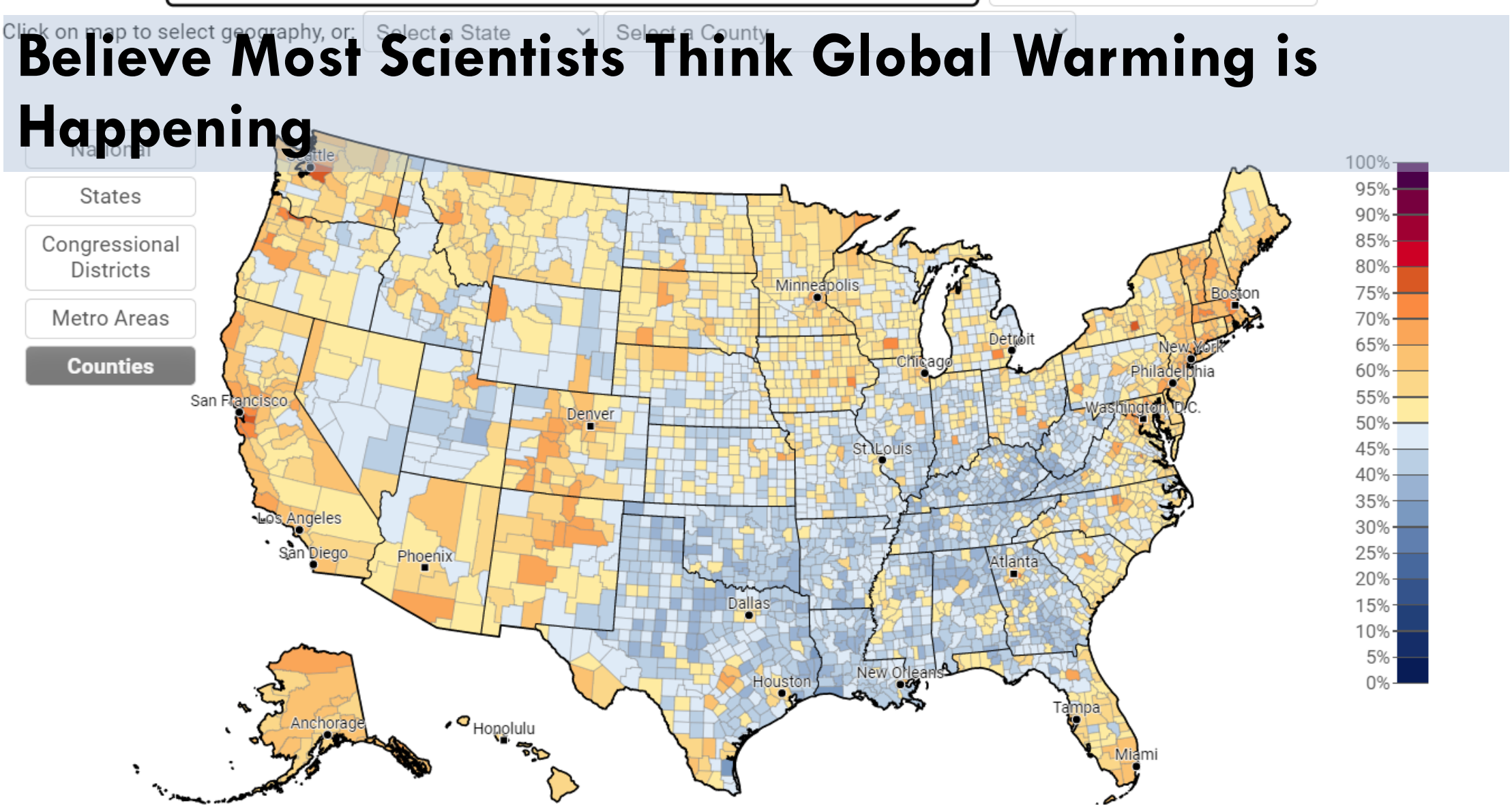
Believe Most Scientists Think Global Warming is Happening



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UCSB University of California Santa Barbara

