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Why the Brain Discriminates: Neurobiological Underpinnings of Racial/Ethnic Discrimination

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WHY THE BRAIN DISCRIMINATES: NEUROBIOLOGICAL UNDERPINNINGS OF RACIAL/ETHNIC DISCRIMINATION

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Objectives

- *-Describe neurocognitive roots of bias, prejudice and discrimination*
- *-Describe consequences of discrimination on its victim's mental and physical health; and performance*
- *-Describe practical, evidence-based ways for promoting diversity and minimizing impact of discrimination*





Race and Ethnicity

A Definition of Race

- Race is a socially constructed reaction to phenotypic characteristics

- Genotype
- Phenotype





Ethnicity

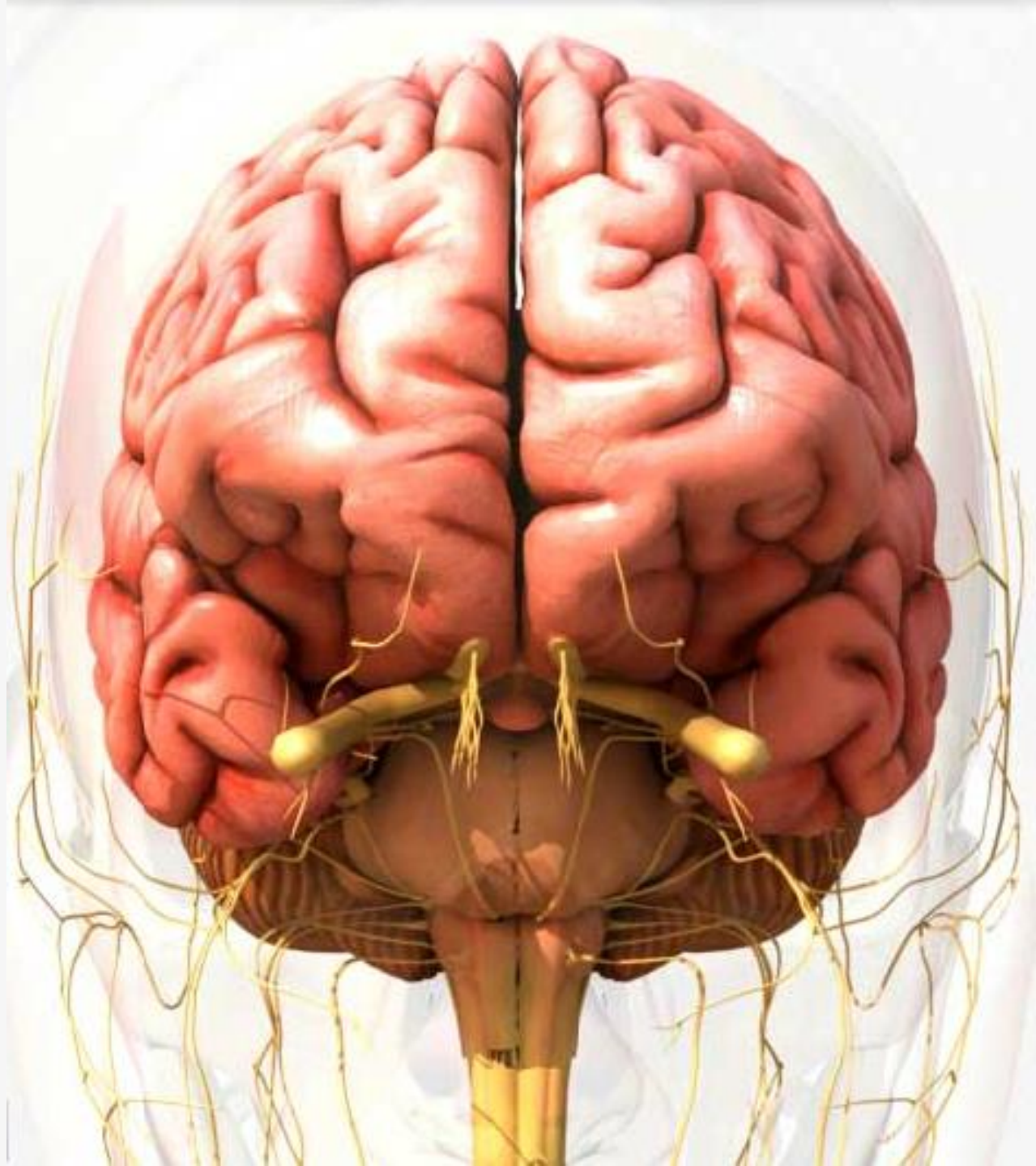
- Common ancestry/history
- Shared language, beliefs and moral codes, social rules, and behaviors of a given community







Brain Structure and Discrimination



Does the brain
discriminate?

