Background Materials

Session Title: A Look at How Judges Encounter Neuroscience with a “Deep Dive” into the Topic of Implicit Bias and Its Impact on Jury/Judicial Decision Making

Date: Tuesday, October 6, from 9:35 to 11:00 am

Location: Sheraton Seattle Hotel, 1400 6th Ave, Seattle, WA 98101

Description:

This panel will introduce recent and exciting developments at the intersection of neuroscience and law. Neuroscience is increasingly introduced in courtrooms, and considered in policy debates. These developments create a pressing need for increased dialogue between neuroscience and law, and this panel brings together neuroscientists and lawyers to enable that conversation. The panel will provide an introduction to brain science, an introduction to how that neuroscience is already being used in the courtroom, and how neuroscience can inform our understanding of racial bias and interracial interactions. The panel draws in part on work by the Research Network on Law and Neuroscience, supported by the John D. and Catherine T. MacArthur Foundation, and based at Vanderbilt Law School. Additional information on the Network, including extensive educational materials, is available online at: www.lawneuro.org.

Panelist Bios:

Dr. Eric Chudler is a research neuroscientist interested in how the brain processes information about pain and nociception. He is also interested in the neuroactive properties of medicinal plants and herbs. Eric received his Ph.D. from the Department of Psychology at the University of Washington in Seattle in 1985. He has worked at the National Institutes of Health in Bethesda, MD (1986-1989) and in the Department of Neurosurgery at Massachusetts General Hospital in Boston, MA (1989-1991). He is currently a research associate professor in the Department of Bioengineering and executive director of the Center for Sensorimotor Neural Engineering. He is also a faculty member in the Department of Anesthesiology & Pain Medicine and the Graduate Program of Neurobiology and Behavior at the University of Washington. In addition to performing basic neuroscience research, Eric works with other neuroscientists and classroom teachers to develop educational materials to help K-12 students learn about the brain. His award-winning web site, Neuroscience for Kids, is used by students and teachers around the world.
**Dr. Jennifer Richeson** is the John D. & Catherine T. MacArthur Professor of Psychology at Northwestern University, where she is also a Faculty Fellow at the Institute for Policy Research and Professor of African American Studies. She received a Sc.B from Brown University, and a MA and Ph.D. in social psychology from Harvard University. Prior to joining Northwestern University in 2005, she taught in the Department Psychological and Brain Sciences at Dartmouth College, and was a visiting fellow at Stanford University's Research Institute of Comparative Studies in Race and Ethnicity. Professor Richeson’s research examines psychological phenomena related to cultural diversity. Her work generally considers the ways in which sociocultural group memberships such as race, gender, and socio-economic status shape the way people think, feel, and behave, especially during interactions with members of different sociocultural groups. Professor Richeson’s work has been published in various scholarly journals, including *Psychological Science*, *Nature Neuroscience*, and *Journal of Experimental Social Psychology*, as well as appearing in popular publications such as *The Economist* and *The New York Times*. In 2009 she received the Distinguished Scientific Award for Early Career Contributions to Psychology from the American Psychological Association (APA), and in 2006 she was named one of 25 MacArthur “Genius” Fellows for her work as a leader in “highlighting and analyzing major challenges facing all races in America and in the continuing role played by prejudice and stereotyping in our lives.” Through her research and teaching, Professor Richeson hopes to contribute to a better understanding of intergroup relations, as well as to elucidate pitfalls in current approaches to managing diversity.

