

Human Emotion

Psychology 3131
Professor June Gruber



Human Emotion

Emotion Expression

Why do we laugh and cry?



Roadmap

Course Logistics

Laughter

Crying

Touch

Take-Away Qs & Expert Interview



PSI CHI

THE INTERNATIONAL HONOR SOCIETY
IN PSYCHOLOGY

Office: Muen D446D

Email: psichi@Colorado.edu

Psi Chi International website: www.psichi.org

CUB Chapter website: www.colorado.edu/studentgroups/psichi/



What is Psi Chi?



Psi Chi is an **International Honors Society** whose purpose is to *encourage, stimulate, and maintain excellence in scholarship* of members and to advance the science of Psychology.

We foster community among CU's Psychology majors who have obtained the highest academic achievement.



Why Join Psi Chi?



1. Life-long membership
 2. Networking opportunities
 3. Attend Conferences (special access to scholarships!)
 4. Scholarship and grant opportunities
 5. Opportunity to purchase tassel for graduation
 6. Looks GREAT on resume & CV
 7. Contribute to the greater Boulder Community
 8. Gain leadership experience
- We are currently looking to fill several officer positions
9. Internship, volunteer, & career opportunities



How do you Join?




1. You Qualify:

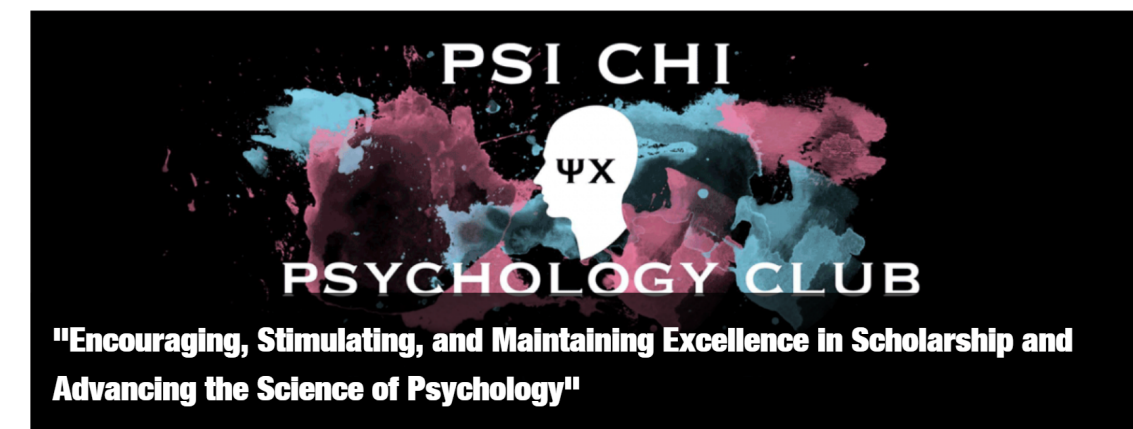
- 3 semester of college courses
- 9 credits in Psychology courses
- Cumulative GPA of 3.0
- Psych GPA of 3.3

2. You Apply:

- You can find applications...
 - Psi Chi Chapter Website
 - Psi Chi Bulletin Board
 - Office: D446D

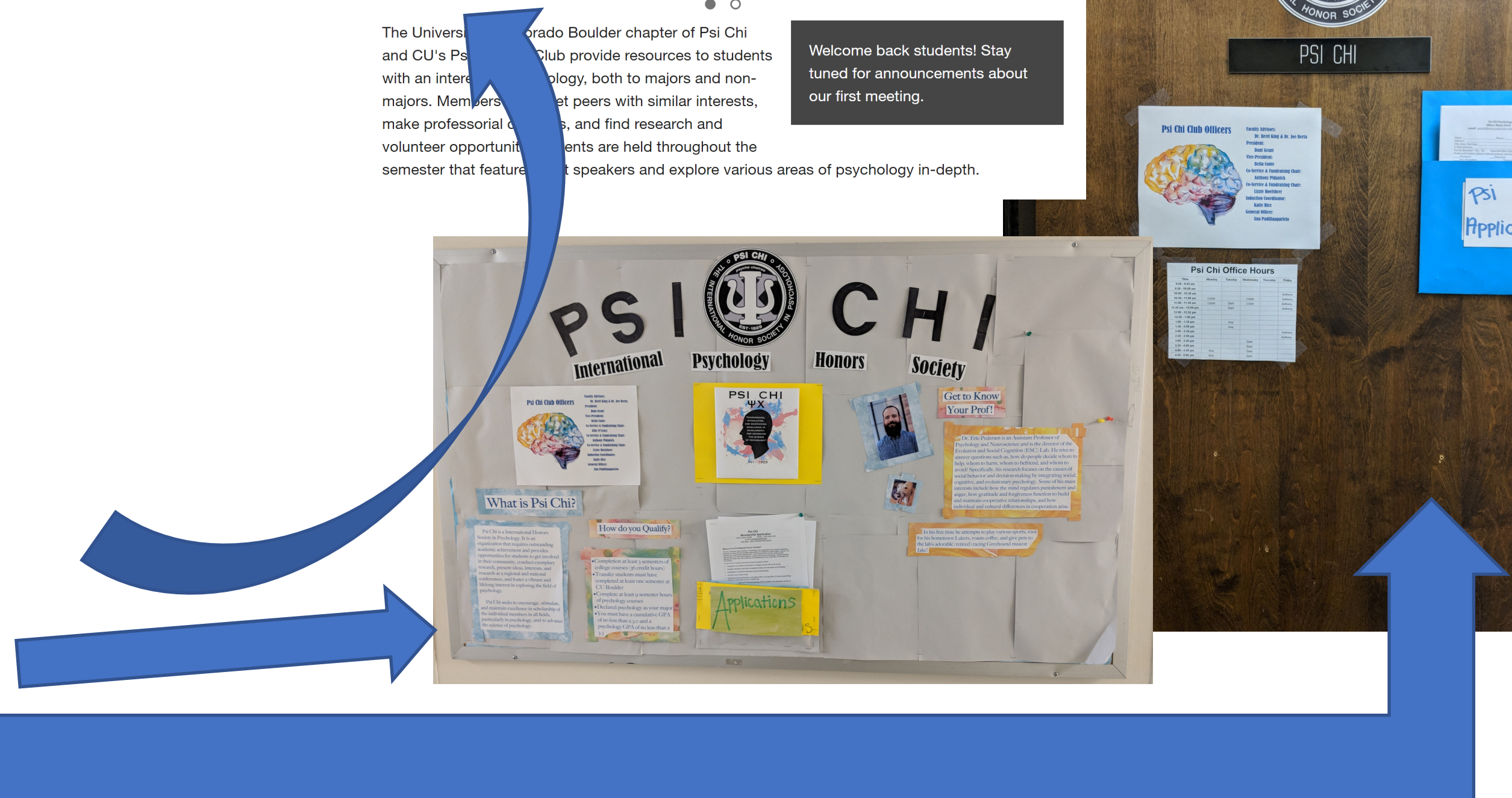
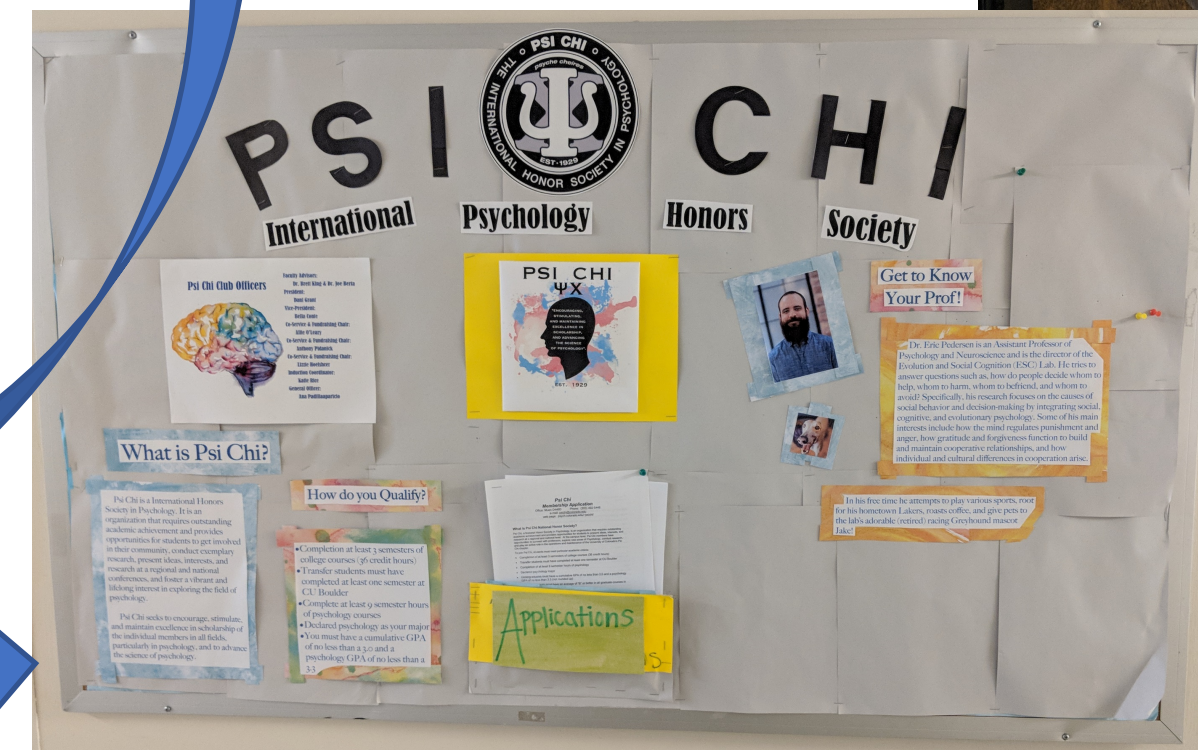
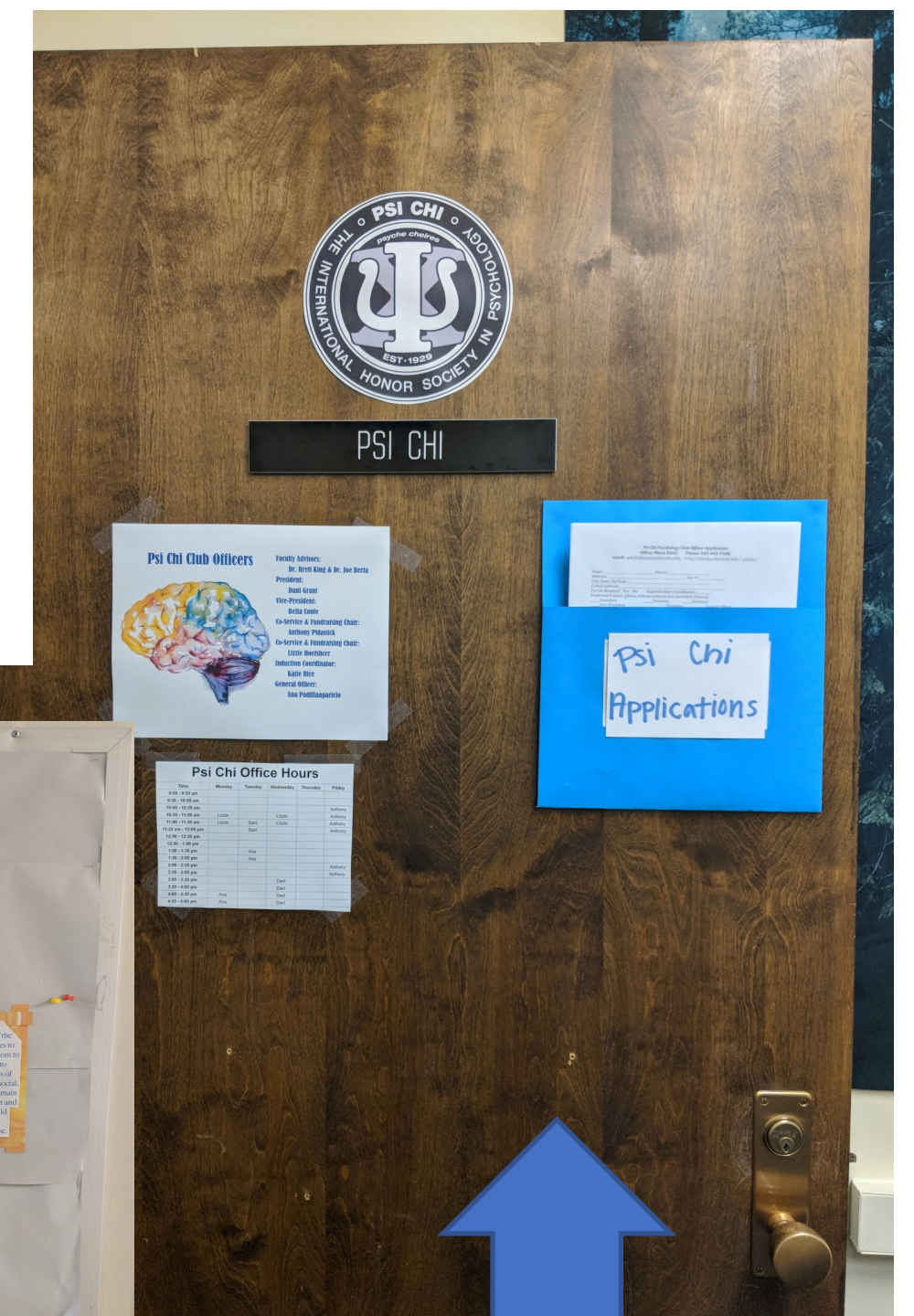
 Psi Chi and Psychology Club
UNIVERSITY OF COLORADO BOULDER

