Welcome to the UQ/Chula 2016 Lectures

28 March - 1 April, 2016

Looking for My Slides/ Notes?

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Staff

Dr Eric Vanman - Senior Lecturer

This Week's Lectures

Focus of My Lectures this week: Methodology (review) & Emotion Research

Monday (today): Introductions and Emotion Research

Tuesday: Methodology Review (e.g., Experimental Design, Sampling, Validity)

Wednesday: Ethics & Running and Experiment

Thursday: Statistics

Friday: Current Crises in Psychology Research

Today: Introductions

Introduction to Me & University of Queensland

Emotion Introduction

- Theory
- Methods

Three Emotion Topics for You to Study This Week:

- Crying
- Schadenfreude
- Trust

More about... Eric Vanman

Three Main Research Interests

Prejudice & Racism -- Causes and Cures

Empathy—The effects of crying, How people respond to robots,

Online Social Networking (Facebook, Twitter, Instagram, etc.)

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Emotion Introduction

The Expression of the Emotions in Man and Animals (1872)

Main contributions:

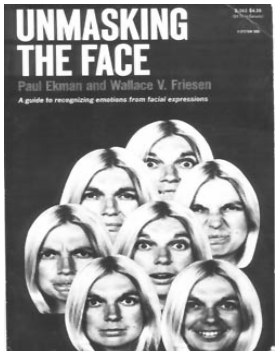
- Using evolution as a framework for understanding emotional expressions
- A method of investigation
- "General principles of expression"

After Darwin

Experimental Psychology in the 1920s

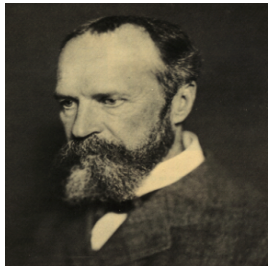
Tomkins (1962)

Ekman and Izard's Cross-cultural Work

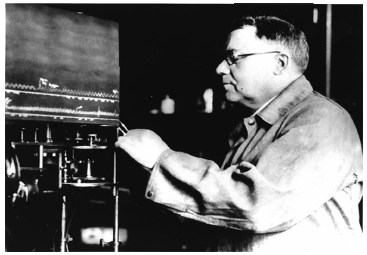


William James (1842-1910)

"bodily changes follow directly the PERCEPTION of the exciting fact, and our feeling of the same changes as they occur IS the emotion" (1885, pp. 189-190)



Walter Canon's (1871-1945) Critique



The ANS is too slow to do all this

Problems of ANS specificity

Access to our own physiological responses is poor

Schachter's Theory

Theory actually has origins in Canon's criticisms of J-L Theory

Cited study by Marañon in 1924

Schachter argued:

In any emotion there is a diffuse sympathetic charge. This becomes named and identified through the situation in which it occurs and the individual's perception of the situation.

Arousal (body) first, which is then guided by cognition

Evidence: Schachter & Singer (1962)

Three hypotheses:

If we are in a physiologically aroused state for which there is no obvious explanation, then we will label it according to whatever cognitions are available to us.

If we are in a physiologically aroused state for which have an obvious explanation, we are unlikely to use alternative explanations to label it.

Given the same cognitive conditions, we would behave emotionally only to the extent that we are aroused.

Evidence: Schachter & Singer (1962)

Subjects were told that the experimenters were interested in the effects of a vitamin compound ("Suproxin") on vision

Control group received a placebo, other groups received an epinephrine injection (BP rises, as does heart rate, respiration, blood sugar levels)

Two main IVs:

- What they're told about the injection:
  - Ignorant: told of no side effects
  - Informed: told the common side effects
  - Misinformed: told side effects not common (feet feel numb, itchiness)
- Social manipulation:
  - Euphoria
  - Anger

The Evidence (cont.)

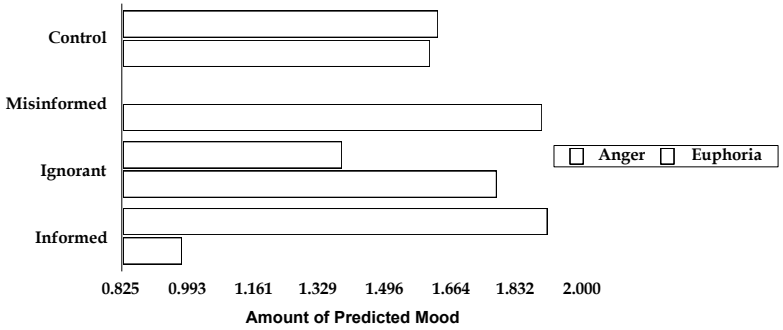
Two main DVs:

The extent to which the subject behaved like the stooge (via a one-way window)

A self-report mood questionnaire

Behavioural Results

Mood Questionnaire Results



1970s — The Rise of Cognition in Emotion

(Appraisal Theory)

Zajonc's (1980) Challenge

"Feelings need no inferences."