**Dr. Francis X. Shen** is the Executive Director of Education and Outreach activities for the *MacArthur Foundation Research Network on Law and Neuroscience*, and a McKnight Land-Grant Professor and Associate Professor of Law at the University of Minnesota. Professor Shen conducts empirical and interdisciplinary research at the intersection of law and the brain sciences. He has co-authored the first law coursebook on *Law and Neuroscience* (Aspen Publishers, 2014), and has explored the implications of cognitive neuroscience for criminal law, tort, and legislation in the United States. Additional research areas of focus are criminal law and crime policy, and education law and policy. Professor Shen completed his B.A. in Economics and in English at the University of Chicago in 2000, his J.D. at Harvard Law School in 2006, and his Ph.D. in Government and Social Policy at Harvard University and the Kennedy School of Government in 2008. During graduate school he was a doctoral fellow in the Harvard University Multidisciplinary Program in Inequality & Social Policy, supported by the National Science Foundation. His research has been published in a variety of outlets in law, political science, psychology, and education, and he has co-authored two books, *The Education Mayor* (Georgetown, 2007) and *The Casualty Gap* (Oxford, 2010). In 2009 he joined the MacArthur Foundation Law and Neuroscience Project, at the University of California Santa Barbara, as a post-doctoral research fellow. In 2010-11 he became associate director of the Project and a visiting scholar at Vanderbilt Law School. In 2011-12 he was a visiting assistant professor at Tulane University Law School and The Murphy Institute.
The Mission and History of the Research Network on Law and Neuroscience

The Research Network on Law and Neuroscience, supported by the John D. and Catherine T. MacArthur Foundation, addresses a focused set of closely-related problems at the intersection of neuroscience and criminal justice: 1) determining the law-relevant mental states of defendants and witnesses; 2) assessing a defendant’s capacity for self-regulating his behavior; and 3) assessing whether, and if so how, neuroscientific evidence should be admitted and evaluated in individual cases.

The Research Network is an interdisciplinary collaborative initiative with two main goals: (1) to help the legal system avoid misuse of neuroscientific evidence in criminal law contexts, and (2) to explore ways to deploy neuroscientific insights to improve the fairness and effectiveness of the criminal justice system.

The MacArthur Foundation laid the cornerstones for the Network by drawing together several dozen of the nation’s top researchers beginning in 2007 to conduct a coordinated and comprehensive investigation of basic issues at the intersection of law and neuroscience, funded by a four-year grant. In 2011, the new MacArthur Foundation Research Network on Law and Neuroscience began to build on those cornerstones with an interconnected program of research with three foci: Mental States, Development, and Evidence.

The Network’s Education and Outreach Activities

A central component of the Network’s mission is Education and Outreach to the legal community. The centerpiece of these Education and Outreach activities is the Network’s Introduction to Law and Neuroscience curriculum, which is presented through events for judges, lawyers, and others in the legal and criminal justice communities. To date, the Network and its members have introduced over 350 judges to law and neuroscience. The Colloquium for Federal Judges on Law, Neuroscience, and Criminal Justice, developed in collaboration with the Federal Judicial Center and The Gruter Institute, utilizes this curriculum, as adapted specifically for federal judges in the context of criminal justice and sentencing.

In addition to these events, the Network engages in a variety of additional educational activities, including:

- Distribution of introductory neurolaw materials online at: www.lawneuro.org;
- Maintenance of a publicly-accessible Law and Neuroscience Bibliography;
- Dissemination of Network research findings through Knowledge Briefs;
- Publication of the first Law and Neuroscience coursebook, Aspen Publishers (2014);
- Publication of A Primer on Criminal Law and Neuroscience, Oxford University Press; and
- Co-sponsorship of Neuroscience Boot Camp at the University of Pennsylvania’s Center for Neuroscience and Society.
The Curriculum: Introduction to Law and Neuroscience

The Research Network has designed a curriculum to introduce neuroscience in a legally relevant way for judges, lawyers, and other actors in the legal system. The curriculum, which encourages discussion and debate between participants and presenting faculty, emphasizes the real-world connections that judges and lawyers are already making between neuroscience and law. The primary objectives of the program are to:

- enable participants to ask the right questions when confronted with neuroscientific evidence;
- reflect on legal doctrine and practice in light of emerging neuroscience research on legally relevant questions;
- improve the legal system through dissemination of Network research that may aid legal fact-finding and adjudication; and
- strengthen neuroscience research by learning from participants how research can become more legally relevant and ecologically valid.

In these ways, the program is not simply a dissemination of information, but rather a dialogue between faculty and audience participants about the current status and future possibilities of neurolaw.