Join Officers Volunteer



The University of Colorado Boulder chapter of Psi Chi and CU's Psi Chi and Psychology Club provide resources to students with an interest in psychology, both to majors and non-majors. Members meet peers with similar interests, make professional connections, and find research and volunteer opportunities. Events are held throughout the semester that feature guest speakers and explore various areas of psychology in-depth.

Welcome back students! Stay tuned for announcements about our first meeting.





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Course Logistics

Exam 1 - Review Sheet

Handed Out Today in Class

Exam 1 - Special Accommodations

TBD Location

RECEIVE EMAIL: If you have not, you must before attending this special accommodations exam.

Course Logistics

Exam 1 - Review & Q/A Opportunities

1 - REVIEW SHEET

Handed out in class Tuesday, posted on course website

2 - OFFICE HOURS

Tues 1-2

Last-Minute Exam Review Qs: Mon 9/23 8:00-9:00pm (Canvas “Chat”)

3 - EMAIL QUESTIONS

Must Email by 5pm Mon 9/23 - Plan in Advance!

Ask Specific Questions (not “what do I need to know” about this term)

Roadmap

Wrapping up animal emotion

Laughter

Crying

Touch

Take-Away Qs & Expert Interview

Roadmap

Course Logistics

Why Study Animals?

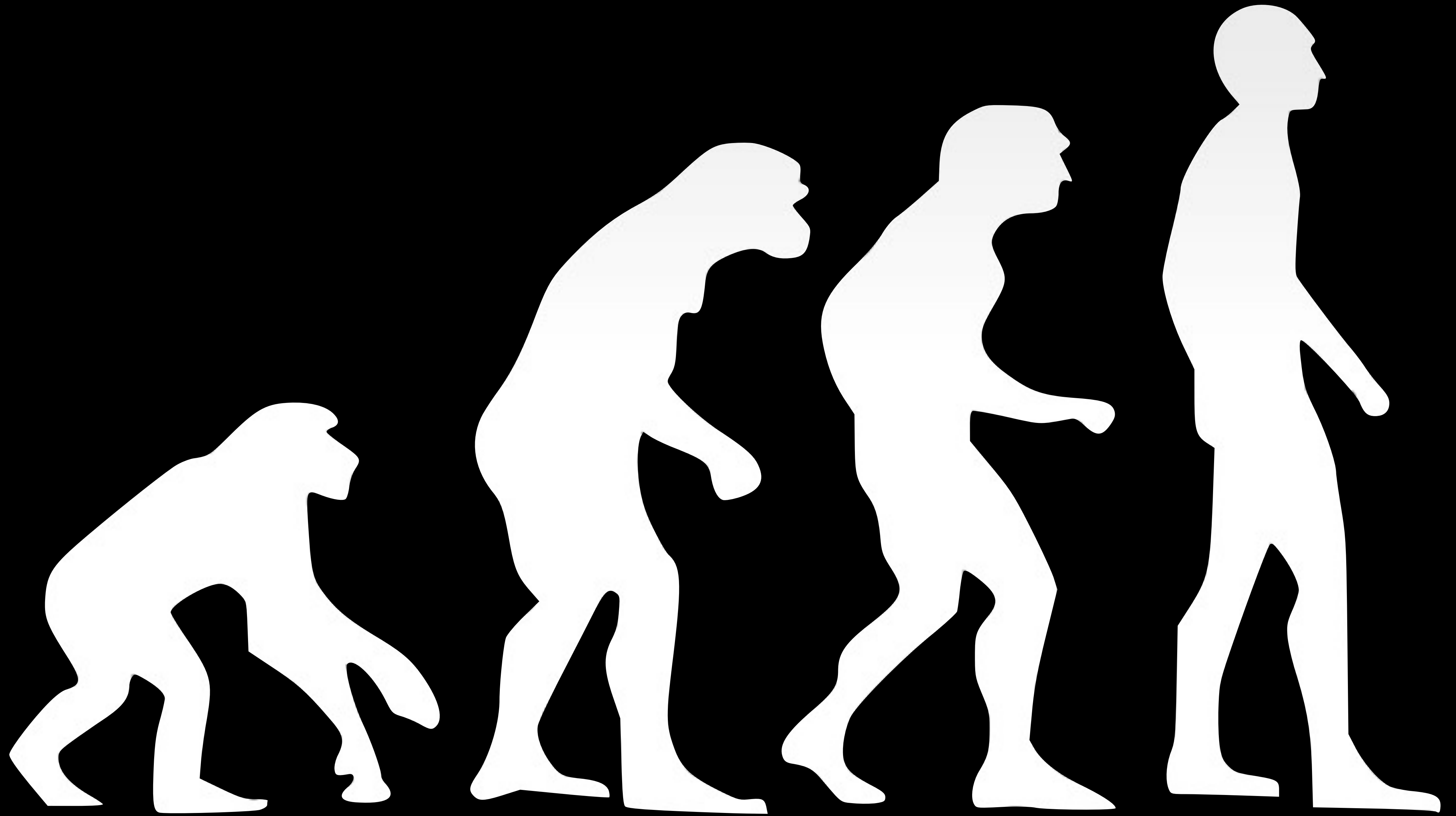
Premises & Methods

Monkey See, Monkey Feel?

Canine Compassion & Rodent Rapture?

Take-Away Qs

Emotion Expression



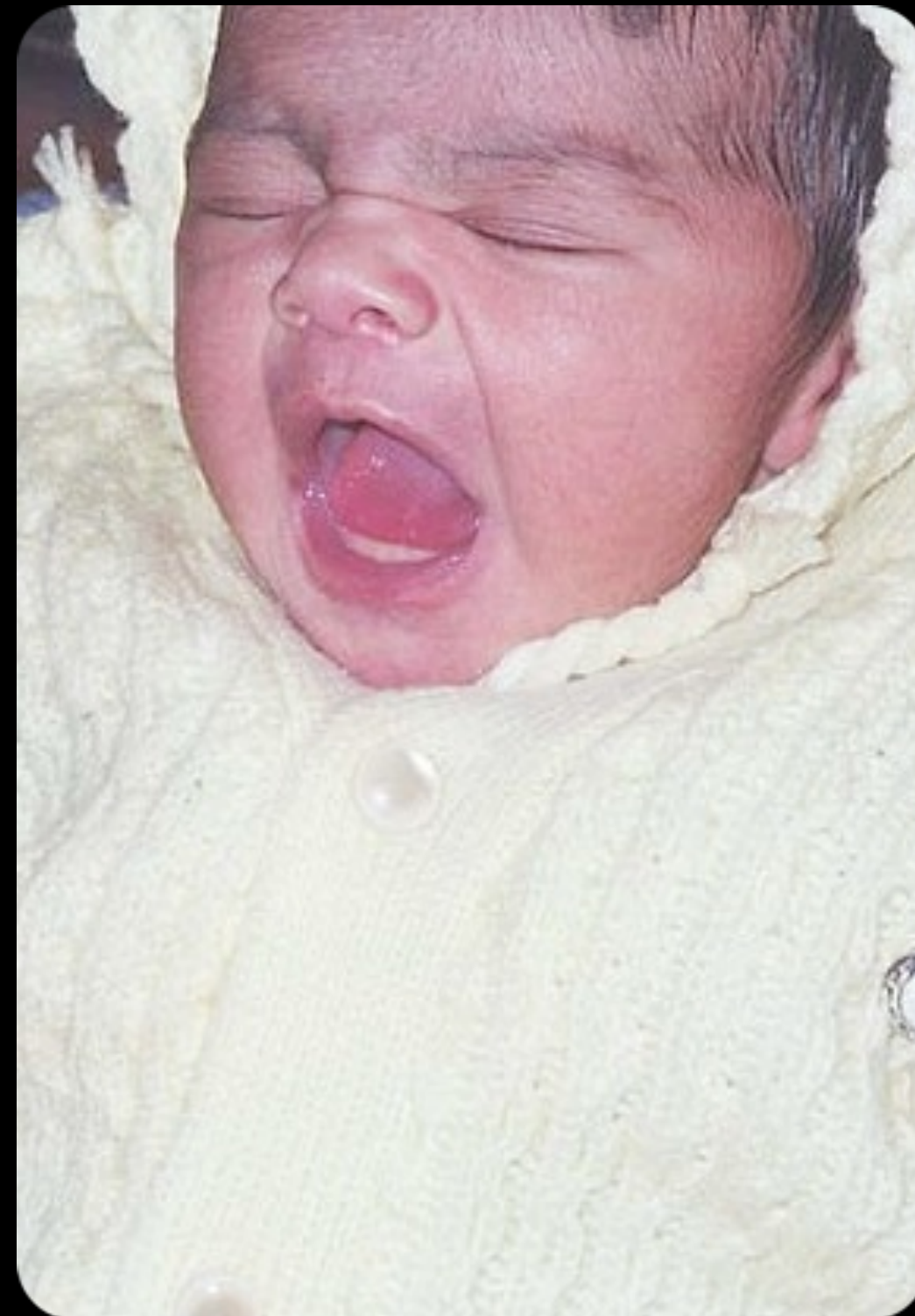
Emotional Expressions



Emotional Expressions Smiling



Emotional Expressions Crying



Emotional Expressions Surprise & Anger

SURPRISE



ANGER



Emotional Expressions



Dr. Lisa Parr
Emory University



Dr. Kim Bard
University of
Portsmouth

Facial Action Coding System (FACS)