- Affective reactions are basic and primary.
- Affective reactions are inescapable.
- Affective reactions tend to be irrevocable, in contrast to cognitive judgments.
- Affect implicates the self.
- Affective judgments are difficult to verbalise.
- Affective reactions may not depend on cognition and knowledge.

EVIDENCE: mere exposure effects, subliminal conditioning of attitudes

Response of Lazarus (1982)

Most of Zajonc's examples were "preferences," and not Emotions

Zajonc sees people as computer-like information processors, instead of the sources of meaning

There are no exceptions to the cognitive appraisal of meaning

So, What is a "Cognition?"

Joseph LeDoux's Work (see *The Emotional Brain*, 1996)

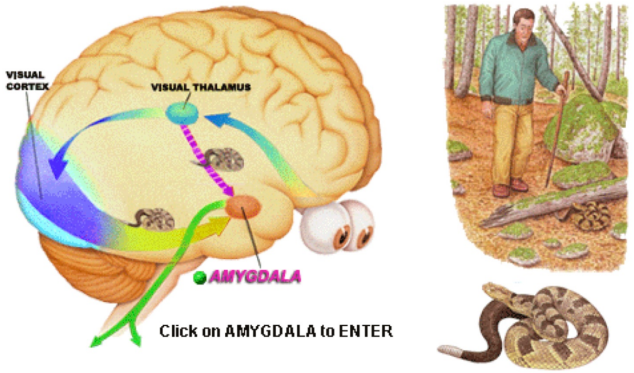
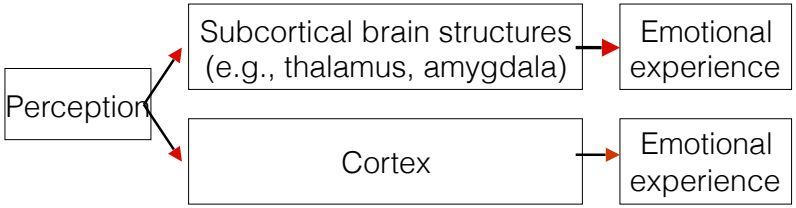


Illustration based on LeDoux JE (1994) Emotion, Memory, and the Brain. Scientific American.

A Dual Process Approach



Somatic Marker Hypothesis (Damasio, 1994)

Imagined consequences are associated with positive or negative gut feelings or "somatic markers"

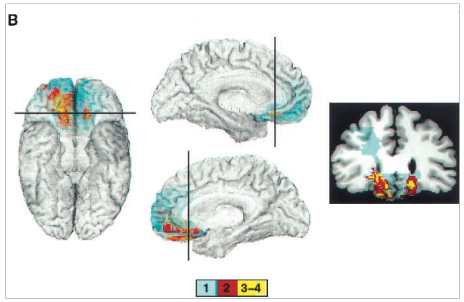
Acquired through learning

May be conscious or unconscious

Make decision-making more efficient

act as alarm signals to warn you against bad choices and bias you towards good choices

Patients with VMPF or Amygdala Lesions



Bechara et al. (1997, 1999) worked with patients who had ventromedial prefrontal (VMPF) or amygdala damage

Normal intelligence, but often made poor decisions in their daily lives

VMPF damage prevented them from acquiring somatic markers and therefore interfered with decision- making in complex situations (and amygdala damage might interfere with the processing of somatic markers)

The Iowa Gambling Task

A
Gain: $100
Loss: $1,000

Bad Decks

B
Gain: $100
Loss: $1,200

C
Gain: $50
Loss: $75

Good Decks

D
Gain: $50
Loss: $125

Results of Bechara et al. (1999)

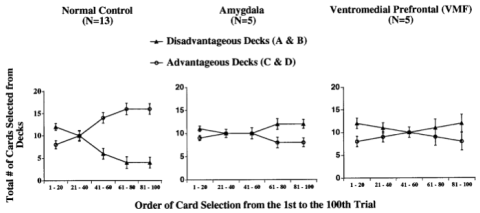
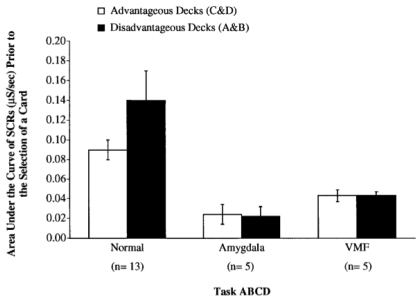


Figure 2. Means ± SEM of the total number of cards selected from the advantageous versus the disadvantageous decks in each block of 20 cards, which were made by normal controls and by patients with bilateral amygdala or VMF cortex lesions. It is shown that control subjects learn to avoid the bad decks and prefer the good decks. Amygdala and VMF patients fail to do so.