To meet these objectives, the full curriculum covers the following topics:

1. Brain Basics: How does the human brain work?
2. Brain and Behavior: What is the relationship between mind, brain, and behavior?
3. Limits and Cautions: What do brain scans really tell us?
4. Admissibility: How should the admissibility of neuroscientific evidence be assessed?
5. The Violent Brain: Why do some individuals become violent, and can we know who will be violent in the future?
6. The Adolescent Brain: How does the brain develop, how developed is the adolescent brain, and what are the legal implications that follow?
7. The Addicted Brain: Why do people become addicted, how does this affect decision making, and what are the legal implications?
8. The Emotional Brain: How does emotion affect our decision making?
9. The Injured Brain: How does brain injury affect behavior and mental functioning?
10. The Remembering Brain: How does human memory work and can neuroscience tools detect memories?
11. The Lying Brain: Can brain science uncover lies?
12. The Future: What future developments in neuroscience will be most salient for law?

This session provides a small subset of this larger program.
Presentation 1: A Brief Introduction to Law and Neuroscience

Faculty: **Dr. Francis X. Shen**, McKnight Land-Grant Professor; Associate Professor of Law, University of Minnesota; Executive Director of Education and Outreach, MacArthur Foundation Research Network on Law and Neuroscience

**Description and Learning Objectives:** The first part of the session will provide a concise introduction to how neuroscience is presently being used for legal purposes, and how it may be used in the future. Dr. Shen will lead this portion of the seminar, and will address both the promises and perils of neuroscience in the courtroom. After this part of the seminar, participants will be able to:

- Appreciate the emerging field of neurolaw, and the many ways in which neuroscience might affect law.
- Understand the ways in which neuroscience is being proffered as evidence in criminal and civil contexts.
- Recognize basic concerns about the use of neuroscientific evidence in courtroom proceedings.
- Discuss the promises and limitations of future uses of neuroscience in law.

For additional background and reference, we recommend:

Presentation 2: Neuroscience for All

Faculty: Dr. Eric H. Chudler, Executive Director, Center for Sensorimotor Neural Engineering; Research Associate Professor, Department of Bioengineering, University of Washington

Description and Learning Objectives: Neuroscientific evidence is increasingly being proffered in U.S. courtrooms. This first part of the panel will provide a concise and readily accessible introduction to human brain structure, brain function, and how structure and function are studied through modern neuroimaging techniques. Following this session, participants will be able to:

- Recognize the general organization of the human nervous system, and the terms used in science and medicine to describe basic brain locations and structures.
- Describe how neurons communicate with one another, how this communication is related to human thought and behavior, and some of the methods employed in modern neuroscience research to study the activity of neurons in humans.
- Discuss how the brain enables higher cognitive functions, and some of the ways in which those functions can become impaired.

For additional background and reference, we recommend:

- Dr. Chudler’s award-winning web site for Neuroscience for Kids [http://faculty.washington.edu/chudler/neurok.html](http://faculty.washington.edu/chudler/neurok.html)
- Neuroscientist Geoff Aguirre’s presentations introducing neuroscience, available online at: [https://cfn.upenn.edu/aguirre/wiki/lab_presentations](https://cfn.upenn.edu/aguirre/wiki/lab_presentations), including “Brain Imaging: Reality and Hype,” a four-part introductory course on fMRI, and “What Lurks Behind the Brain Image: Differentiating Neuroscience from Neuro-Bunk.”
- Owen D. Jones, Jeffrey D. Schall, & Francis X. Shen, “Fundamentals of Cognitive Neuroscience” Chapters (Brain Function and Brain Structure; Brain Monitoring and Manipulation; Limits and Cautions), Chapters 7-9 in *LAW AND NEUROSCIENCE* (2014).
Presentation 3: Implicit Racial Bias: Mind, Brain, & Behavior

Faculty: Dr. Jennifer Richeson, John D. & Catherine T. MacArthur Professor of Psychology, Faculty Fellow at the Institute for Policy Research and Professor of African American Studies, Northwestern University

Description and Learning Objectives: This third part of the panel will present research on race bias and the psychology of interracial relations, with discussion about how these findings may be relevant to the criminal justice system. Dr. Richeson will lead this portion of the seminar, and will review recent research in psychology and neuroscience. After this part of the seminar, participants will be able to:

- Discuss the concepts of implicit bias and racial anxiety, and appreciate how they may affect decision-making within the legal system.
- Understand the cognitive, affective, and behavioral dynamics of interracial contact, and the prospects for positive outcomes for both interaction partners.
- Describe successful strategies for improving interracial relations.