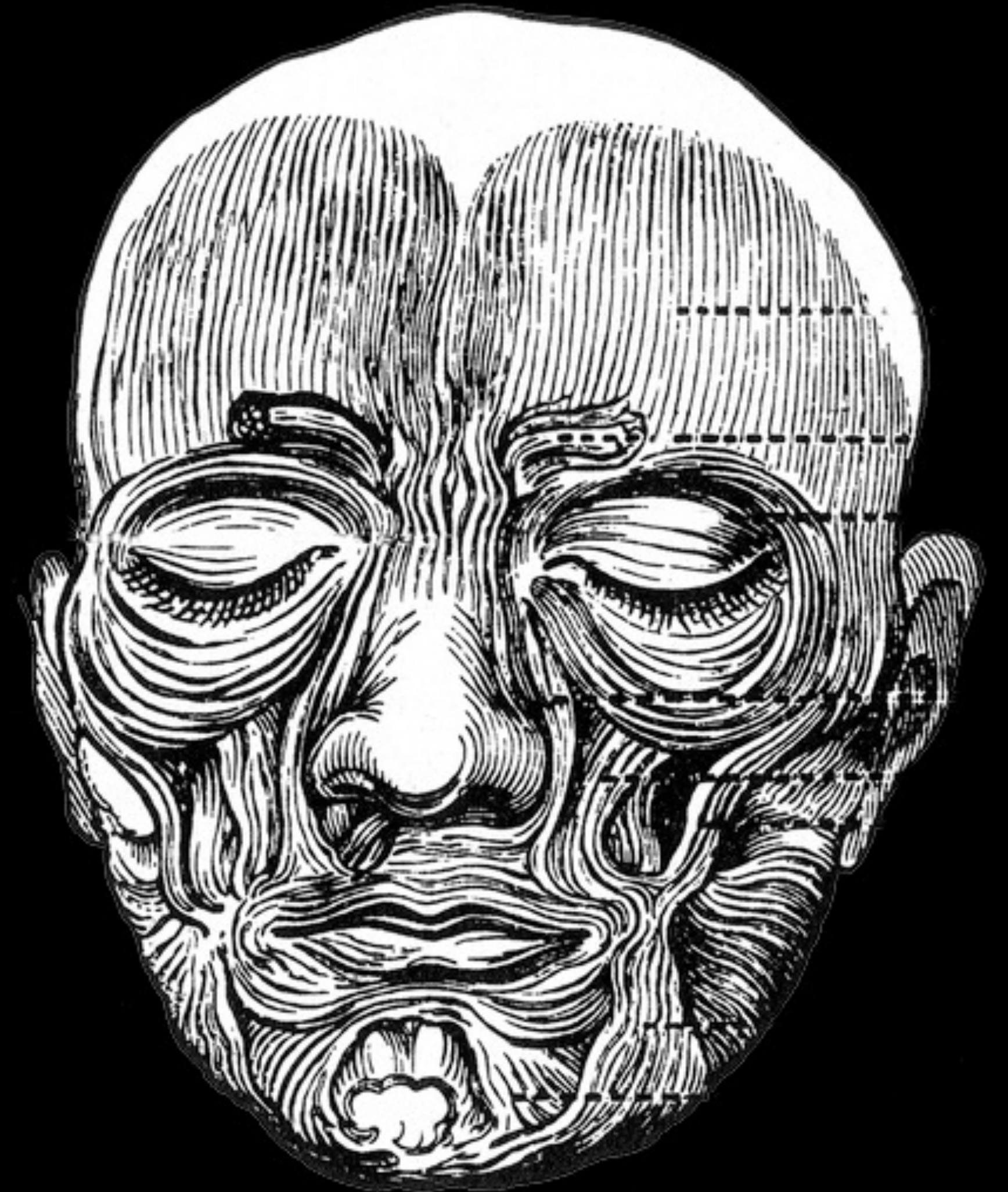
Developed Ekman & Friesen 1970's

Categorize facial behaviors based on muscles that produce them

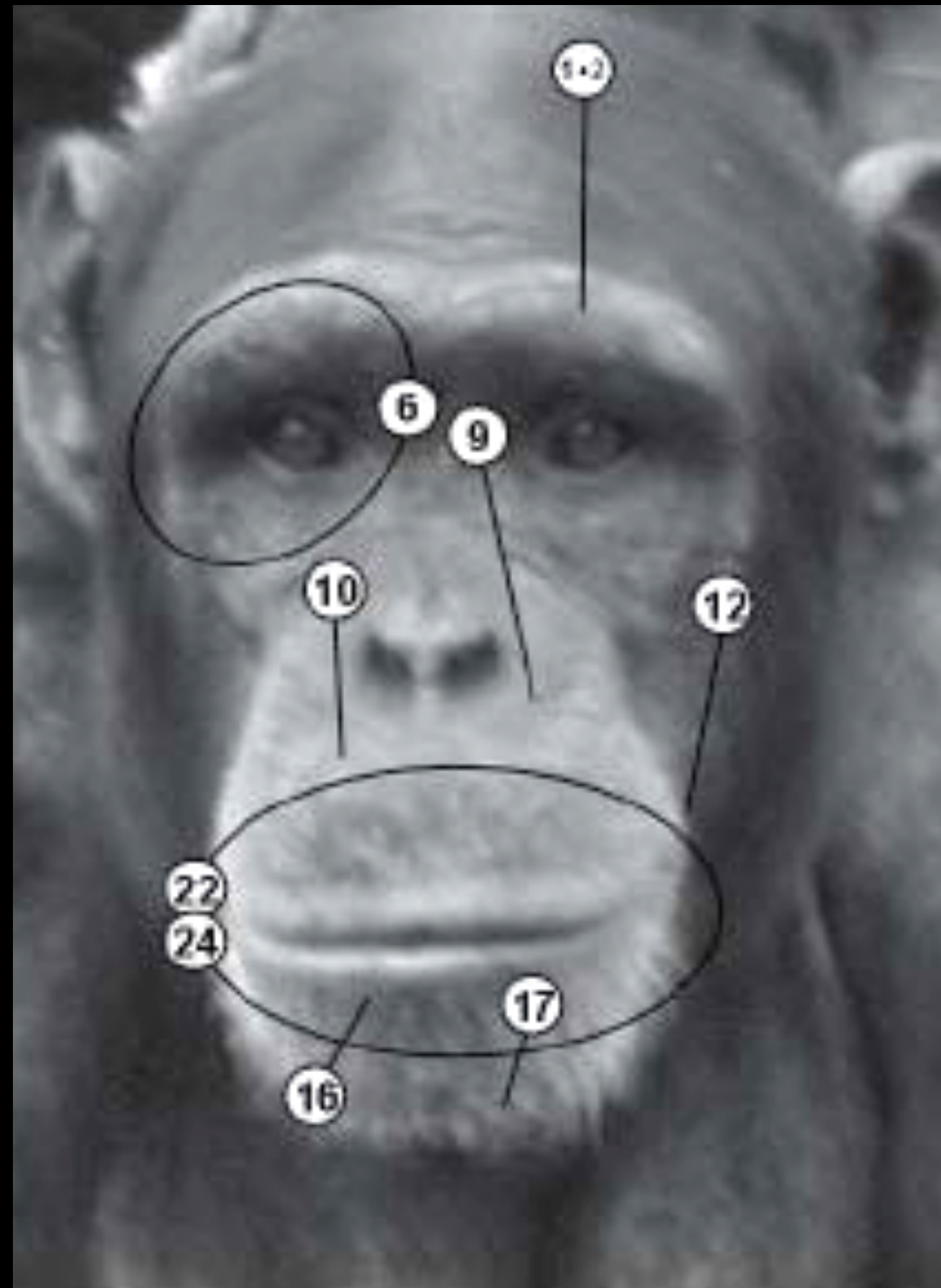
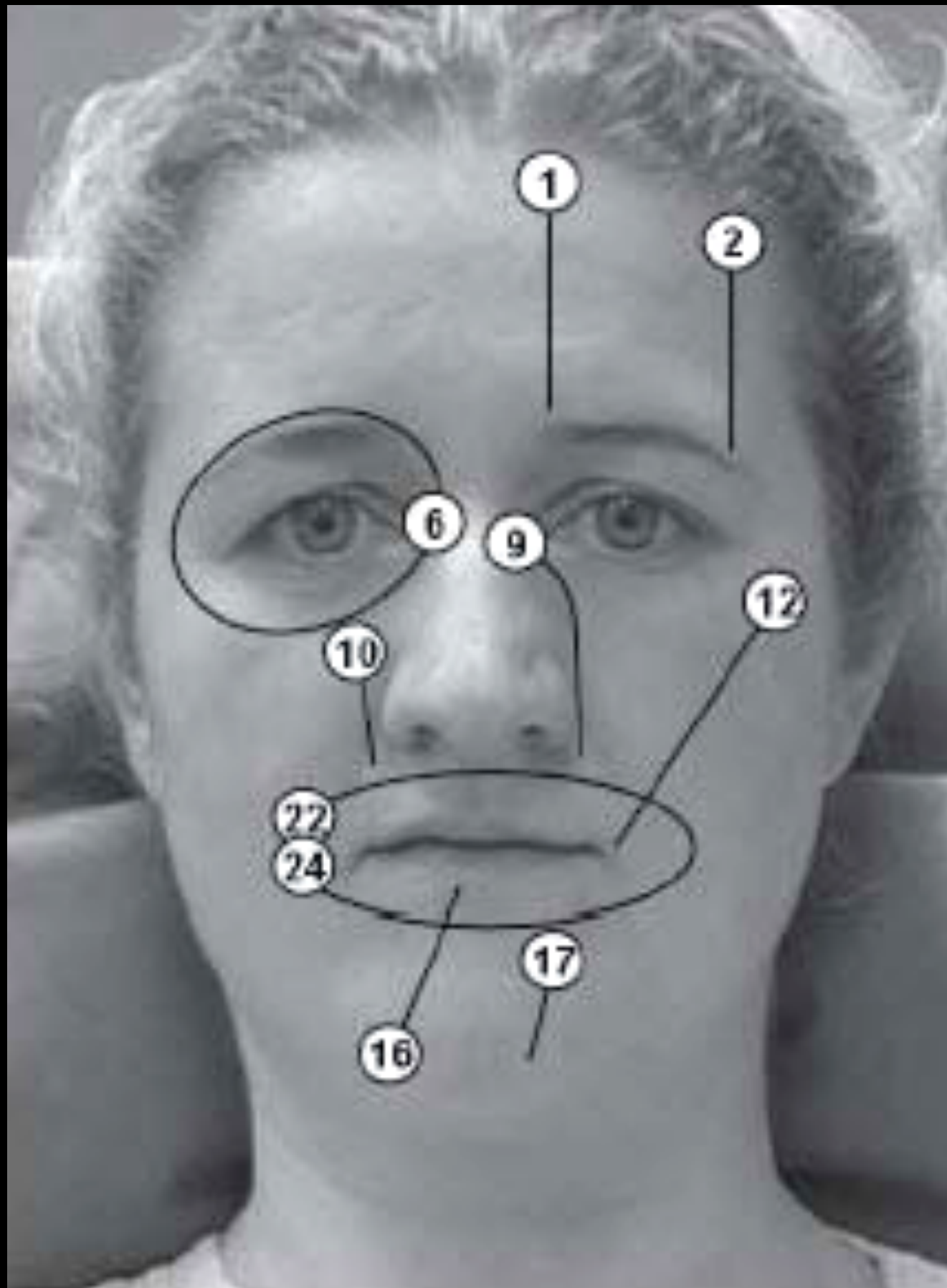
Unit of measurement = Action Unit (AU's)