Normal participants learned to choose from the "good decks"

Patients developed a lasting preference for the "bad decks"

Results of Bechara et al. (1999)



All participants generated SCRs after each gain or loss

Normal subjects showed anticipatory SCRs before picking from the "bad decks"

Patients showed no anticipatory SCRs

Conclusions about Somatic Markers

Some criticisms of research on the Iowa Gambling Task (e.g., Maia & McClelland, 2004)

More recent (Shiv et al., 2005) version of gambling task rewards decisions that are risk advantageous...people with no damage to VMPFC do more poorly on that sort of task

Data are generally consistent with the Somatic Marker Hypothesis--mild emotions do play a role in decision-making

How do we measure emotions?

Major Measures

Skin

- Electrodermal Activity (EDA) (Skin conductance)

Heart/cardiovascular

- electrocardiogram (EKG, ECG), blood pressure, blood flow

Muscle

- electromyogram (EMG), startle reflex

Eyes

- electrooculogram (EOG)

Stomach

- electrogastrogram (EGG)

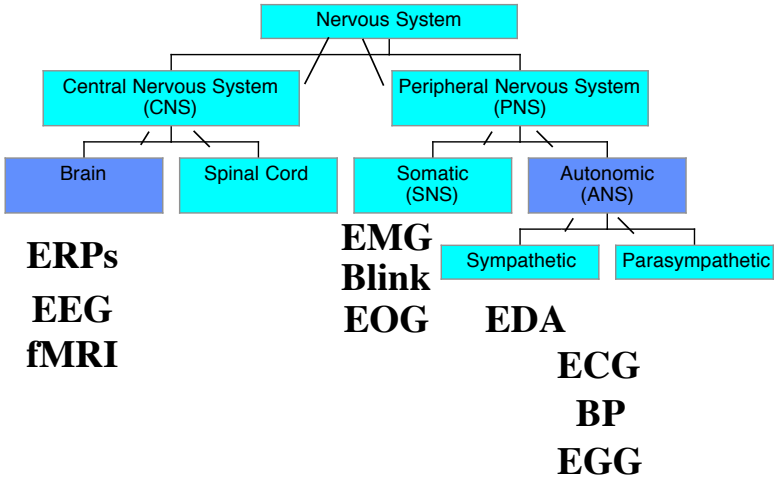
Brain

- electroencephalogram (EEG, ERP)
- neuroimaging (fMRI, PET, MEG)

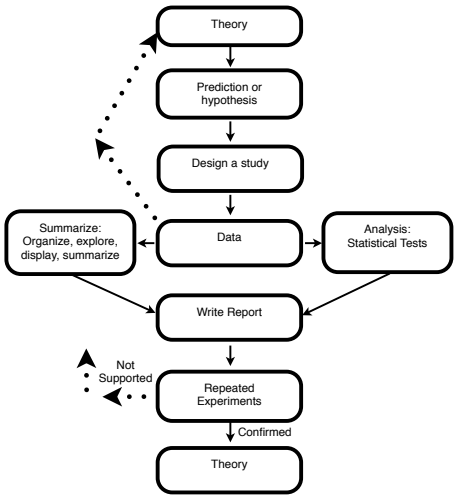
Hormones

- salivary and blood cortisol, testosterone, etc.

Overall Organisation of Nerves



A Review of Research Methodology (Part 1)



Evaluating theories and hypotheses

Scientific theories MUST be falsifiable.

After-the-fact explanations are meaningless.

Formulate a theory, make a prediction, see if the prediction comes true.

- if "yes" then your theory is supported
- if "no" then your theory is not supported

Bad Hypotheses

Circular Hypotheses

Hypotheses that contain non-scientific ideas or forces

Hypotheses that contain ill-defined terms

Good theories...

Are falsifiable

Are not circular

Do not contain non-scientific ideas or forces

Contain precise definitions of the associated terms and concepts.

Good theories...

Three Emotions We Will Develop Research About

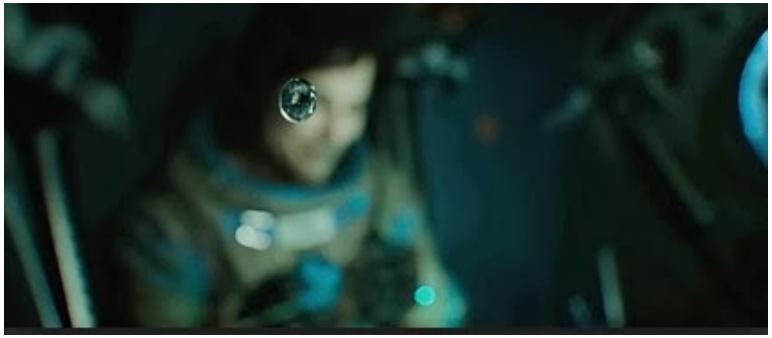
Sadness (Crying)