For additional background and reference, we recommend:

- Sophie Trawalter, Andrew Todd, Abigail A. Baird, & Jennifer A. Richeson, Attending To Threat: Race-Based Patterns of Selective Attention, 44 JOURNAL OF EXPERIMENTAL SOCIAL PSYCHOLOGY 1322 (2008).
- Jerry Kang, Judge Mark Bennett, Devon Carbado, Pam Casey, Nilanjana Dasgupta, et. al., Implicit Bias in the Courtroom, 59 UCLA L. REV. 1124 (2012).
Presentation 1: A Brief Introduction to Law and Neuroscience

Faculty: Dr. Francis X. Shen, McKnight Land-Grant Professor; Associate Professor of Law, University of Minnesota; Executive Director of Education and Outreach, MacArthur Foundation Research Network on Law and Neuroscience
A brief introduction to:
Law and Neuroscience

Dr. Francis X. Shen, JD, PhD
University of Minnesota Law School
MacArthur Foundation Research Network on Law
and Neuroscience

October 6, 2015

American Judges Association &
National Association of State Judicial Educators

Shen Neurolaw Lab
Every story is a brain story
www.fxshen.com
1) Law and Neuroscience: Why?

2) The past: The Overlooked History of Neurolaw

3) The present: The Brain takes Center Stage

4) The future: What next?
The (Overlooked) History of Neurolaw
:: Looking forward by looking back

1933 (1949) 1973 2013

What Is Epilepsy?

"The human brain is the source of all human epilepsy."

A person is diagnosed with epilepsy if they have had at least two seizures that were not caused by some known and reversible medical condition like alcohol withdrawal or extremely low blood sugar. The seizures in epilepsy may be related to a brain injury or a family tendency, but often the cause is completely unknown. The word "epilepsy" does not indicate anything about the cause of the person's seizures or their severity.
:: Growth Of Neurolaw Scholarship

Number of Articles, Books, and Book Chapters published in Law and Neuroscience, by publication date, 1984-2013

Cumulative Total of Law and Neuroscience Publications: 1984-2013

Case Study: Neuroimaging and Criminal Defendants
:: Attorney Stephen Cobb (Florida criminal defense attorney)

https://youtu.be/opu-o6ehlUM

Neuroscientific Evidence In Court
:: Culpability and Mitigation
www.vanderbilt.edu/lawbrain

Contents:

- The criminal brain (and psychopathy, prediction)
- Evidentiary admissibility
- Brain death
- Brain injury, Pain and distress
- Mental Health
- The thinking and feeling brain:
  - Memory
  - Emotion
  - Impulsive and Risky Decision-Making
- Lie Detection
- Decision-Making and Judging
- Special populations
  - The baby brain
  - The adolescent brain
  - The aging brain
  - The addicted brain
  - The veteran's brain
- Neuroethics
- International perspectives
- The intersection of neuroscience and genetics
- Cognitive Enhancement
- Brain-Machine Interface and Neuromodulation
- Artificial Intelligence and Robotics
Neuroscience Narratives
:: Topics covered by brain bills

- Alzheimer's
- Autism
- Brain Death
- Brain Injury
- Civil Commitment
- Crime Victims
- Criminal Defense
- Early Childhood
- Education
- End of Life
- Foster Care
- Health Care
- Juvenile Justice
- Mental Health
- Military Veterans
- Neonatal
- Parkinson's
- Parole
- Post Traumatic Stress Disorder
- Privacy
- Sex Offenders
- Shaken Baby Syndrome
- Special Education
- Sports Concussions
- Toxins
- Veterans Courts
Presentation 2: Neuroscience for All

Faculty: Dr. Eric H. Chudler, Executive Director, Center for Sensorimotor Neural Engineering; Research Associate Professor, Department of Bioengineering, University of Washington
Science (Neuroscience) Literacy

The public is fascinated by the brain. We ALL must be able to evaluate this information.
Science (Neuroscience) Literacy
Can we separate FACT from FICTION?

Functions of the Nervous System?