Environment and the Brain

- The brain is anatomically organized into functional regions and networks
 - This system of organization is central to how the brain learns
 - The brain learns through detecting patterns in the environment
 - When certain details are missing, the brain fills in the gaps
 - The brain stores information in a categorical fashion

Environment and the Brain

- How categorization facilitates learning
 - Reduces cognitive overload, thus enabling us to learn faster
 - Enables us to make inferences about new members of a group that we encounter for the first time.

(Quinn 2013)



Influence of the
Environment
on the Brain



Environment & The Brain

- At birth, the brain has *basic, tentative* networks that are genetically determined
 - The environment modifies these networks in various ways
 - Can strengthen them or dismantle them
 - The goal is to enable the organism to be fit for the environment that it lives in.

(Kandel, et al 2013)



Environment & The Brain

- Through sensory stimulation we construct an internal reality that reflects the external environment
- These experiences become more hard-wired after puberty
- Inner reality becomes the lens through which we view the world

(Wexler, 2006)



Environment & The Brain



- After puberty
- Contradictions between the internal constructs and the actual environment will produce conflict
- Conflict means that one of the two (internal structures or the actual environment) will have to change.

(Wexler, 2006)

Environment & The Brain

- To ensure ongoing harmony between inner reality and external reality, people tend to:
 - Prefer familiar people, places, things, etc.
 - See the need to conform to group rules and pressures





Environment & The Brain



- The constructs we build as a result of our experiences will form the lenses through which we come to view the world.
 - They become the standard against which we evaluate people, actions & things.



Emergence of




Social Preference
in Children



At what Age Are Children Able to Detect Racial Differences?

Social Preference in Children

- 3-month-old infants can detect racial differences 
- Children up to 2.5 years old show no racially-based social preference
- Racially-based preference emerges between 2.5 and 5 years of age
 - Children at this age, however, do not assign social importance to racial differences

(Kinzler & Spelke, 2011)



Social Preference in Children

- Children up to 6 years of age tend to use language/accent rather than race as a basis for social preference and judgment
- Young children prefer engaging with native speakers of a different race to engaging with non-native speakers of same race

(Kinzler & Spelke 2011)





Effect of Familiarity

- Familiarity is the primary determiner of preference for people, actions & things
 - It means that cognitive representations and external reality match each other
 - It serves our innate biological need to protect our own survival & well-being
 - Familiar people, actions, & things are predictable
 - Hence they are perceived as safe & pleasurable
 - They attract our attention

(Kinzler & Spengler 2011; Wexler 2006)

Black Bag Experiment

Justifying Discrimination

- Discrimination emerges as a line of defense to...
 - Avoid experiences that do not match cognitive representations
 - Consequently, individuals from other groups are ignored, discredited, or forgotten all together
 - Furthermore, the person tries to justify racist attitudes and decisions



Neurochemistry of Ethnic Discrimination

- Oxytocin: hormone and neuromodulator
 - Significantly impacts social and reproductive behavior
 - Pair bonding
 - Group belonging
 - Maternal affection and behavior
 - Trust and altruism
 - Negative effects:
 - Aggression toward intruders
 - Territoriality

Love (2014)

Neurochemistry of Ethnic Discrimination

- Oxytocin....
- Has a modulatory role on motivation
- Amplifies significance of social cues
- Increases attention to social cues
- Increases processing of social information
- Increases motivation to engage in social behavior

(Love, 2014)