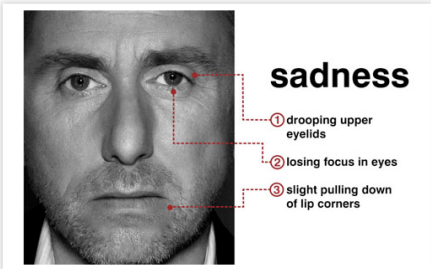
Schadenfreude

Anger

Crying

How Her Tears are Perceived Differently To His



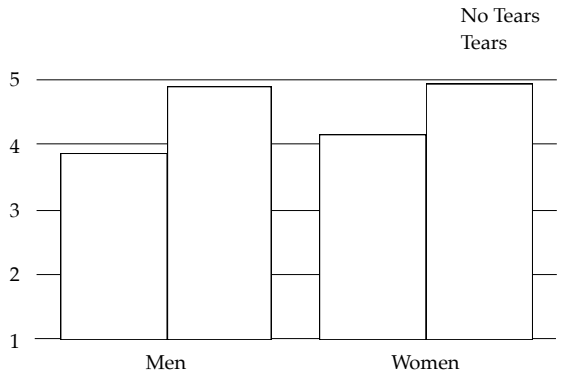


But people tear up all the time!

Some of our studies on Crying/Tears

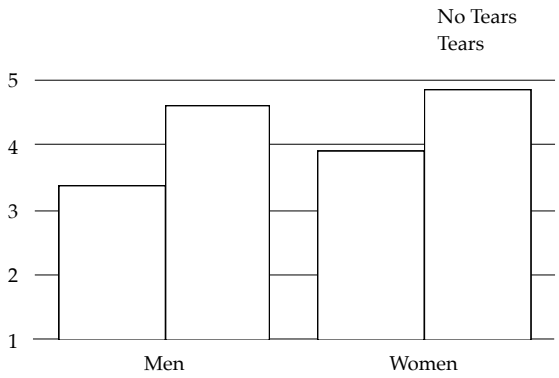
Study 1:
Do Tears Affect Judgments of Sadness?

How sad is this Person? (1=not at all, 7=extremely)



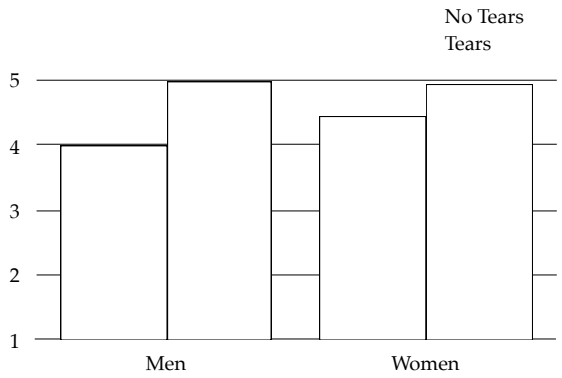
Main effects and interaction all significant, n=60

How much are they expressing their sadness? (1=not at all, 7=extremely)



Main effects and interaction all significant, *n*=60

How genuine is their sadness? (1=not at all genuine, 7=definitely genuine)



Main effects and interaction all significant, *n*=60

Why Do We Respond to Differently to Men and Women Who Cry?

[redacted]

Schadenfreude

Intergroup Schadenfreude

What do we know about Intergroup Schadenfreude?

Prevalent in team competition

More prevalent when group members feel inferior
(Spears et al., 2011)

More likely when one group envies another
(Cikara & Fiske, 2012)

More likely when team rivalry is high
(Cikara et al., 2011)

a novel explanation for intergroup schadenfreude

Schadenfreude signals to outgroup members their misfortunes are humorous...it may destabilise them

Our Study

Manipulated group membership using artificial laboratory groups (red team vs. blue team)

Conducted over two experimental sessions

Session One

Group session
- Red team vs. Blue team
- Complete a team-building activity

Measured participants' group identification at end of session one

Session Two

Return individually

Asked to put on team coloured t-shirt

Status manipulated between participants

High vs. low status: "I'm pleased to let you know that the red team performed really well on this task! The red team scored much higher than the mean, and also, scored much higher in comparison to the blue team."

Stimuli Presentation

Misfortune Scenarios

10 ingroup and 10 outgroup

Measure participants' affect to each misfortune scenarios via facial EMG

Participants also rated:

How negative situation is

How much sympathy they would feel

How much compassion they would feel

My dog was hit by a truck in front of my house.

In your opinion, how negative is that person's story?

1……2……3……4……5……6……7

None at all negative

Awful; Extremely negative

How much **sympathy** would you have for that person in that situation?