The Senses:
- see, hear, smell, taste, touch

Emotions:
- happiness, sadness, anger

Movement:
- muscle control

Automatic responses:
- heart rate, breathing

Cognition
- think, plan, problem solve

Language
- speech, reading, writing
Composition of the Nervous System?

Water (78%), lipids/fats (10%) and protein (8%).

Two main types of brain cells:
Nerve Cells (Neurons) - communicate with other neurons; store information
Glial Cells (Glia) - support, insulation, clean-up (made of lipid [fat])

Composition of the Nervous System?

Cerebrospinal Fluid

- Protection
- Buoyancy
- Excretion of waste products
- Endocrine medium for the brain
Divisions of the Nervous System

Central Nervous System
- Brain
- Spinal Cord

Peripheral Nervous System
- Nerves

External Features

Front

Top

Back

Bottom

Top View

Side View
Cerebral Cortex

Controls information processing; wrinkled to increase surface area

Composed of 8 lobes (4 on each side)

Brain Areas are Specialized for Different Functions
Lobes of the Brain

Frontal Lobe                             Parietal Lobe
Temporal Lobe                                   Occipital Lobe

Brain Areas are Specialized for Different Functions
The Brain

Brain Size

Adult human brain weight = 1.4 kg (~3 lb)

Brain/Body Ratio

Speaking of Neuroscience

Origin of brain words from Greek and Latin.

Amygdala = Almond

Arachnoid = Spider web

Dendrite = Tree

Cochlea = Snail shell
The Neuron

How Does the Brain Compute?

A nerve cell, or a neuron, consists of many different parts.
The Neuron

How many neurons are in the brain?

~100,000,000,000

How is Information Transmitted?

If neurons do not touch, how can information get from one neuron to the next neuron?
Comparative Neuroanatomy

Choices
Cat
Sheep
Human
Monkey
Dolphin
Chimpanzee

Think about it.
Use it!
Presentation 3: Implicit Racial Bias: Mind, Brain, & Behavior

Faculty: **Dr. Jennifer Richeson**, John D. & Catherine T. MacArthur Professor of Psychology, Faculty Fellow at the Institute for Policy Research and Professor of African American Studies, Northwestern University
Implicit Racial Bias: Mind, Brain, & Behavior

Jennifer A. Richeson, PhD
Department of Psychology & Institute for Policy Research
Northwestern University
MacArthur Foundation Research Network on Law & Neuroscience

Today’s Talk

• The Problem
• Science of Automatic Bias
• Bias in the Brain
• Combatting Bias
Part I

The Problem
Young black males ... were at a far greater risk of being shot dead by police than their white counterparts – 21 times greater.

MARYLAND INCARCERATION RATES BY RACE/ETHNICITY, 2010

(Number of people incarcerated per 100,000 people in that group)

Source: Calculated by the Prison Policy Initiative from U.S. Census 2010 Summary File 3. Incarcerated populations include those in all types of correctional facilities in states, including federal and state prisons, local jails, halfway houses, etc. Statistics for White are for Non-Hispanic Whites.
The Problem
*It's not just perceived bias*

- Black males are 6 times more likely to be incarcerated than White males (Bureau of Justice Statistics)
- Likelihood of jail time is higher for Black males for equal offenses
- Hispanic and Black males receive longer sentences than White males for equivalent crimes
- Inmates with more Afrocentric features received harsher sentences than those with less Afrocentric features

There is abundant evidence that unintended race bias influences legal decisions

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**Part II**

*Automatic Racial Bias*
Categorization

- Categorization facilitates information processing and interactions.

- Basic categories such as age, sex, race/ethnicity are often activated automatically (Brewer, 1988).

CATEGORIZATION → STEREOTYPING

“old person”
“senior”
“elderly”

“slow”
“conservative”
“sickly”
“wise”
“nurturing”
CATEGORIZATION ———> STEREOTYPING

“young black male”

“dangerous”
“criminal”
“threatening”
“athletic”
“musical”
Looting v. Finding Food

"pictures in our heads"

Walter Lippmann
CATEGORIZATION → STEREOTYPING

“young black male”

“dangerous”
“criminal”
“threatening”
“athletic”
“musical”

CATEGORIZATION ← STEREOTYPING

“young black male”

“dangerous”
“criminal”
“threatening”
“athletic”
“musical”
Imagine....