Impact of Discrimination on Mental and Physical Health, & Performance

Impact of Perceived Discrimination

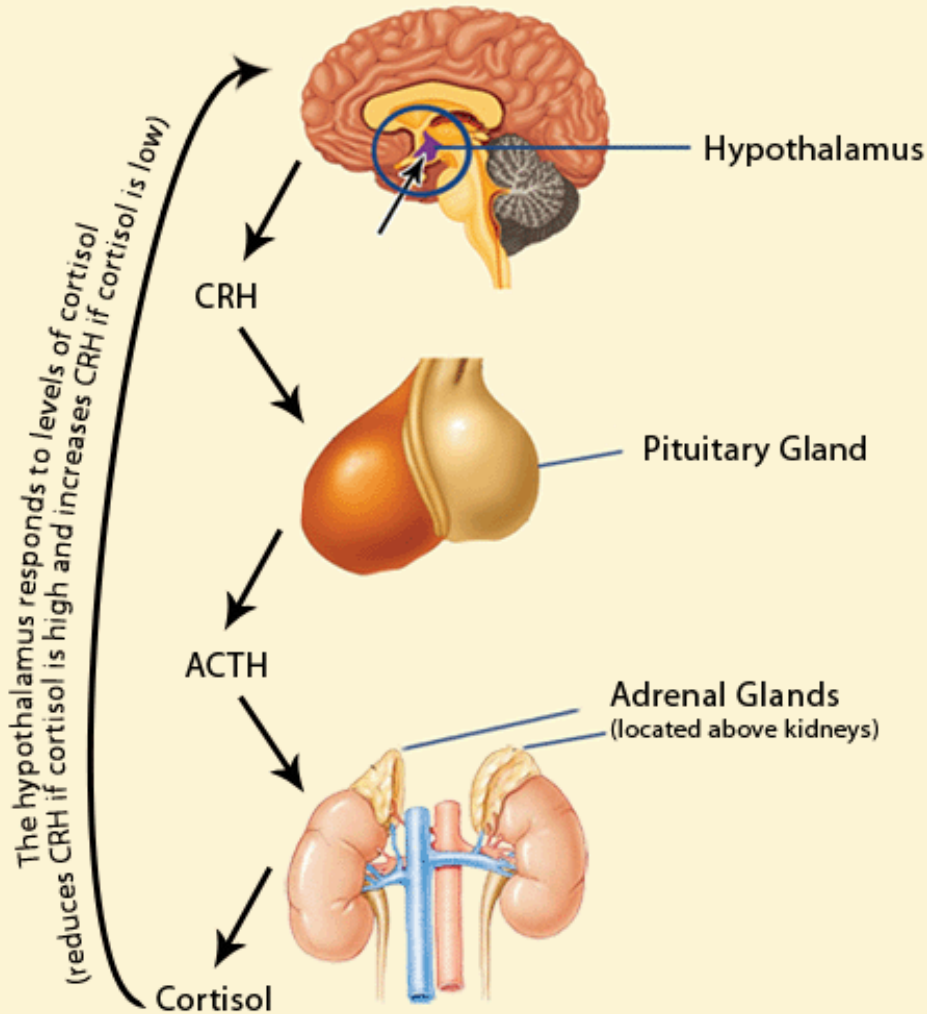
- An impressive body of research has documented strong and consistent associations between racial discrimination and mental and physical health outcomes in children and adults

Impact of Perceived Discrimination

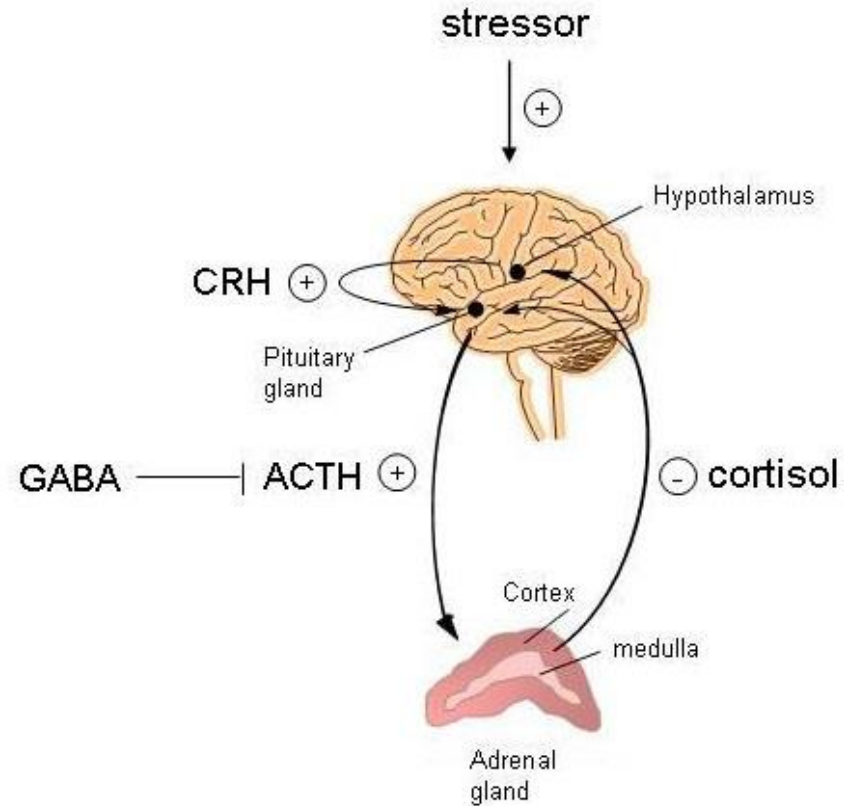
- In adults:
 - A wide range of mental and physical disorders including:
 - Depression
 - Anxiety
 - Hypertension
 - Decreased sleep
 - Metabolic disorders
 - Poor memory & poor executive functions
 - Drug and alcohol addiction
 - Heart disease

Stress

Physical, psychological or environmental



Stress & the HPA axis



Impact of Perceived Discrimination

- 66% of PED studies show that it causes risky behavior in adolescents and young adults
 - Individuals with poor coping skills are most at risk
 - Risky Behaviors include:
 - Aggression and violence
 - Dangerous, rule-breaking behaviors
 - Self-injury
 - Alcohol and/or drug addiction

(Borders & Hennebry, 2015).