1……2……3……4……5……6……7

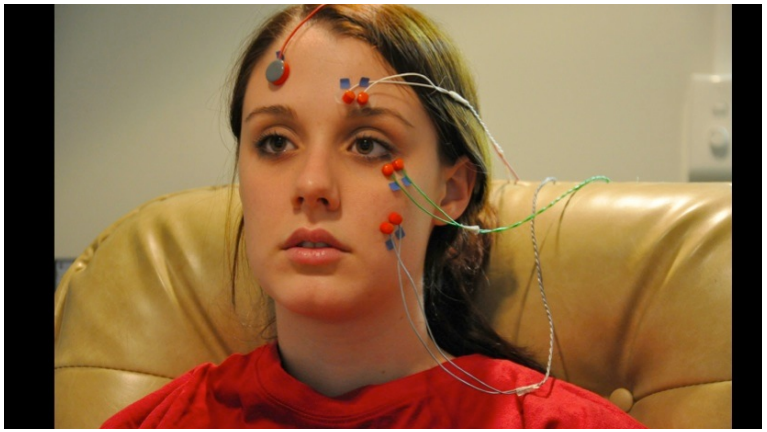
None at all Extreme

How much **compassion** would you have for that person in that situation?

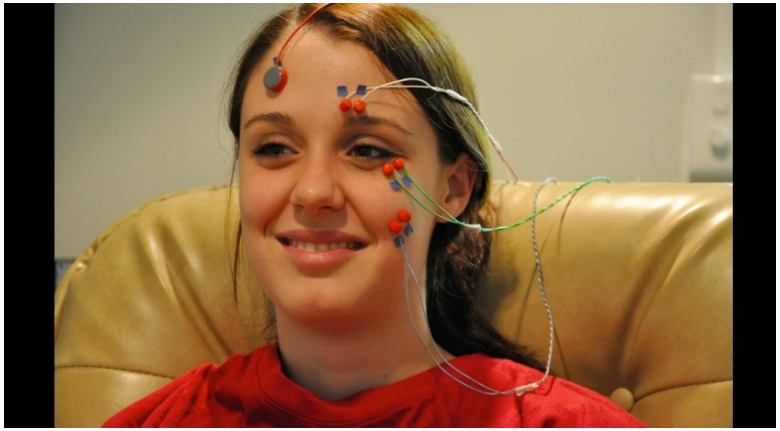
1……2……3……4……5……6……7

None at all Extreme

Here's another participant…



<or>



How much **sympathy** do you think she or he had for that person?

1……2……3……4……5……6……7

None at all Extreme

Key IV: (Outgroup Exhibits)Schadenfreude or not. Present another participant's reaction to each misfortune scenario

Manipulated between-participants

Intergroup Schadenfreude condition

The Outgroup Members always smile (5x) at any ingroup misfortune

Control condition

Same number (5) of smiles, but they come from either ingroup or outgroup members to either ingroup or outgroup misfortunes

Summing up: Four Trial Types

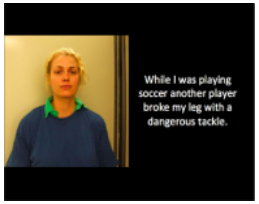
Ingroup Misfortune

Ingroup Response

Ingroup
Misfortune

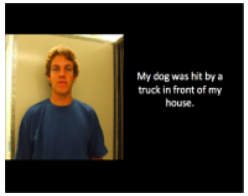
Outgroup
Response

Outgroup
Misfortune

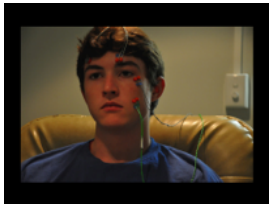


Ingroup
Response

Outgroup
Misfortune



Outgroup
Response



Trust

J Nonverbal Behav (2010) 34:83–110
DOI 10.1007/s10919-009-0082-1

REVIEW

Elected in 100 milliseconds: Appearance-Based Trait Inferences and Voting

Christopher Y. Olivola · Alexander Todorov

Published online: 23 January 2010

Abstract Recent research has shown that rapid judgments about the personality traits of political candidates, based solely on their appearance, can predict their electoral success. This suggests that voters rely heavily on appearances when choosing which candidate to elect. Here we review this literature and examine the determinants of the relationship between appearance-based trait inferences and voting. We also reanalyze previous data to show that facial competence is a highly robust and specific predictor of political preferences. Finally, we introduce a computer model of face-based competence judgments, which we use to derive some of the facial features associated with these judgments.

Keywords First impressions · Voting · Political decision making · Face perception · Social cognition

PSYCHOLOGICAL SCIENCE

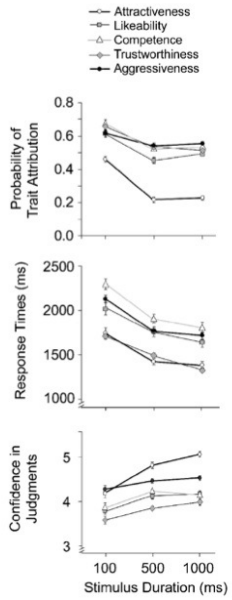
Research Article

First Impressions

Making Up Your Mind After a 100-Ms Exposure to a Face

Janine Willis and Alexander Todorov

Princeton University



Willis & Todorov (2006)