• A terrorist

Imagine....

• An undocumented immigrant
<table>
<thead>
<tr>
<th>Explicit</th>
<th>Implicit/Automatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aware</td>
<td>Unaware</td>
</tr>
<tr>
<td>Controllable</td>
<td>Uncontrollable</td>
</tr>
<tr>
<td>Intentional</td>
<td>Unintentional</td>
</tr>
<tr>
<td>Endorsed</td>
<td>No endorsement</td>
</tr>
</tbody>
</table>
Explicit Beliefs

• Assesses ease of association of group memberships with positive and negative concepts.

• Well-learned associations are easier to make (and faster) than new, unlearned associations.
  – Dog & Cat v. Dog & Chair

• Stereotypical associations, bias-congruent associations easy (and, thus) fast to make

• Test the strength of an association by how quickly individuals can make them.

Implicit Association Test (IAT)

• Assesses ease of association of group memberships with positive and negative concepts.

• Well-learned associations are easier to make (and faster) than new, unlearned associations.
  – Dog & Cat v. Dog & Chair

• Stereotypical associations, bias-congruent associations easy (and, thus) fast to make

• Test the strength of an association by how quickly individuals can make them.
Race–Evaluation IAT

How quickly do you think of negative concepts after seeing a photograph of a black male?

How quickly do you think of positive concepts?

• Implicit Association Test (found at Project Implicit)

• Measures time differences between “stereo-consistent pairings” and “stereo-inconsistent pairings”
Typical Results in US

Time to complete task (in seconds)

Black+Unpleasant / White+Pleasant
Black+Pleasant / White+Unpleasant

Category Pairing

Implicit Preference for “Whites” over “Blacks”

White Ps
N = 46,789

Black Ps
N = 5,746

Frequency

- 884 0 1386

87.9%

- 880 0 1333

48.3%
Automatic “Pro-white” Bias in white Children

Baron & Banaji (2006)

Implicit and Explicit Racial Attitudes and Stereotypes

BY AGE DECADE

Source: Nosek et al. 2007
Compiled by Sean McElwee
Automatic Stereotypes & Biases: Resistant to Change

• Stereotypes/bias “guard” categories.

• Reluctance to admit “counter-stereotypical” & “counter-emotive” members to the group.

• Are disliked whites and admired blacks racially categorized more slowly than admired whites and disliked blacks?

What race are these individuals? White or Black?

[Images of individuals: John F. Kennedy, Martin Luther King Jr., Bob Marley, Barack Obama]

Richeson & Trawalter (2005)
Racial Categorization Latencies

Richeson & Trawalter (2005)

Automatic Stereotypes & Biases: Resistant to Change

- Stereotypes/bias “guard” categories.
- Makes it hard to break the strong connection between categories and stereotypes or affective reactions.
Example: History, Memory & Implicit Bias

Race – Animal Associations

1850s
Race – Animal Associations

Stereotypical associations can affect basic processes of the senses.
– what we see
– what we hear

Face Priming (Slow Motion)
Levels of Degradation

Animal Detection

Goff, Eberhardt, Williams, & Jackson (2008)
Animal Priming Promotes Racial Bias

Ape Priming (Slow Motion)
CATEGORIZATION ← STEREOTYPING

“young black male”

“dangerous”
“criminal”
“threatening”
“athletic”
“musical”

Who counts as a child?
Part II: Summary

- Stereotypes & bias can and often do operate outside of awareness (unconsciously).
- Automatic/unconscious forms of bias impact:
  - judgments of others' behavior & intentions
  - who we include (psychologically) in the categories we form
  - basic processes of the human senses
  - how we behave

Part III

Racial Bias in the Brain
Race Bias in the Brain
Towards a neural model of race bias

Lateral PFC

ACC

Amygdala

Amygdala
Amygdala known to respond to emotional stimuli.

- Processes fearful and anxiety-producing stimuli (Davis, 1992; LeDoux, 1998)

- Differentially active in response to individuals of one’s own race compared with members of a different race. (Hart et al., 2000; Wheeler & Fiske, 2005).