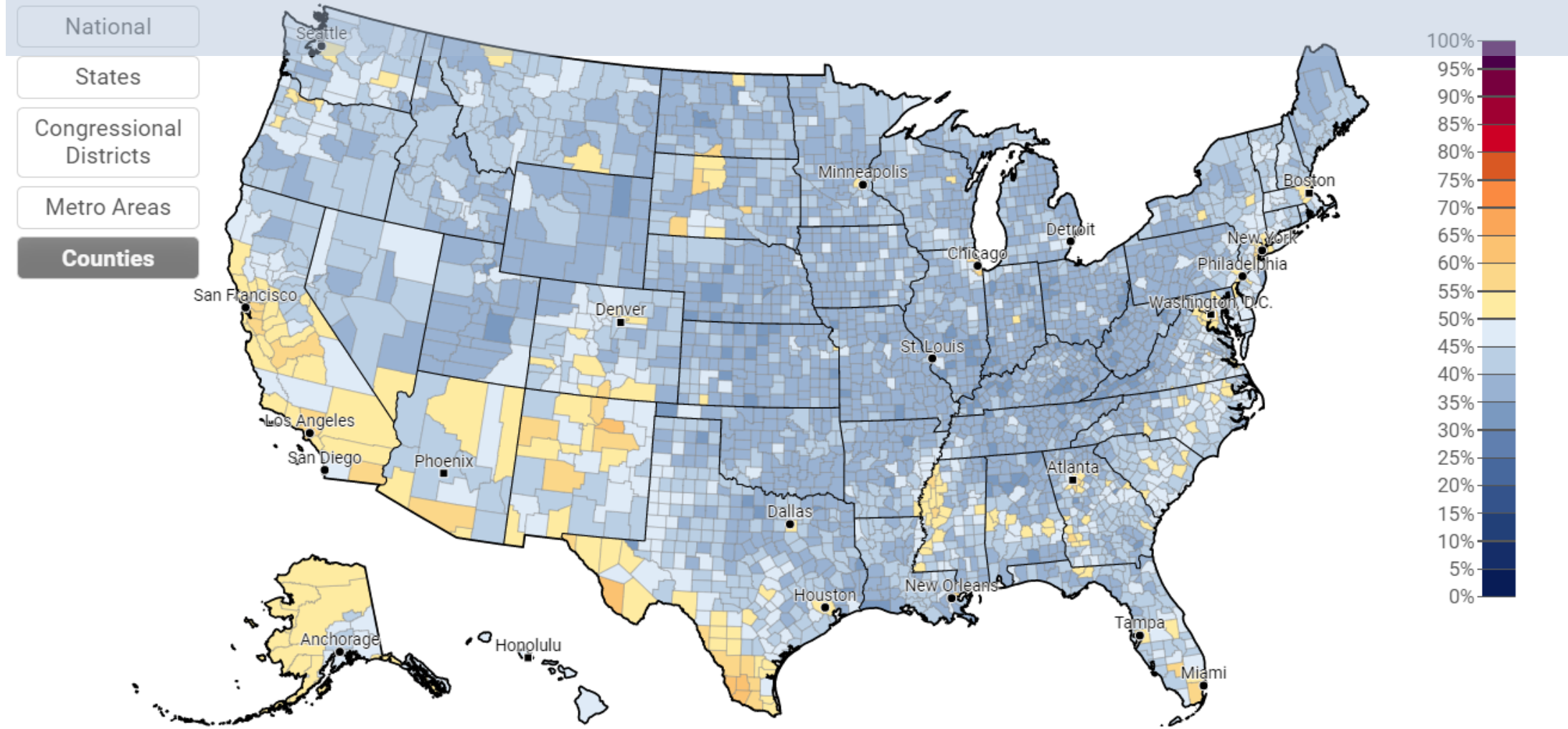
Yale Program on Climate Change Communication

Utah State University

Select Question: Global warming will harm me personally | Absolute Value

Click on map to select geography, or: Select a State | Select a County

Believe Global Warming Will Harm Me Personally



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YALE PROGRAM ON Climate Change Communication

UtahState University

KNOW YOUR AUDIENCE

Environ Manage. 2021 May;67(5):901-919. doi: 10.1007/s00267-020-01404-3. Epub 2021 Jan 12.

Moving from Latent to Manifest Problem: Trajectories Across Scientific and Public Salience of Invasive Alien Species

J Vaas [1], P P J Driessen [2], M Giezen [3], F van Laerhoven [2], M J Wassen [2]

Affiliations + expand

PMID: 33433666 PMCID: PMC8032613 DOI: 10.1007/s00267-020-01404-3

Free PMC article

Abstract

Who worries first about an invasive alien species: scientists or the general public, or do both become concerned simultaneously? Taking thirteen invasive alien species in the Netherlands, this article reconstructs the development of their public and scientific salience: the attention they attracted and the knowledge about them. Salience was assessed from the number of publications from 1997 onwards in the LexisNexis newspaper database and Scopus scientific database. Three trajectories were derived for a species to move from being a latent problem with low salience toward a manifest status with high public and scientific salience. In the most common trajectory, scientific salience increased first, followed by an increase in public salience. We probed the merit of this concept of trajectories by examining the action undertaken for a representative species of the trajectories. We assigned each of these three species a code for inertia and inaction based on the content of a hundred newspaper articles and all available government documents. Knowing the scientific and public salience of these species clarifies why the actions to deal with them differed even though from an ecological perspective they warranted similar attention. The typology of public and scientific salience and the problem trajectories developed in this article together offer a structured approach for understanding an invasive alien species and provide pointers for engaging a community in managing that species.