Research Report

aps ASSOCIATION FOR PSYCHOLOGICAL SCIENCE

Psychological Science
21(3) 349–354

DOI: 10.1177/0956797610362647
http://pss.sagepub.com
SAGE

Valid Facial Cues to Cooperation and Trust: Male Facial Width and Trustworthiness

M. Stirrat and D.I. Perrett
University of St Andrews

Abstract

Decisions about whom to trust are biased by stable facial traits such as attractiveness, similarity to kin, and perceived trustworthiness. Research addressing the validity of facial trustworthiness or its basis in facial features is scarce, and the results have been inconsistent. We measured male trustworthiness operationally in trust games in which participants had options to collaborate for mutual financial gain or to exploit for greater personal gain. We also measured facial (bizygomatic) width (scaled for face height) because this is a sexually dimorphic, testosterone-linked trait predictive of male aggression. We found that men with greater facial width were more likely to exploit the trust of others and that other players were less likely to trust male counterparts with wide rather than narrow faces (independent of their attractiveness). Moreover, manipulating this facial-width ratio with computer graphics controlled attributions of trustworthiness, particularly for subordinate female evaluators.

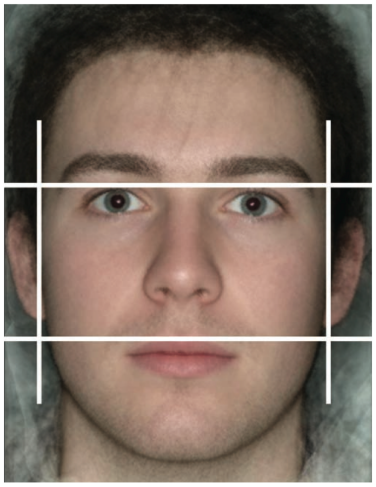
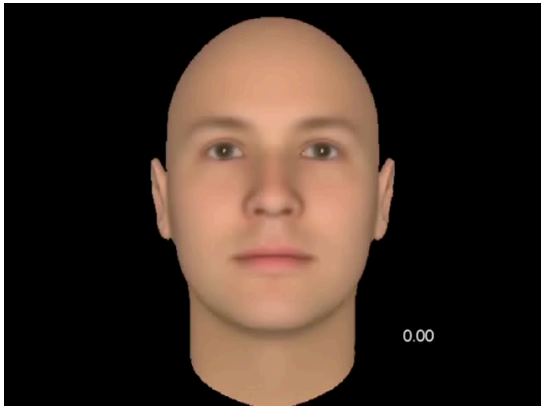


Fig. 1. Illustration of how bizygomatic width and upper face height were calculated from two-dimensional images. All measured images were aligned and scaled to the same horizontally level eye points. Bizygomatic width was calculated as the maximum horizontal distance from the left facial boundary to the right facial boundary. Upper face height was calculated as the vertical distance from the highest point of the upper lip to the highest point of the eyelids. Facial-width ratio was calculated as width divided by height.



Implicit Trustworthiness Decisions: Automatic Coding of Face Properties in the Human Amygdala

Andrew D. Engell, James V. Haxby, and Alexander Todorov

Abstract

■ Deciding whether an unfamiliar person is trustworthy is one of the most important decisions in social environments. We used functional magnetic resonance imaging to show that the amygdala is involved in implicit evaluations of trustworthiness of faces, consistent with prior findings. The amygdala response increased as perceived trustworthiness decreased in a task that did not demand person evaluation. More importantly, we tested whether this response is due to an individual's idiosyncratic perception or to face properties that are perceived as untrustworthy across individuals. The amygdala response was better predicted by consensus ratings of trustworthiness than by an individual's own judgments. Individual judgments accounted for little residual variance in the amygdala after controlling for the shared variance with consensus ratings. These findings suggest that the amygdala automatically categorizes faces according to face properties commonly perceived to signal untrustworthiness. ■

INTRODUCTION

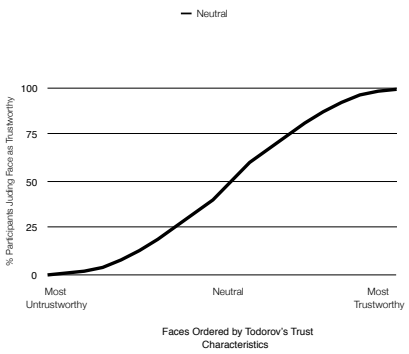
People form person impressions from minimal information (e.g., Uleman, Blader, & Todorov, 2005; Todorov & Uleman, 2002, 2003, 2004; Hassin & Trope, 2000; Ambady, Hallahan, & Rosenthal, 1995; Carlston, Skowronski, & Sparks, 1995; Carlston & Skowronski, 1994; Ambady & Rosenthal, 1992), and faces are a particularly rich source of social information. One hundred milliseconds of exposure to a neutral face is sufficient for people to make a variety of trait judgments such as trustworthiness, competence, and aggressiveness (Willis & Todorov, 2006), and the time exposure can be even shorter for some of these judgments (Bar, Neta, & Linz, 2006). Trait inferences from faces are important because they often predetermine the course of social interactions, and behavioral research has documented that the effects of facial appearance on social outcomes are pervasive (Todorov, Mandisodza, Goren, & Hall, 2005; Langlois et al., 2000; Zebrowitz, 1999; Montepare & Zebrowitz, 1998; Hamermesh & Biddle, 1994).