IAT Bias Scores & Amygdala Activity

Phelps et al. (2000)
Control in the Brain

- **Exerts cognitive control over automatic responses & reactions.**
- **Regulates automatic bias in a manner consistent with conscious attitudes.**

- **Detects need for regulation of automatic responses**
- **Detects conflict between automatic tendencies & intended response.**

**Lateral PFC**
- Exerts cognitive control over automatic responses & reactions.
- Regulates automatic bias in a manner consistent with conscious attitudes.

**Anterior Cingulate Cortex**
- Detects need for regulation of automatic responses
- Detects conflict between automatic tendencies & intended response.
Neural Activity in Pre-frontal Cortex

IAT bias predicts neural activity to black faces

Richeson et al. (2003), Nature Neuroscience

$r = .53$
Part III: Summary

• Efforts to combat the influence of stereotypes and bias once activated often futile.

• Neural responses to stereotyped groups expose both the activation of stereotypes & efforts to control bias.

• Control efforts are cognitively costly and take time.
Part IV

Combatting bias

Declining Explicit Racial Bias

from Schuman et al., 1997
Bias Regulation Efforts

- Distraction/Avoidance
- Suppression/Control
- Perspective-taking
- Counter-stereotypical imagery
Bias Regulation Efforts

- Distraction/Avoidance
- Suppression/Control
- Perspective-taking
- Counter-stereotypical imagery

Suppression

- Try not to think about …
- Effortful mental control strategy
  … that typically backfires
Bias Regulation Efforts

- Distraction/Avoidance
- Suppression/Control
- **Counter-stereotypical imagery**
- Perspective-taking

Counter-stereotypical Imagery

Allym Baun / The New York Times
Bias Regulation Efforts

- Distraction/Avoidance
- Suppression/Control
- Counter-stereotyped imagery
- Perspective-taking

Perspective-taking

Increased psychological connectedness with dissimilar others.
Perspective-Taking

- Ps watched short film of two men doing everyday activities, one black the other white. Black man (Glen) experiences discrimination during the film.

- ‘Imagine-Other’ Perspective Taking: Imagine what Glen might be thinking, feeling, and experiencing…

- ‘Imagine-Self’ Perspective Taking: Imagine what you might be thinking, feeling, and experiencing if you were Glen…

- Objective Focus: Don’t get caught up in imagining what the men might be thinking, feeling, and experiencing…

“Pro-White” Automatic (IAT) Bias

(Todd, Bodenhausen, Richeson, & Galinsky, 2012)
Perspective-Taking

• Non-black undergrads (58% female; 39% White, 54% Asian, 3% other)
• Essay about a day in life of a young Black man
  – Perspective Taking: *Visualize clearly and vividly what this person might be thinking, feeling, and experiencing*…
  – Control: no additional instructions
• Seating Distance Task (Macrae et al., 1994)
  – Ps asked if willing to be interviewed by a different RA
  – RA name: ‘Tyrone’ vs. ‘Jake’
  – Measured distance between P’s own chair and RA interviewer’s chair

Seating Distance

![Bar graph showing seating distance](image)

*Note: Error bars are standard error of the mean*

Todd, Bodenhausen, Richeson, & Galinsky (2012), JPSP
Interaction Quality

- Day-in-the-life essay (Black male target)
  Perspective Taking vs. Objective Focus vs. No instruction Control
- Unexpected interaction with Black female (3min)
- Positivity of interaction (black experimenter)
  - Ratings of participant (friendly, cold, likeable, tense, etc.)
  - Enjoyment of interaction (enjoyable, awkward, comfortable)
- “Positive” nonverbals (observers)
  smiling, eye contact, leaning forward ($\alpha = .82$)

Positivity of Interaction
Black Experimenter

Contrast: $t(44) = 2.60$, $p = .01$, $d = .78$

Note: Error bars are standard error of the mean

Todd, Bodenhausen, Richeson, & Galinsky (2012), JPSP
Conclusions

• Stereotypes & other biases are alive in us (in mind & brain), whether we endorse them or not.

• They are a part of our “seeing” and responding to our environment.

• What to do?
  – Consciously altering the way we engage dissimilar others (perspective taking).
  – Re-training the association in our heads (counter-stereotypical imagery).