Keywords: Inertia; Invasive alien species; Latency; Management; Public salience; Scientific salience.


PLAYING THE FOOL

Homo sapiens neurologically wired to help solve a stated problem!

frontiers in
HUMAN NEUROSCIENCE

REVIEW ARTICLE
published: 19 September 2013
doi: 10.3389/fnhum.2013.00508

The influence of emotions on cognitive control: feelings and beliefs—where do they meet?

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The influence of emotion on higher-order cognitive functions, such as attention allocation, planning, and decision-making, is a growing area of research with important clinical applications. In this review, we provide a computational framework to conceptualize emotional influences on inhibitory control, an important building block of executive functioning. We first summarize current neuro-cognitive models of inhibitory control and show how Bayesian ideal observer models can help reframe inhibitory control as a dynamic decision-making process. Finally, we propose a Bayesian framework to study emotional influences on inhibitory control, providing several hypotheses that may be useful to conceptualize inhibitory control biases in mental illness such as depression and anxiety. To do so, we consider the neurocognitive literature pertaining to how affective states can bias inhibitory control, with particular attention to how valence and arousal may independently impact inhibitory control by biasing probabilistic representations of information (i.e., beliefs) and valuation processes (e.g., speed-error tradeoffs).

Keywords: emotion, inhibitory control, Bayesian modeling, ideal observer model

INTRODUCTION

How do feeling and thinking influence one another? From our subjective experience, and systematic behavioral research, we know that affective states profoundly influence cognitive functions, in both facilitative and antagonistic manners depending on the context. This relationship between affect and behavior is not surprising, given the extensive interactions between the physiological and interoceptive manifestation of emotion (Craig, 2002; Paulus and Stein, 2006) and cognitive control networks (Botvinick et al., 2001; Pessoa, 2009). In particular, impairments in critical executive faculties such as inhibitory control (Miyake that such a framework is readily adapted to various aspects of executive function, including attentional and inhibitory control (Yu and Dayan, 2005; Yu et al., 2009; Shenoy and Yu, 2011; Ide et al., 2013). In particular, this literature suggests that apparently distinct faculties in inhibitory control can be folded into a single framework where subtle differences in task contexts are reflected in their influence on components of the framework, giving rise to the diversity of observed behavior. Building on this research, we argue for an *emotion-aware* rational observer model of inhibitory control, where emotions serve as additional *context* for the computations underlying behavior. Indeed,

Available online at www.sciencedirect.com
SciVerse ScienceDirect
Current Opinion in Neurobiology

The neural basis of social influence and attitude change

Keise Izuma[1,2]

Human attitudes and preferences are susceptible to social influence. Recent social neuroscience studies, using theories and experimental paradigms from social psychology, have begun to elucidate the neural mechanisms underlying how others influence our attitudes through processes such as social conformity, cognitive inconsistency and persuasion. The currently available evidence highlights the role of the posterior medial frontal cortex (pMFC) in social conformity and cognitive inconsistency, which represents the discrepancy between one's own and another person's opinion, or, more broadly, between currently inconsistent and ideally consistent states. Research on persuasion has revealed that people's susceptibility to persuasive messages is related to activation in a nearby but more anterior part of the medial frontal cortex. Future progress in this field will depend upon the ability of researchers to dissociate underlying motivations for attitude change in different paradigms, and to utilize neuroimaging methods to advance social psychological theories of social influence.

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Current Opinion in Neurobiology 2013, **23**:456–460

This review comes from a themed issue on **Social and emotional neuroscience**

Edited by **Ralph Adolphs** and **David Anderson**

For a complete overview see the Issue and the Editorial

Available online 19th April 2013

0959-4388/$ – see front matter,

http://dx.doi.org/10.1016/j.conb.2013.03.009

Introduction

Attempts to influence or change another person's attitudes are pervasive in all societies. These attempts range in scale from daily interactions with friends, to corporate advertising and political campaigns. How an individual's attitude or preference is altered by social influence has long been a central topic in social psychology [1,2], and past behavioral studies have identified a variety of processes by which an individual's attitude is modulated.