Impact of Perceived Discrimination

- “Individuals of all ethnic minority groups who perceive greater discrimination report worse depression, anxiety, and physical health”

(Borders & Hennebry, 2015, p. 81)

Impact of Perceived Discrimination

- Angry rumination
 - “thinking repeatedly about past angering experiences and perceived offenses”
 - Puts members of ethnic minorities at risk for:
 - Psychological stress
 - Poor physical health
 - Heightened depressive and anxious symptoms
 - Inability to forgive

(Borders & Hennebry, 2015, p. 82)

Impact of Perceived Discrimination

- Thayer & Kuzawa (2015) found that PED has a serious impact on women's biology and health **during pregnancy**
 - Worse self-rated health
 - Elevated evening cortisol levels
 - Offspring born with elevated cortisol reactivity, at least over first 6 weeks of life

Impact of Perceived Discrimination

- Maternal stress or depression during pregnancy are associated with depression
 - This elevates HPA-Axis function in infancy
 - Mothers exposed to discrimination may interact in a way that elevates stress physiology in infants
 - Stress hormones are transferred to baby through breast milk
 - This causes elevation of baby's HPA-Axis levels

(Thayer & Kuzawa, 2015, p. 40)

Impact of Discrimination

- In children...
 - Decreased self & group regard
 - Poor health, well-being, or development
 - Metabolic disease
 - Increased risk for aggression and violence



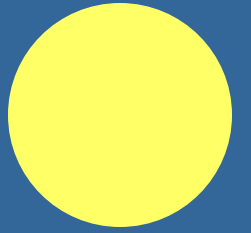
Impact of Discrimination

- Early experiences with racism linked to addiction and negative social behaviors later in life
- Decreased academic performance
- Delinquent behavior
- *Remember the case of Malcolm X?*
- **The Case of Azzam** (a 10-year old ELL Student)



Impact of Discrimination

- Christian & Bloome (2004):
 - Case of Michelle and Oscar
 - Social status in classroom
 - Influences reading level & other skills
 - ELL children often marginalized



The way out

<http://www.tolerance.org/>

Tolerance Is Not Enough

Evidence-Based Strategies

- We need to re-examine the way diversity training is being provided

Evidence-Based Strategies

- Improve coping & resilience
 - Rumination reduction through cognitive behavior modification techniques
 - Disclosure of emotional reactions
 - Mindfulness and rationalization

(Borders & Hennebry, 2015, p. 85)

- Provide social barrier awareness

Working with Adults

- Encourage parents to be closer to their children
 - Close contact between infants and their mothers improves bonding
- Encourage parents to read with their kids
- Provide social barrier awareness

Cognitive Modification

- We control our thoughts; therefore, we can change them
 - Change is hard and could even be painful at the beginning
 - Person may engage in avoidance behavior
 - Pace of change will depend on
 - (a) nature and degree of exposure
 - (b) age

Working with Adults

- Get first-hand experience with members of other cultures
- Raise awareness among adults
 - Teach about impact of discrimination on others
 - Encourage direct engagement with others
 - Encourage analysis of stereotypes
 - Challenge false ones
 - Explain how differences developed as a form of adaptation

Working with Adults

- Engage metacognitive skills through teaching adults to:
 - Analyze their own thoughts & behavior
 - Be open to new learning
 - Exposure is the key to desensitization
 - Education leads to cognitive flexibility
 - Lack of knowledge and exposure leads to cognitive rigidity/resistance to change



Role of the School

- Work to create a positive school culture
- Curriculum should be inclusive of all races in the society
- Assigning a teacher from a different ethnicity/race promotes diversity in kids
 - According to Sandersa & Downer (2011), having teachers of the same ethnicity as the majority of the students prohibits diversity-promoting practices in pre-kindergarten classrooms.”

The Role of the School

- Positive parent-school experiences enhance student engagement
 - Observe how your school treats parents
- Parents need to be aware that their expectations of the child have a direct influence on academic performance

(Kim, Sherraden & Clancy, 2013)

Working with Children

- Children from minorities need to learn about high-tier professions
- Develop programs that foster positive group image, beliefs and attitudes
- Promote multi-racial foster placements and daycare centers



Working with Children

- Assign leadership roles to children from minorities
- Raise your expectations
- Constantly make them aware that you *care*
- Make a serious effort to learn about them and their families

Take-Home Message

- Discrimination is not a state of being:
 - It is a state of mind
- Society will make us grow prejudiced or otherwise
- **Familiarity and exposure to people from different cultures is the most important tool for preventing/overcoming discrimination**
- Teaching acceptance of others should begin in the first year of life.
- We can change our ideas, because we own them!

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