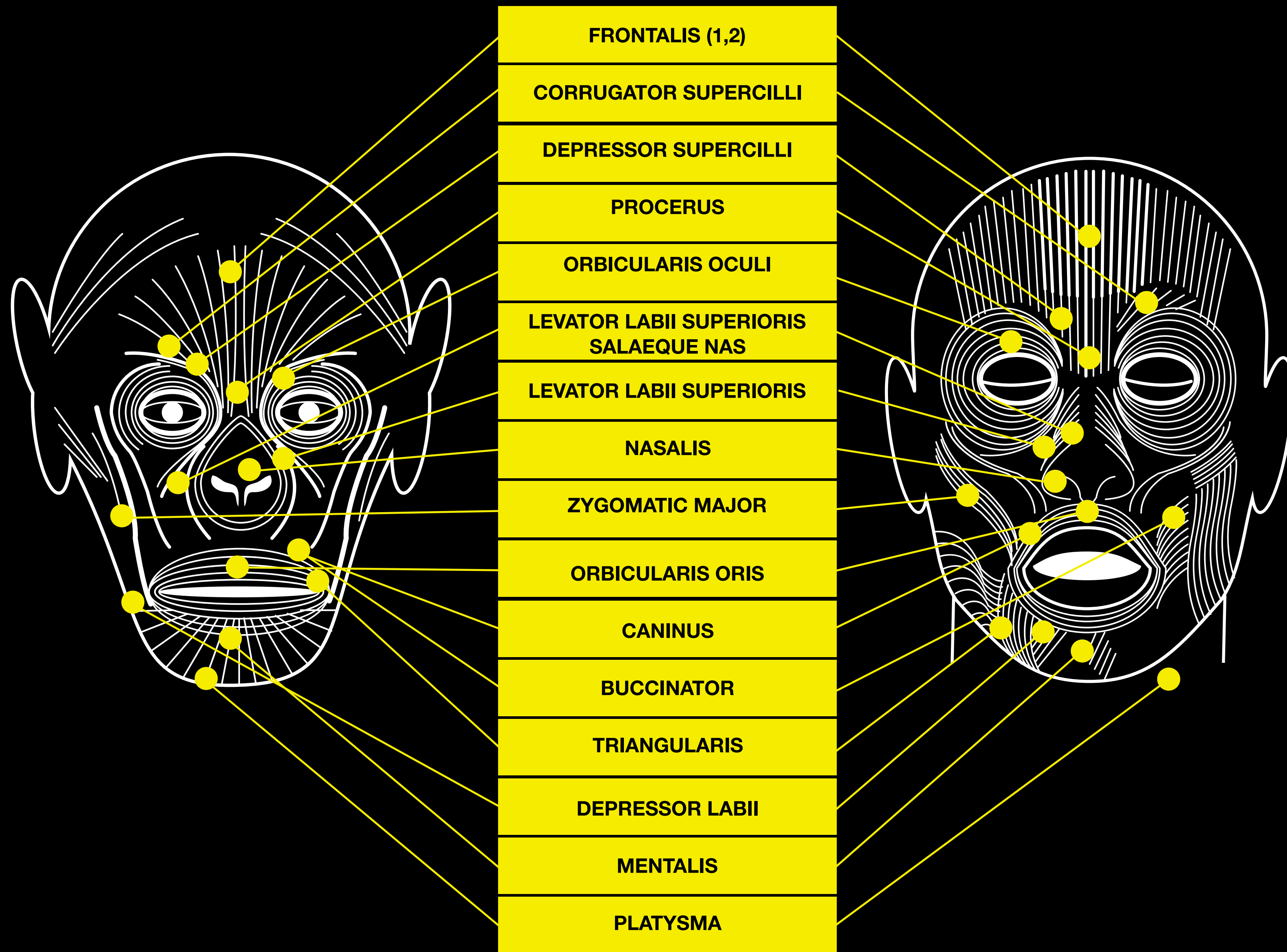
Specific AU combinations reflect emotions

Takes 80-100 hours to train on



Emotional Expressions Chimp (FACS)

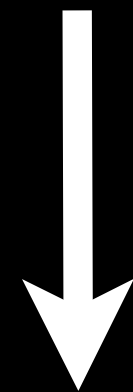




Compared facial musculature



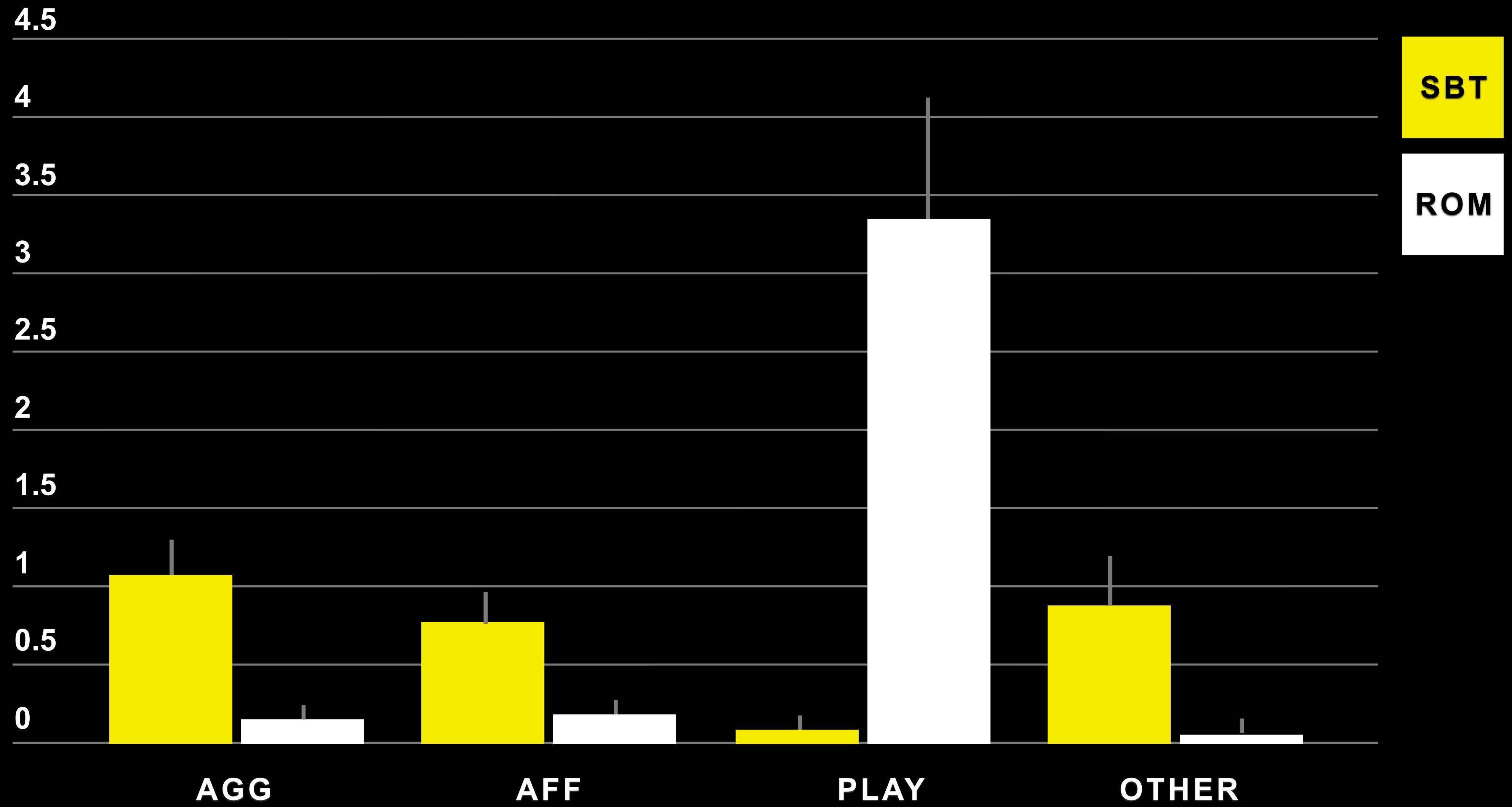
Compared facial landmarks



Arrive at ChimpFACS
www.chimpfacs.com

FREQUENCY OF DISPLAYS IN DIFFERENT CONTEXTS

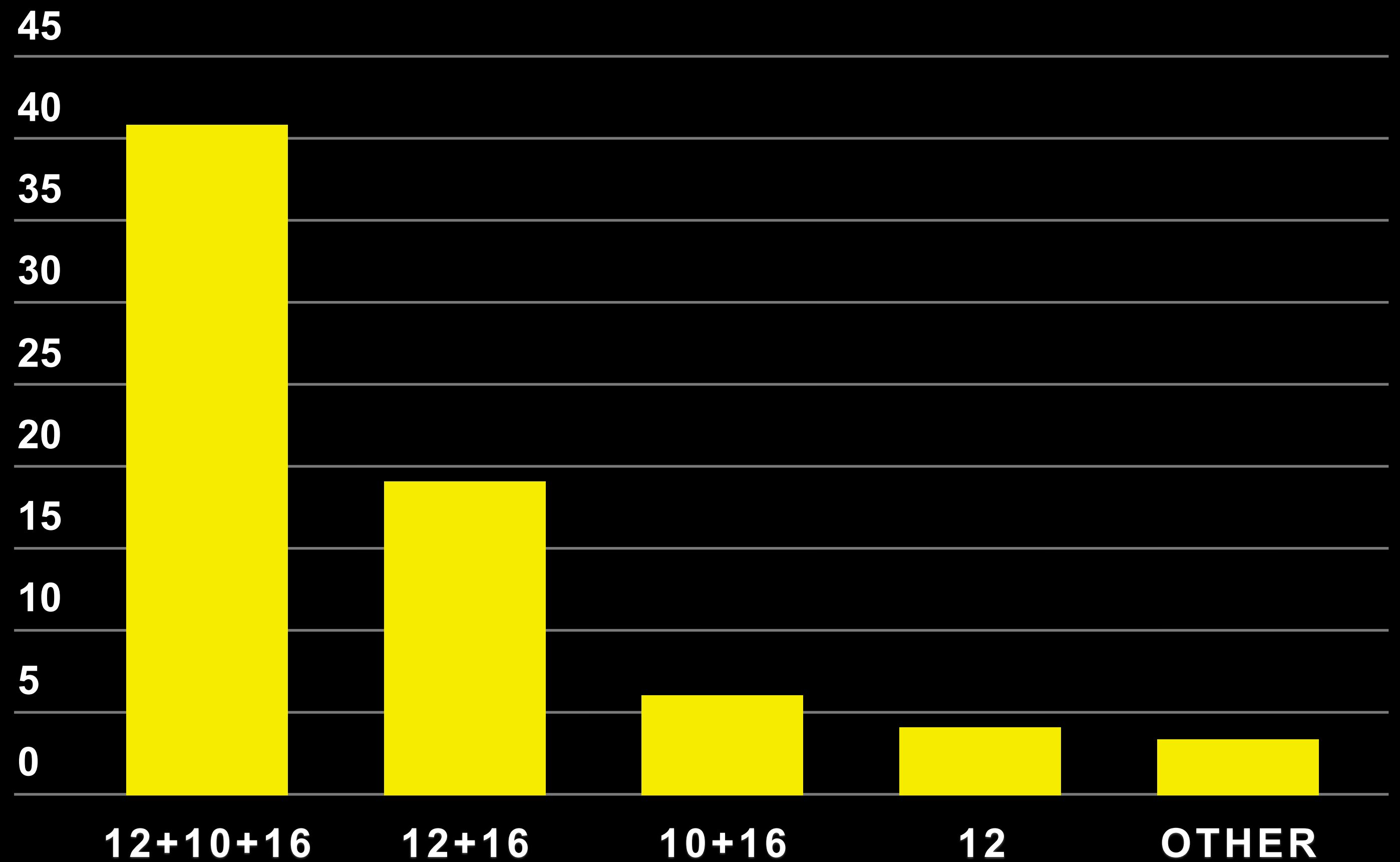
(Mean + SE)