Recent studies in social neuroscience have begun to shed light on the neural mechanisms underlying such social influence and attitude change. This review focuses on human social neuroscience research and summarizes recent findings that show neural processes of attitude/preference change induced by three processes: first, social conformity (attitude change to match group opinions), secondly, cognitive consistency motivation (attitude change to reduce cognitive dissonance), and thirdly, persuasion (attitude change in response to persuasive messages).

Social conformity

Social conformity refers to changing one's attitudes, beliefs or behaviors to match group norms that are implicitly or explicitly shared by a group of individuals [3]. Its effect has been well documented in social psychology experiments, and people sometimes conform to a group opinion even if the opinion is clearly wrong [4].

Berns *et al.* [5] was the first to examine the neural processes underlying social conformity using a neuroimaging method (functional magnetic resonance imaging; fMRI). In this study, while subjects performed a mental rotation task, they were shown a response from a group of peers. Responses from peers were sometimes wrong in order to induce conforming behavior. This experimental situation is similar to Asch's original conformity study [4], and the study provided initial evidence for changes in basic perceptual processes during social conformity (differential activity in an occipital–parietal network). Khachaer *et al.* [6] used a face attractiveness rating task and tested how subjects' ratings were influenced by others' ratings. They found that when a subjects' rating conflicted with the group rating, the posterior medial frontal cortex (pMFC) [7] (Figure 1) and insula, among other regions, were more activated than when the subject's rating matched the group rating (Figure 2a). Furthermore, activations in these regions were significantly associated with subsequent change in self-report attractiveness ratings. Another study [8] also reported heightened activation in the pMFC and insula when the subject's own preference was mismatched with two experts' preferences for pieces of music, an effect especially marked for those who exhibited a stronger tendency to conform to other people's opinions. Similarly, Berns *et al.* [9] reported that those who have a stronger conformity tendency showed higher activations in pMFC and insula when other people's opinions were shown, regardless of the degree of the mismatch. A transcranial magnetic stimulation (TMS) study further demonstrated that the pMFC plays a critical role in social conformity [10••].

In contrast to pMFC activation in response to the discrepancy between a subject's ratings and group ratings,

BRILL *Behaviour 151 (2014) 283–296* **Behaviour** brill.com/beh

The neurobiological platform for moral values

Patricia S. Churchland *
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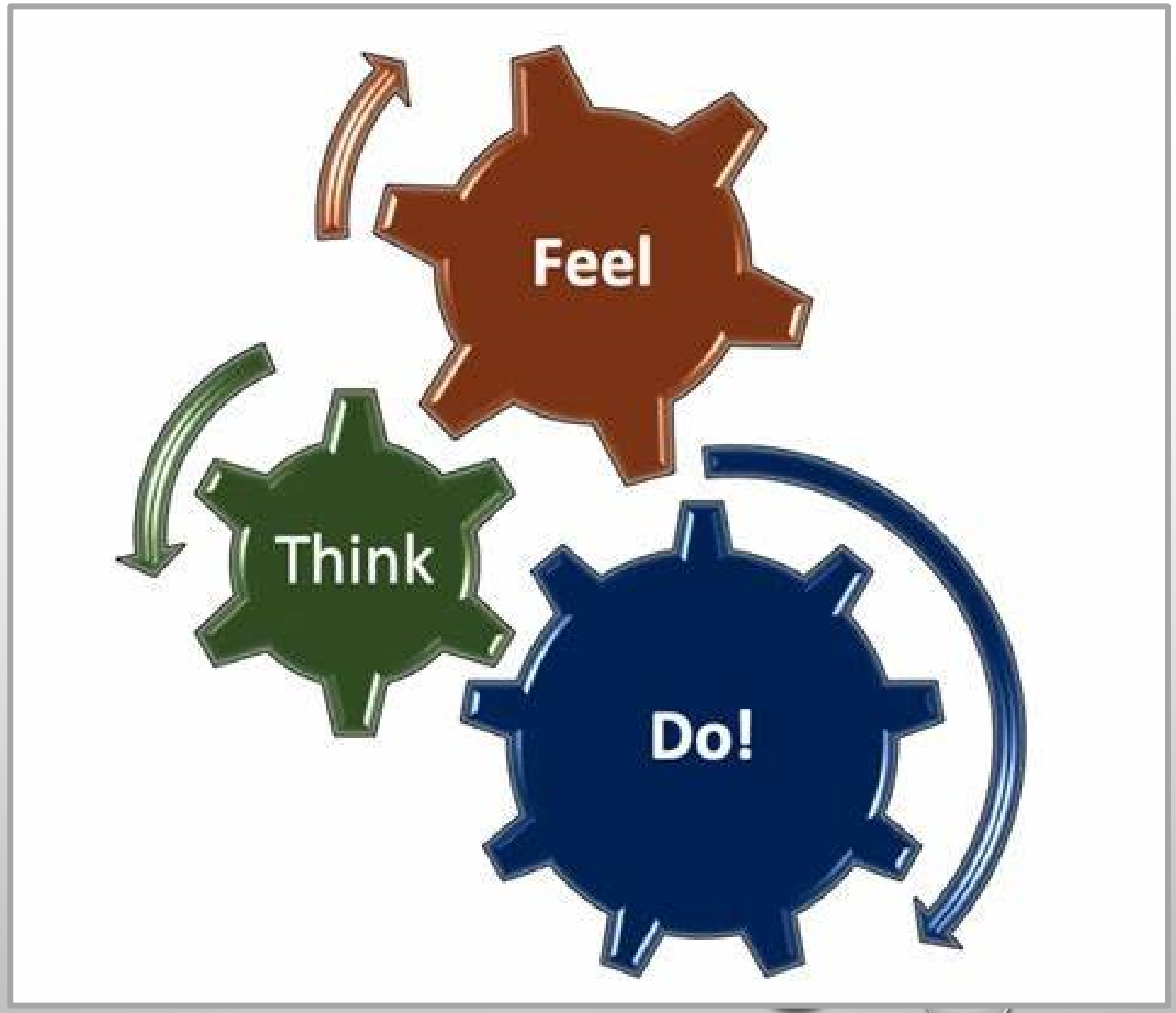
Accepted 8 October 2013; published online 27 November 2013