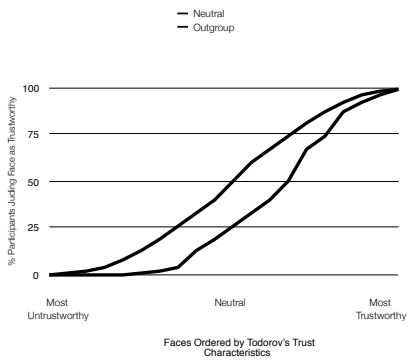
Despite the wealth of behavioral data about the significance of trait impressions from faces, there is little research about the neural mechanisms underlying these impressions. The large body of cognitive neuroscience research on face perception focuses either on face categorization (e.g., Haxby et al., 2001; Kanwisher, McDermott, & Chun, 1997; McCarthy, Puce, Gore, & Allison, 1997) and recognition of facial identity (Hoffman & Haxby, 2000) or on recognition of expressions of emotions (e.g., Adolphs, 2002; Calder, Lawrence, & Young, 2001; Blair, Morris, Frith, Perrett, & Dolan, 1999; Sprengelmeyer, Rausch, Eysel, & Przuntek, 1998; Lane, Reiman, Ahern, Schwartz, & Davidson, 1997; Phillips et al., 1997; Morris et al., 1996). An exception is research on perceptions of trustworthiness. Adolphs, Tranel, and Damasio (1998) showed that patients with bilateral amygdala damage cannot discriminate between trustworthy- and untrustworthy-looking faces, suggesting that the amygdala plays a key role in decisions of trustworthiness. Consistent with this finding, in a functional magnetic resonance imaging (fMRI) study with normal individuals, Winston, Strange, O'Doherty, and Dolan (2002) confirmed the involvement of the amygdala in judgments of trustworthiness. Specifically, the study showed an increased amygdala response to faces that the participants subsequently rated as untrustworthy, implying that the amygdala automatically tracks the trustworthiness of faces.

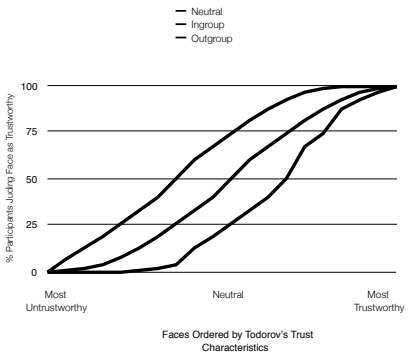
The amygdala is involved in multiple psychological functions (Phelps & LeDoux, 2005) from learning of fear responses (e.g., LeDoux, 2000) and consolidation of emotional memories (McGaugh, 2004) to implicit evaluation of stimuli (Vuilleumier, 2005; Sander, Grafman, & Zalla, 2003) and providing general vigilance functions (Amaral, 2002; Davis & Whalen, 2001; Whalen, 1998). The latter functional role is entirely consistent with findings suggesting that the amygdala plays a key role in perceptions of trustworthiness in faces. Deciding whether an unfamiliar person is trustworthy is one of the most important decisions routinely faced in social environments. Perceived trustworthiness determines whether to approach or avoid the person and serves as a gating mechanism for social interactions. In this study, we sought to replicate the findings of Winston et al. (2002) using more stringent fMRI procedures and to explore the determinants of the

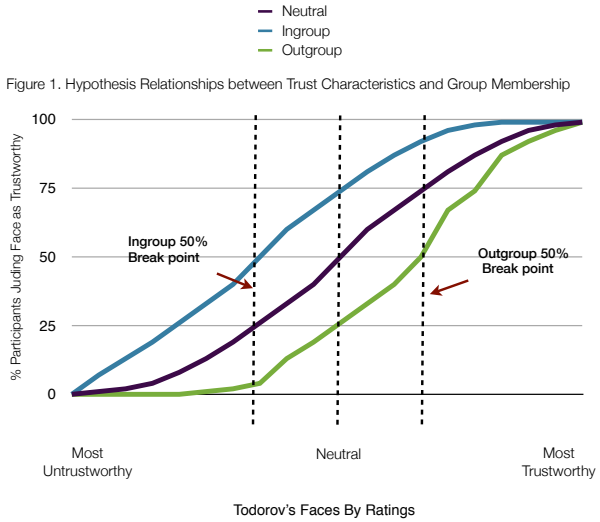
Princeton University

Pause.
What Would You Predict?