Emotional Expressions Complex



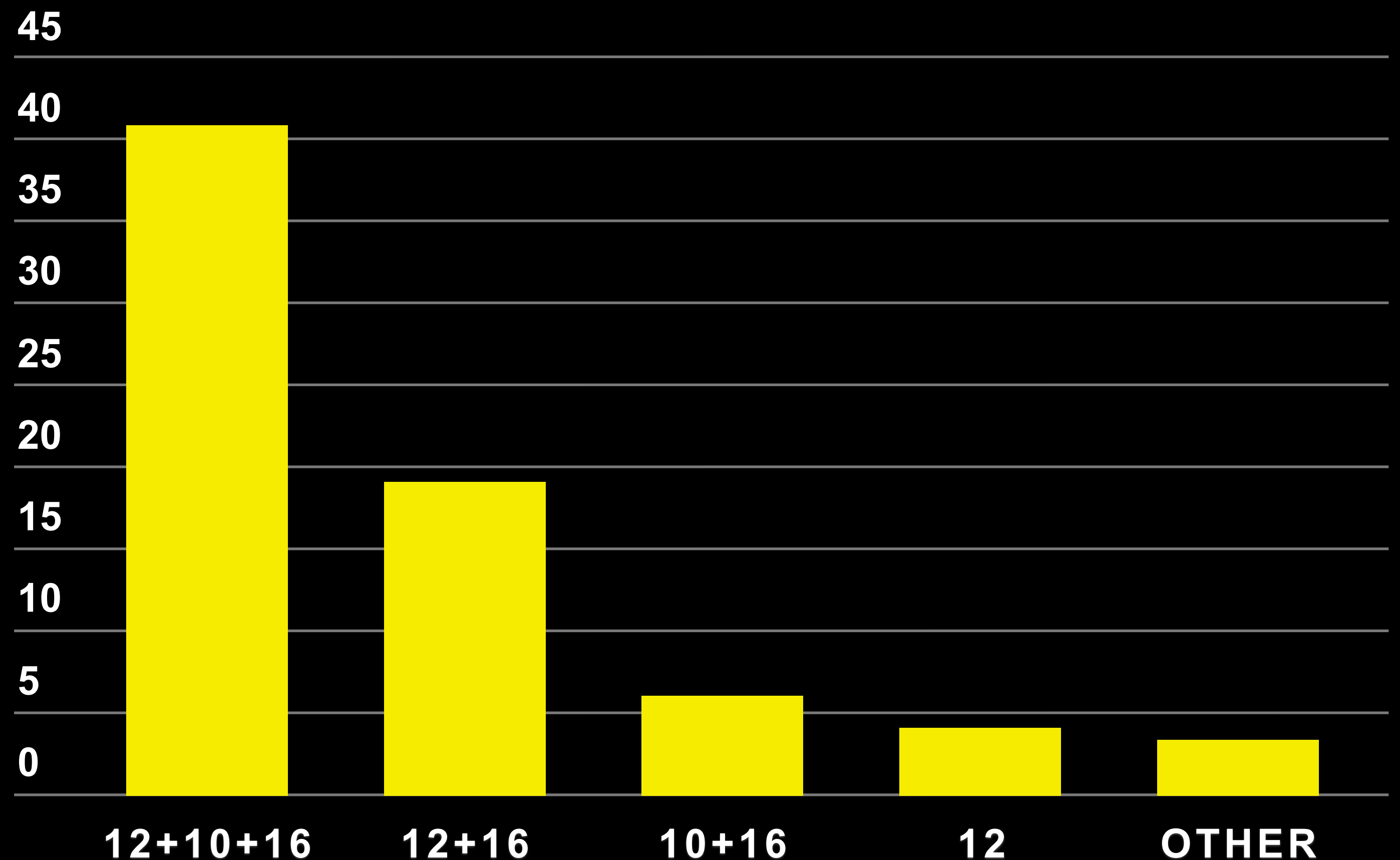
Emotional Expressions Complex



Emotional Expressions Complex

“Like human smiling, there may be meaningful variations in bared-teeth displays”

(van Hooff, 1973)



Emotional Expressions

Can only be properly understood when:

- Careful objective coding of facial expressions are used (e.g., ChimpFACS)
- Focus on underlying emotion signaled by facial expression
- Consider context in which expression is being used to communicate message

Silent-Bared
Teeth Display (SBT)

Silent Bared-Teeth Display
AU10
AU12
AU16
AU25



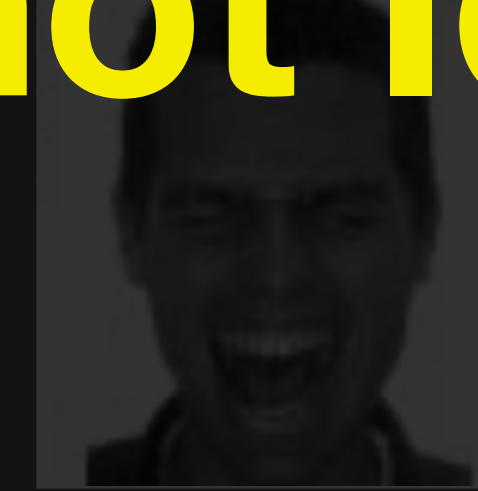
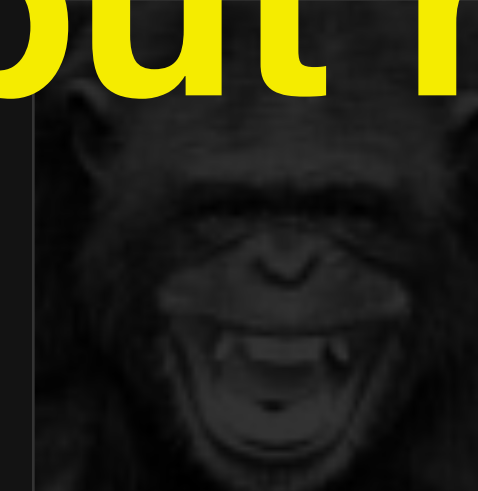
Smile
AU6
AU12
AU25

Smiling

Similar, but not identical

Scream

Scream
AU10
AU12
AU16
AU25
AU27



Scream
AU4
AU16
AU6
AU25
AU7
AU27
AU10
AU12

Scream

Relaxed Open
Mouth (ROM)

Relaxed Open Mouth
AU12
AU25
AU26



Laughter
AU12
AU25
AU26

Laughter

Emotion Experience



Complex Emotions Empathy



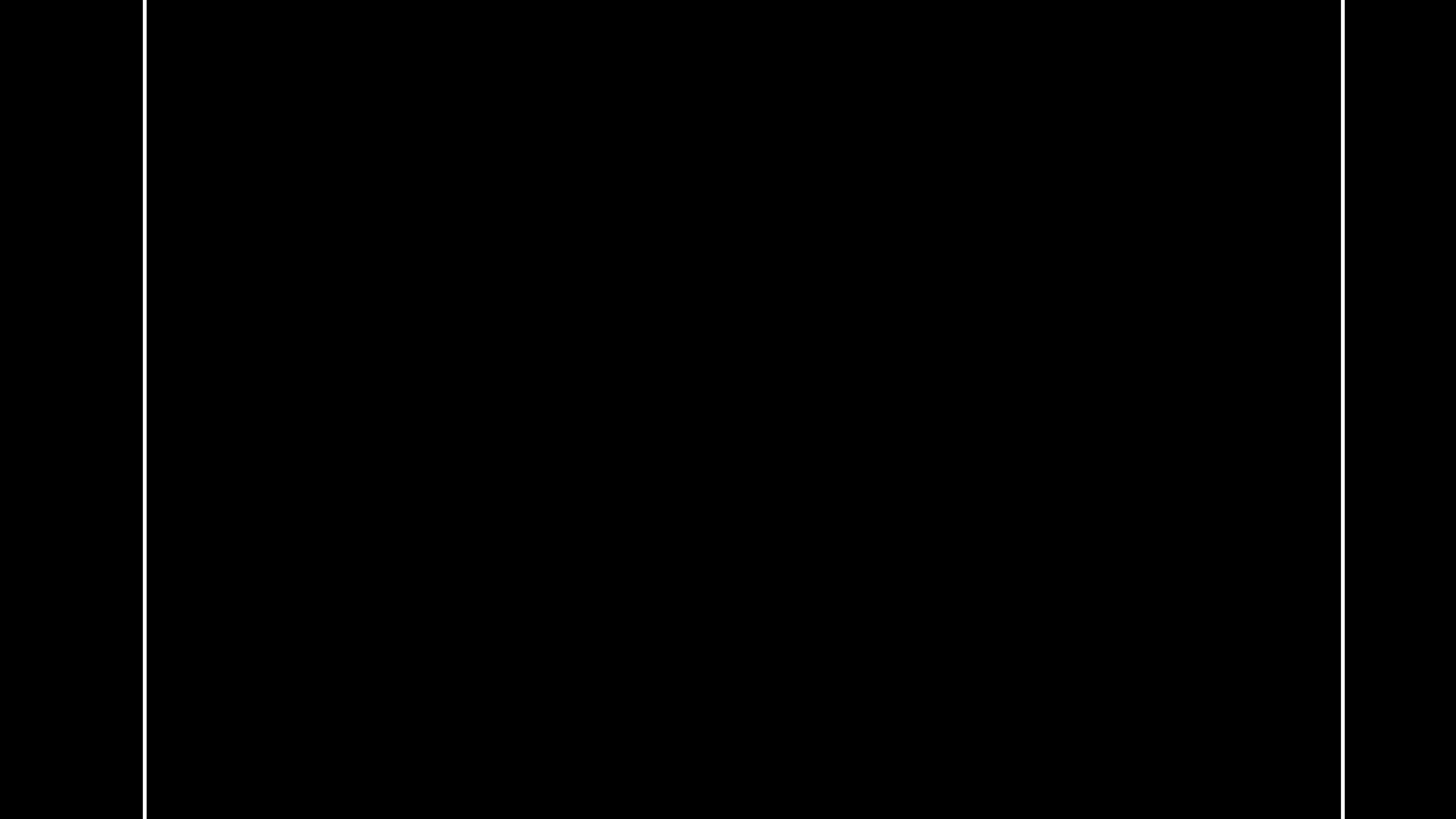
Empathy

- Ability to put yourself in another individual's shoes.
- Need a "theory of mind" or ability to mentalize others internal emotions.

Frans de Waal

- Empathy in all species who live in groups
(Preson & de Waal, 2002).