Abstract
What we humans call ethics or morality depends on four interlocking brain processes: (1) caring (supported by the neuroendocrine system, and emerging in the young as a function of parental care); (2) learning local social practices and the ways of others — by positive and negative reinforcement, by imitation, by trial and error, by various kinds of conditioning, and by analogy; (3) recognition of others' psychological states (goals, feelings etc.); (4) problem-solving in a social context. These four broad capacities are not unique to humans, but are probably uniquely developed in human brains by virtue of the expansion of the prefrontal cortex (this formulation is based on Chapter 1 of my book, *Braintrust*: *What neuroscience tells us about morality*).

Keywords
morality, oxytocin, vasopressin, hypothalamus, epigenetics.

1. Where do values come from?[1]

Values are not in the world in the way that seasons or the tides are in the


Feel
Think
Do!

ABT

A STORY TELLING METHOD

ABT (AND, **BUT**, THEREFORE)

- STEP 1: BUT WHAT IS YOUR PROBLEM?
  - SINGLE NARRATIVE
  - ACTUAL PROBLEM
    - *NEAR-SHORE BALLAST RELEASES INTRODUCE INVASIVES*

    OR

    LAWS ALLOW NEAR-SHORE BALLAST RELEASE
  - IMPEDIMENTS
    - *EX. WHY IS NEAR-SHORE BALLAST RELEASE ALLOWED*

ABT (AND, BUT, THEREFORE)

- STEP 2: AND - FIX YOUR SET UP
  - WHAT - SIMPLE, UNIFYING, INTRODUCTORY, ORDINARY DESCRIPTION
    - RELATABLE TO PUBLIC
    - UNIVERSAL* AGREEMENT
  - WHY - WHAT'S AT STAKE (A.K.A. WHY SHOULD WE CARE)?
    - SPECIFICS MATTER
      - WHAT WILL BE LOST!
        - EMOTIONAL

ABT (AND, BUT, **THEREFORE**)

- STEP 3: THEREFORE – CONTRAST CAPTURES ATTENTION
  - MAXIMIZE CONTRAST
    - CALM TO EXCITED
  - TWO MOVEMENTS (WHAT TO HOW)
    - WHAT – THE OVERALL STATEMENT
    - HOW – PROCESS THAT CAUSED IT

ASSEMBLING THE STORY

- (ORDINARY WORLD) AND (WHAT'S AT STAKE, MAYBE USE IF/THEN STRUCTURE), BUT (WHAT), (HOW), THEREFORE (WHAT), (HOW)

YEAH, BUT SCIENCE…

- "*I MIGHT HAVE TO RECONSIDER MY POSITION [ON CLIMATE CHANGE]*"
  - AND – ACKNOWLEDGEMENT (=RESPECT)
  - BUT - RELATABLE ANECDOTES
  - THEREFORE – VALID ISSUE

TEDTALKS


effectively
WHO SPEAKS FOR SCIENCE?