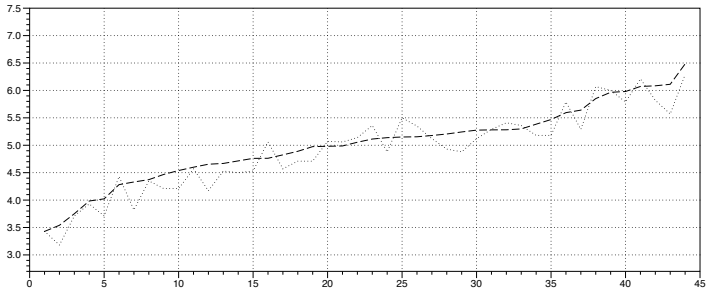




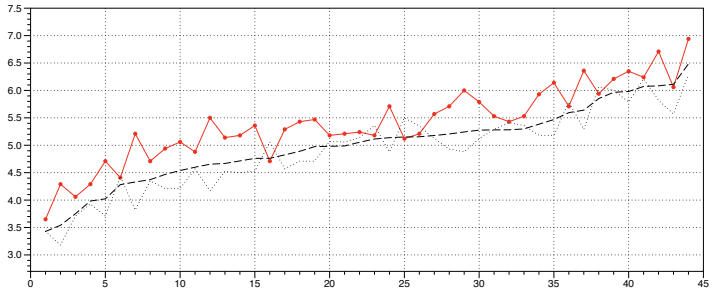




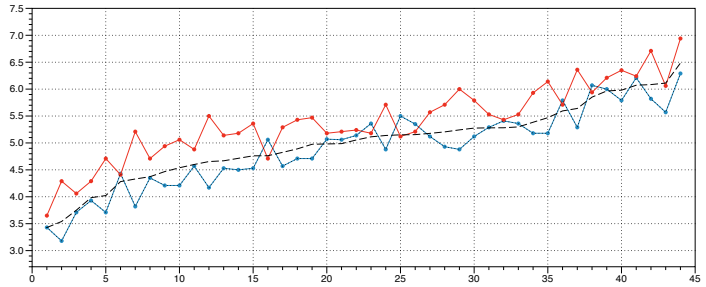
Ratings of Trustworthiness



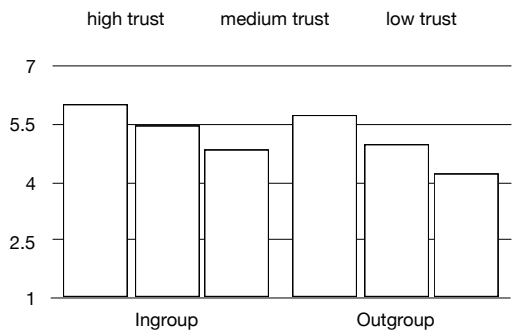
Ratings of Trustworthiness

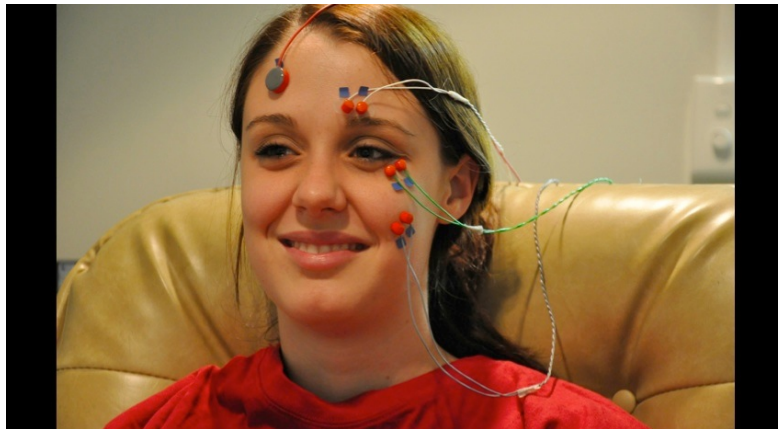


Ratings of Trustworthiness

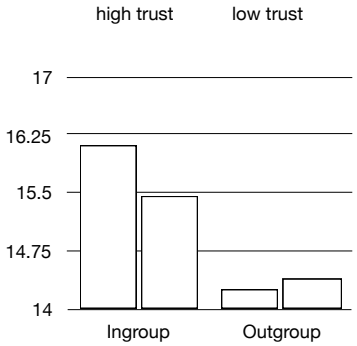


Trustworthy Ratings

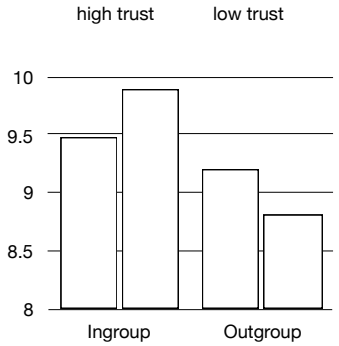




Oculi



Zygomaticus



Time for You to Start Designing a Study