- Necessary for: (1) Group alarm and
(2) Mother-infant relationship



Caveats

Careful not to anthropomorphize
ascribe human qualities to non-human entities

Lack of confirmatory self-report data

**Behavioral similarity does not =
same psychological experience of emotion**

Roadmap

Course Logistics

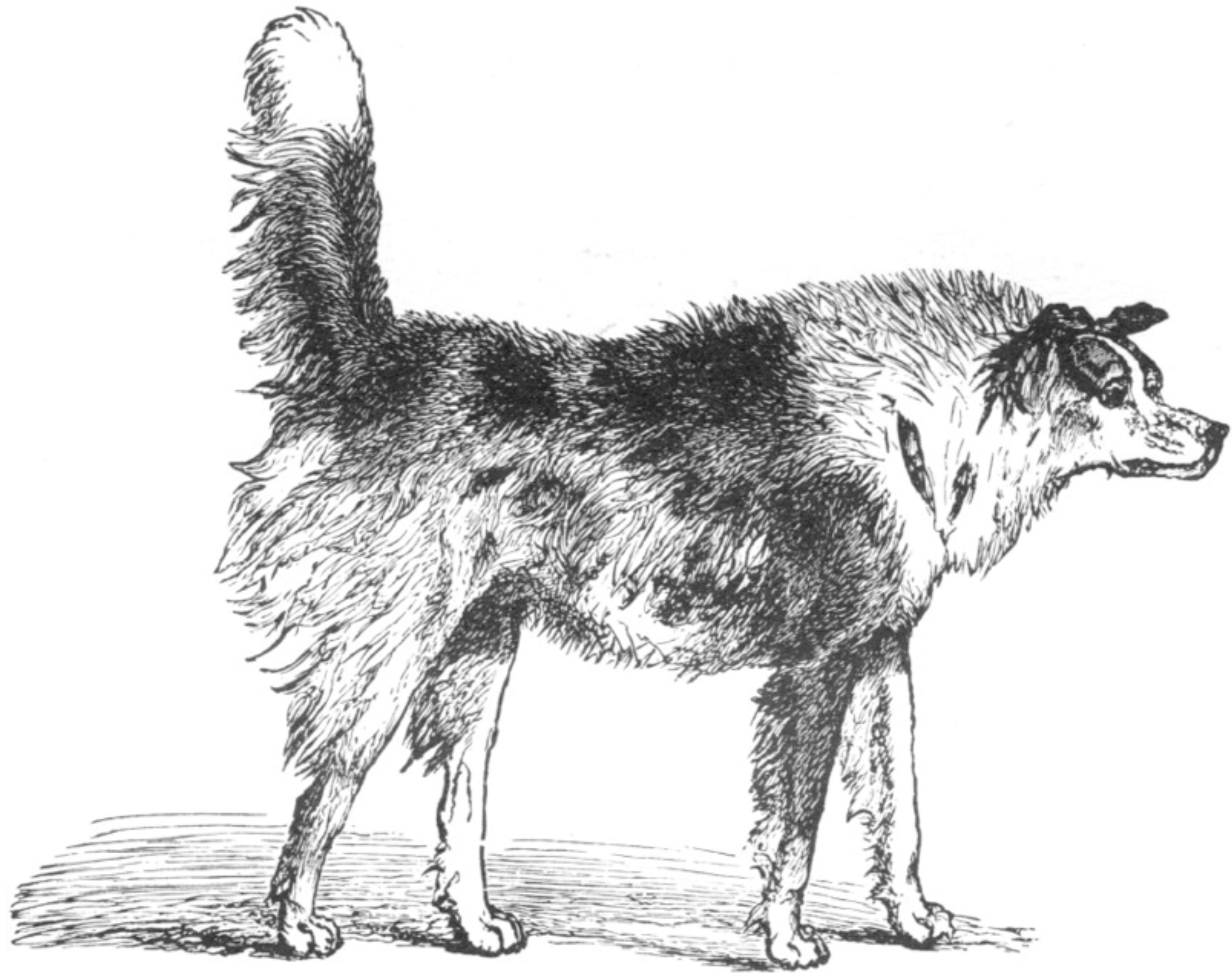
Why Study Animals?

Premises & Methods

Monkey See, Monkey Feel?

Canine Compassion & Rodent Rapture

Take-Away Qs





Canine Compassion Tail Wag

Asymmetric Tail Wag

- 30 dogs placed in cage with camera
- View (1) owner, (2) unfamiliar human, (3) cats, and (4) unfamiliar dominant dog

Left Tail Bias (RH = negative emotion):
Unfamiliar dominant dog

Right Tail Bias (LH = positive emotion):
owners, unfamiliar humans, cats



Canine Compassion Guilt

The screenshot shows a web browser window with the URL 'insideofadog.com'. The website has a dark red header with the title 'INSIDE OF A DOG' and the author's name 'ALEXANDRA HOROWITZ'. Below the header is a navigation menu with icons and labels for 'Home', 'Excerpts', 'Reviews', 'Events', and 'Author'. The main content area features a large image of a dog's face on the left, with the book cover text 'INSIDE OF A DOG: WHAT DOGS SEE, SMELL, AND KNOW' by Alexandra Horowitz. To the right of the dog image is a photo of the author, Alexandra Horowitz, sitting with a black dog. Below the author photo is a short bio titled 'What is it like to be a dog?' and a quote from the book. Further down, there is a section titled 'Buy the book' with links to purchase the book at various retailers and in different languages.

Inside of a Dog
ALEXANDRA HOROWITZ

Home Excerpts Reviews Events Author

INSIDE OF A DOG
WHAT DOGS SEE, SMELL, AND KNOW
ALEXANDRA HOROWITZ

cover photo by Erin Vey

What is it like to be a dog?

In *Inside of a Dog*, Alexandra Horowitz evokes the dog's perspective by interweaving the science of dog cognition and perception with personal reflections on her own dog's behavior. Ranging from what it might be like to be able to smell sadness in humans or the passage of time; how the smallest Chihuahua can play with the most formidable Great Dane; the experience of hearing the hum of fluorescent lights; to why some dogs relentlessly pursue bicycle or ball, *Inside of a Dog* gives us insights into how dogs view the world. This book gives anyone who lives with, deals with, or admires dogs a new understanding of their sensory abilities, a nuanced interpretation of their behavior, and an appreciation of their minds.

photo by Vegar Abelsnes

52 weeks as a New York Times bestseller!

Buy the book

- at an independent bookstore
- as an audio book
- at Amazon
- at Barnes & Noble
- in the UK (Simon & Schuster UK)
- in French (Flammarion)
- in German (Springer)
- in Italian (Oscar Mondadori)
- in Spanish (RBA Libros)

Publicity: Scribner Speaking engagements: Kris Dahl, ICM



Canine Compassion Guilt

Do dogs really feel guilty?

- 14 dogs videotaped repeatedly
- Coded for “guilty look” presence when disobeying owner’s command (not eat treat while owner was away) and varied whether owner’s knew of dogs behavior.
- No evidence of guilty look.
- Guilty look found more often when owners scolded dogs.
- Suggests guilt may be response to owner cues rather than appreciation of misdeed.

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What Are Animals Thinking?

Probe animal morality, the "swarm intelligence" of a beehive, the amazing navigation talents of pigeons, and more. **Aired November 7, 2012 on PBS**



What Are Animals Thinking?

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Canine Compassion Empathy



Dogs can read our feelings

- 18 pet dogs
- 4 separate 20-second encounters with humans (owners and strangers)
- Humans either hummed, talked, or cried
- Dogs most often comforted person by nuzzling and licking when human was crying

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Animal cognition

Man's best friend

Can dogs really show empathy towards humans?

Jun 30th 2012 | from the print edition

Like 1.4k Tweet 103

DOGS quickly become part of the family. Tales abound of dogs celebrating joy in a household or commiserating when tragedy strikes. This may not seem surprising after 15,000 years of co-evolution. But what hard evidence is there of dogs' empathy with humans? A new experiment suggests that behind all the waggy tails there really is something deeper going on.

Past experiments have hinted that animals can feel sympathy. Rats and monkeys had been found to forgo food to avoid delivering electric shocks to relatives. Similarly, apes have recently been documented consoling one another after conflicts. However, all these experiments and observations were demonstrating an animal's sensitivity to distress in other members of the same species. Deborah Custance and Jennifer Mayer of Goldsmiths College, London, set out to see if dogs could detect the emotional state of humans.



Rex Features

I feel your pain

Comment (35)

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SES[^]

Over 258 million homes reached worldwide

Where audiences grow via satellite

Recent Activity

Login

You need to be logged into Facebook to see your friends' recent activity.



No deal, but no drama

155 people recommended this.



What can James Bond's nemeses teach us?

636 people recommended this.



Ahn bows out

201 people recommended this.

Canine Compassion Empathy



“I think there is good reason to suspect dogs would be more sensitive to human emotion than other species”

- Deborah Custance

THE EMOTIONAL LIVES OF ANIMALS

A Leading Scientist Explores Animal Joy,
Sorrow, and Empathy — and Why They Matter



“A glorious, moving, important
book to enjoy and share.”
— INGRID NEWKIRK

MARC BEKOFF
FOREWORD BY JANE GOODALL

INSIDE OF A DOG

WHAT DOGS SEE, SMELL, AND KNOW

ALEXANDRA HOROWITZ



Rodent Rapture



Roadmap

Course Logistics

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Take-Away Qs

Roadmap

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Laughter

Crying

Touch

Take-Away Qs & Expert Interview



Ubiquity of Laughter

- We laugh about 17 times per day.
- We have industries devoted to making us laugh.
- Borat grossed \$68 million in first 10 days
Seinfeld one of most popular TV shows of all time.



Laughter Reflection Exercise

Take 2-3 minutes: write this down

What did you notice:

- (1) Elicitor?
- (2) What is going on in your body?
- (3) Features of laugh (what did it sound like?)
- (4) How long did it last?
- (5) Any possible social effects?
- (6) How did you feel after you laughed?

Evolution of Laughter

What's in a Laugh?

Series of “sigh” exhalations

- Exhale = heart rate decreases
- Slows down heart rate, Signal to “rest and digest”

Brief acoustic bouts

- Series of staccato movements about 1/15 sec each
- Vowel-like utterances (e.g., ha-ha, ho-ho)

Laughter precedes language

- Emerged 4 million yrs ago, before humans put vowels & consonants together

Built for Laughter?

15 facial muscles contract during laughter

Respiratory system:

larynx partially closed, so air intake occurs irregularly, causing gasping

Tear ducts activated (at times)

Face Becomes Red/Purple (at times)

As mouth opens and closes, struggle for oxygen intake continues, leading to red/purple color in face.

What does laughter sound like?

Laughter Dictionary

Jo-Anne Bachorowski

Developed a “Laughter Dictionary”

Not all laughs are alike

Cackles, hisses, pants, snorts,
grunts, songlike laughs



Bachorowski (2001, 2003)

**Voiced
Songlike
Female**

**Voiced
Songlike
Male**

**Unvoiced
Snort &
Pant Male**

**Unvoiced
Grunt
Female**

**Unvoiced
Snort
Male**

**Unvoiced
Snort &
Cackle Male**



Bachorowski (2001, 2003)

Audio files courtesy of Jo-Anne Bachorowski

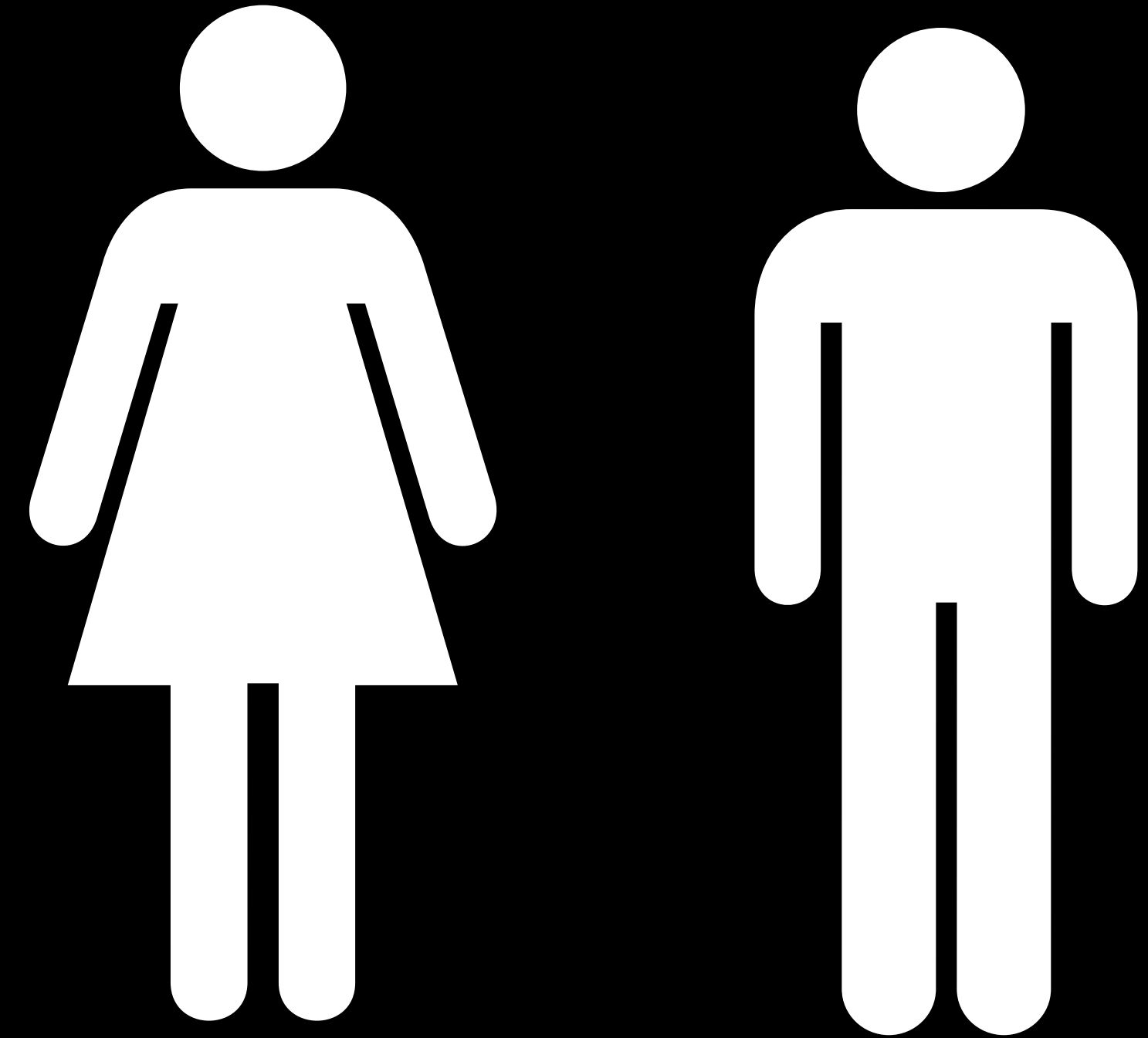
Gender Differences

Women

Laugh more frequently than men

Men

Laughs contain more snorts and grunts than women



Laughs Elicit Reactions

Voiced Laughs

-- perceived by others as signs of camaraderie

Unvoiced Laughs

-- unvoiced laughs (hisses, grunts, snorts) =
not perceived as affiliative



Friends Laugh Differently

Friends

Vocalizations become overlapping and intertwined
Acoustic properties of laugh mirror each other
Called “Antiphonal laughter”

Laughter Builds Friendship

Unites people in brief 2-3 second periods of
antiphonal laughter



What makes us laugh?



What Makes Us Laugh?

Triggers of Laughter - Robert Provine



(1) Examined triggers of laughter

(2) Secretly recorded bursts of laughter

Malls, street corners, cafeterias, etc.

1,200 laughs audiotaped & transcribed

(3) Humor Preceded 10-20% Laughs

“You just farted!”

What Triggers Laughter?

(The Other 80%)

“I see your point”

“I hope we all do well.”

“I told you so!”

“Are you sure?”

“What is this supposed to mean?”

ROBERT R. PROVINE
LAUGHTER
A SCIENTIFIC INVESTIGATION



Benefits of laughter

Why is Laughter Good for Us?

Example 1

Laughter builds social bonds



Laughter Builds Social Bonds

Two Ways

1. Social Contagion

- We routinely laugh at the sound of another person's laughter
- Mirror neuron system in brain

2. Reward Value

- Mutually beneficial social exchanges
- Signals appreciation and shared understanding
- Evokes pleasure (endorphins released, reward-circuit in brain stimulated)

Why is Laughter Good for Us?

Example 2

Laughter promotes recovery from negative emotions

Laughter **Best Medicine?**



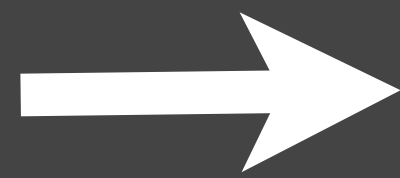
Physiological features that make laughter healthy

- Reduces presence of stress hormones
- Decreases muscle tension
- Increases positive immune markers
- In diabetics, less increase in blood sugar after a meal



Laughter “Undoing Hypothesis”

EXPERIMENTAL PROCEDURE



PART I:
Fear Film “Ledge”

PART II:
Amusing Film
LAUGHTER

EMOTION MEASUREMENTS



Physiology

Laughing at Death

Laughter following bereavement predicts better outcomes

(1) 45 Adults: Death of Spouse in Past 6 months

- Question: Does laughter promote healing?

(2) Interview with Spouses

- “Tell me about your relationship with your deceased partner.”
- 6 minutes to share narrative

(3) Coded expressions of laughter

- Laughter predicts reduced grief at 14 & 25 mos. post-loss



Roadmap

Course Logistics

Laughter

Crying

Touch

Take-Away Qs & Expert Interview

Exam: Grade Distribution & Hand Back



Boys Don't Cry

The Cure



The Crying Game

Boy George





U.S. POLITICS

CHANGE TEXT SIZE - +

10 Politicians Who Turned on the Tears in Public From Obama to Muskie

Nov 10, 2012 4:45 AM EST

President Obama cried this week while thanking campaign workers in Chicago. See John Boehner, Hillary Clinton, Newt Gingrich, and others get misty.

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Barack Obama



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Crying Reflection Exercise

Take 2-3 minutes: write this down

What did you notice:

- (1) Elicitor?
- (2) What is going on in your body?
- (3) Features of cry (what did it sound like?)
- (4) How long did it last?
- (5) Any possible social effects?
- (6) How did you feel after you cried?

Theories of crying

*“It is a relief to weep;
grief is satisfied and carried off by
tears.”*

Ovid (43 BC-17 AD)

1. Popular Articles: Crying is healthy

- Analysis of 140 years of popular articles about crying
- 94% suggest crying is beneficial
- Suppressing tears is deleterious to body and mind

2. Cross-cultural study: Crying is cathartic

- Survey spanning 30 countries
- People report feeling better after crying

3. Psychodynamic Theories

- Blocking tears --> Causes Psychological Damage
- Encourage clients to cry in therapy sessions

4. Biochemical Theories

- Tears rid body of harmful toxins

Is Crying Really Healthy?



Where's the Evidence?

Contextual Factors

Crying Depends on Context

Example 1

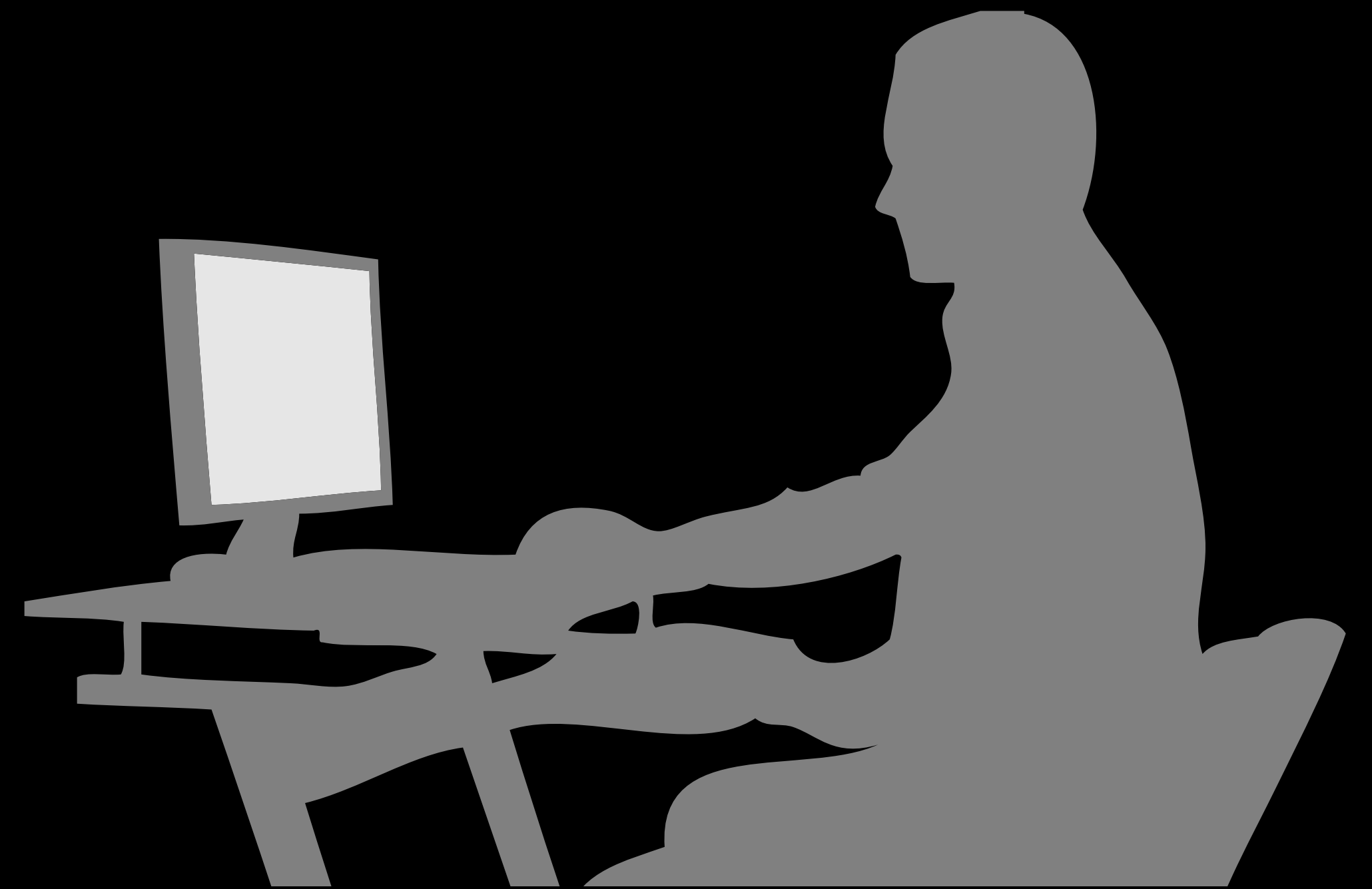
Depends on how you measure crying



SURVEYS

Measure benefits of crying retrospectively.

60-70% report crying as cathartic
(less tension, more relief).



LABORATORY STUDIES

Measure right after crying (1-2 min).

Report feeling worse (sad) and more
physiologically aroused when watching
sad films.

Crying Depends on Context

Example 2

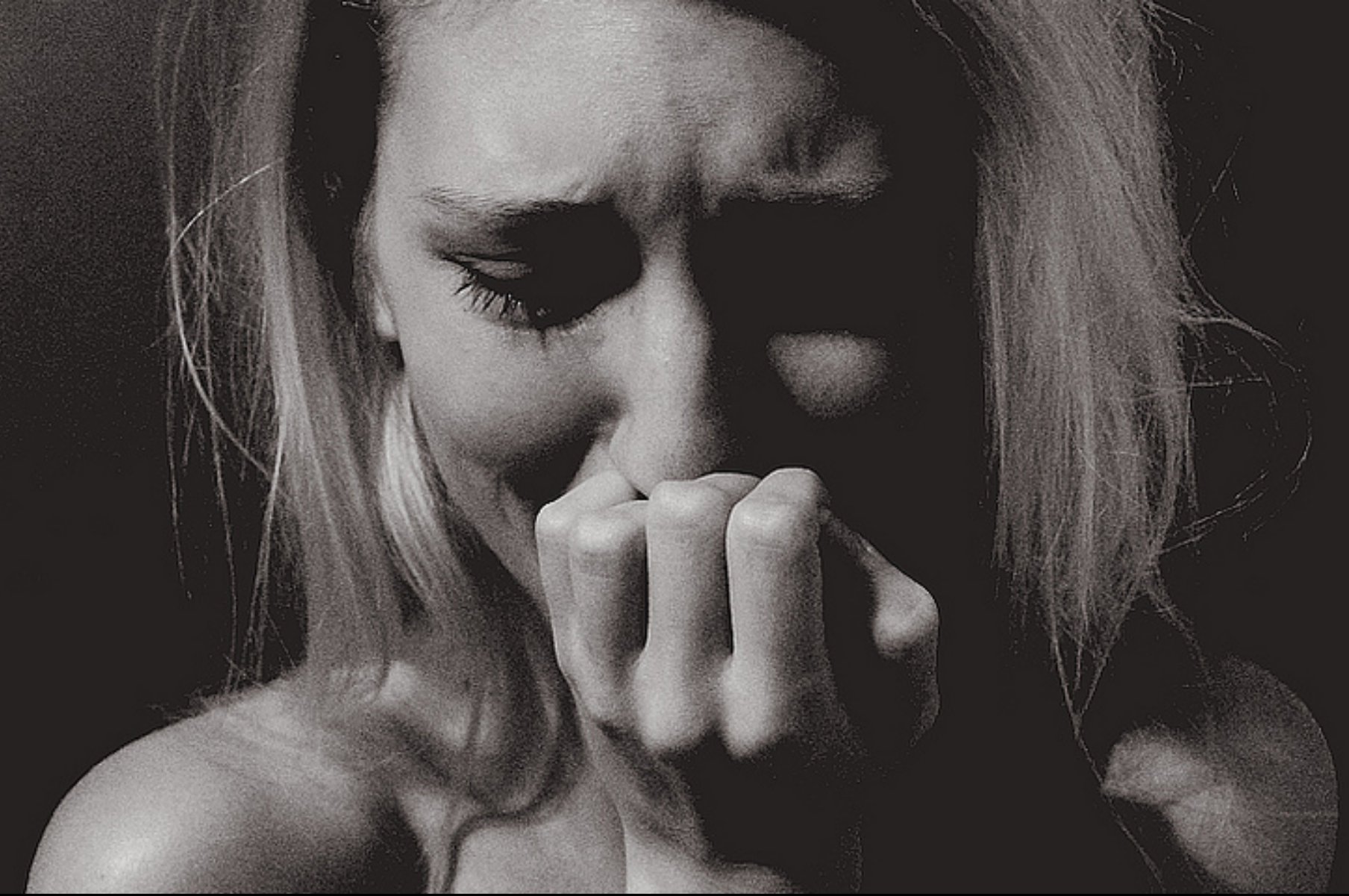
Depends on social context



AROUND OTHERS

- Crying signals others to provide solace and comfort.

- When around others, benefits may come from social support of others comforting the crier.



ALONE

- No one to provide comfort.

- Crying alone does not reap positive health benefits.

Crying Depends on Context

Example 3

Depends on personality and gender of person

PERSONALITY

People who score higher in neuroticism (trait involving emotional instability) have more frequent crying episodes.

GENDER

Adult women cry more frequently and intensely than men

Crying Depends on Context

Example 4

Depends on emotional state of person

Depression

People in a depressed mood experience less improvement in mood after crying

Anxiety

Anxious people less likely to feel better after crying

Tears of Joy?

Restore emotional equilibrium after intense positive emotional experience



More Studies and Data are Needed!

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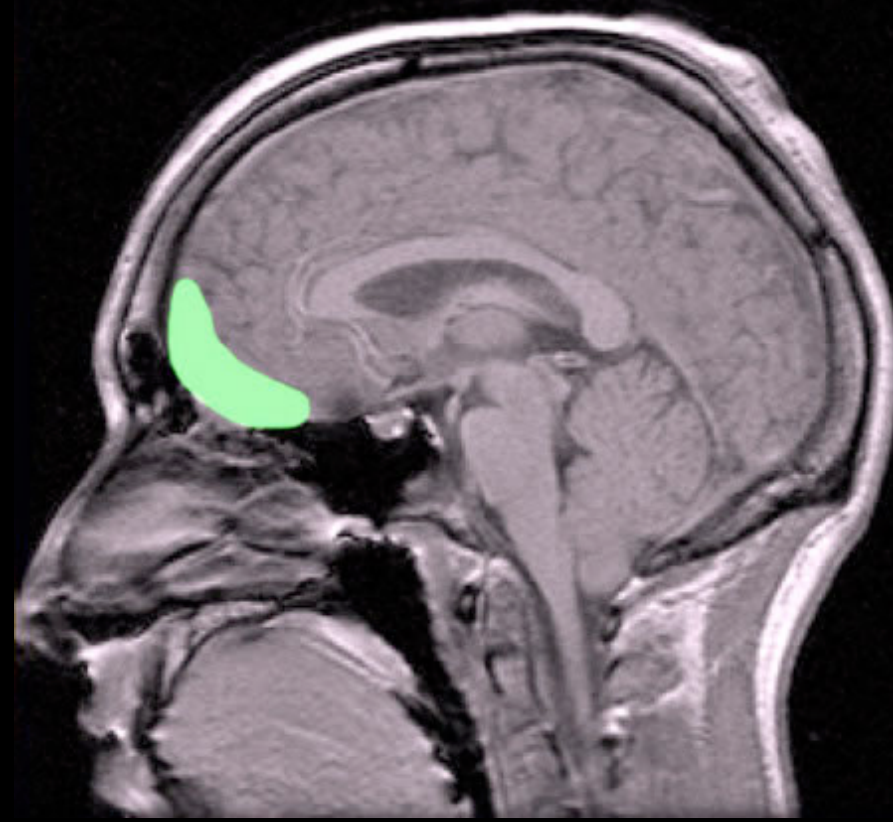
Touch Reflection Exercise

- What sensations?
- What kinds of thoughts going through your mind?
- What expressions on your face?
- Any changes in your tension, stress, etc?



Rewarding & Soothing Function

Touch is Rewarding



Orbitofrontal Cortex (OFC)

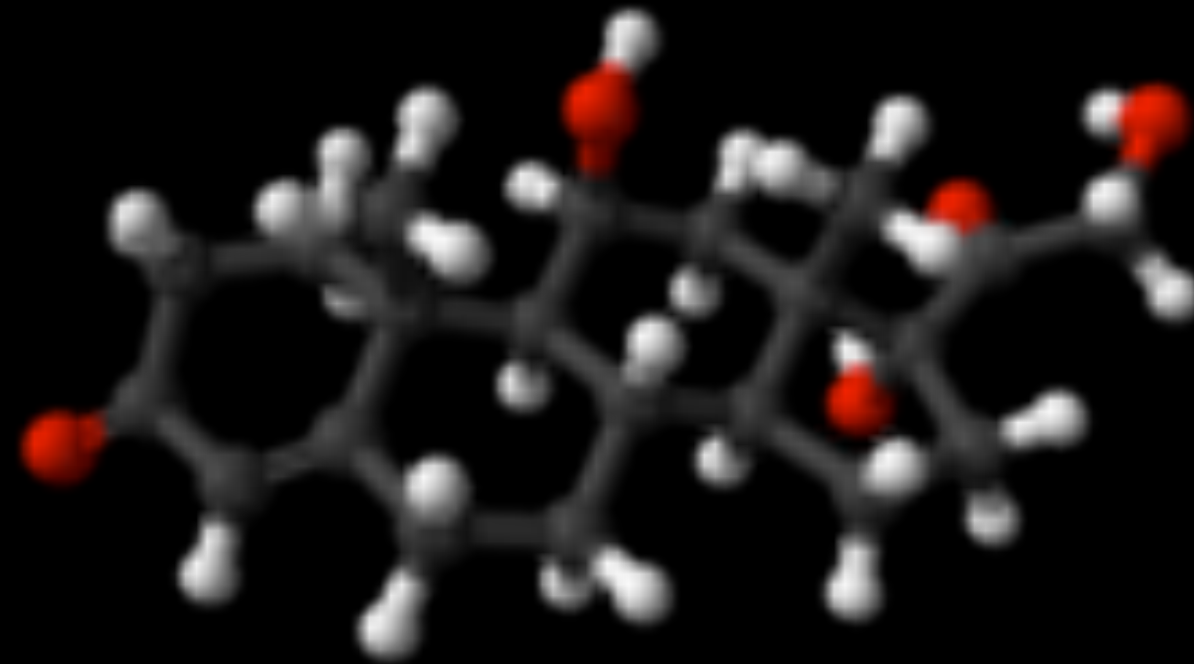
OFC associated with encoding reward value
Associated with self-reported pleasantness



Touch and OFC

Touching arm with velvety cloth activates OFC

Touch is Soothing



Cortisol

- Aka “stress hormone”
- Associated with increased reports of negative affect & stress

Oxytocin

- Aka “the love hormone”
- Associated with love, trust, and feelings of closeness

15-minute Swedish Massage

- Draw blood while receiving massage
- Associated with increased oxytocin & decreased cortisol



Touch is Soothing



Amygdala

- Located deep within medial-temporal lobes
- Activation in amygdala associated with stress and negative emotional responses

Awaiting Electric Shock in fMRI Scanner

- 16 Married Women
- 3 Conditions: (1) Alone vs. (2) Stranger hand holding vs. (3) Husband hand holding
- Amygdala response:

husband's hand < stranger hand < no hand

Touch is Soothing

Infants: Painful Heel Lance Procedure

- Painful procedure for sampling blood
- Study: (1) Infants held/touched by mother during procedure vs. (2) No touch
- Results: Infants touched cried 62% less, grimaced 65% less, & lower heart rate during procedure

Cooperation

Touch Increases Cooperation

Petition Signing

- Participants asked to sign petition supporting local issue
- Touched: 81% signed
- Not Touched: 55% signed

Cooperation (Robert Kurzban)

- Play prisoner's dilemma game (can cooperate or compete with fellow player)
- Experimenter touched on back (vs. not) before game started
- When touched, more likely to cooperate

Communication of Emotion

The New York Times

**Five-Second Touch Can Convey Specific Emotion,
Study Finds**



http://www.nytimes.com/2009/08/11/science/11touch.html?_r=0

1st Person Touchee:

Please extend arm under curtain.



2nd Person Toucher:

“Think about how you want to communicate the emotions. The touches can take any form, and last as long as you think they need to. Try to be expressive as possible in your touch.”

Negative:

Anger, Fear,
Disgust, Sadness

Positive

Love, Gratitude,
Awe



What emotion is this person expressing?

To Touchee:

Please select which emotion was being expressed by the touch?

Anger

Fear

Disgust

Love

Sympathy

Gratitude

Embarras

sment

Pride

Envy

etc



Communicate Distinct Emotions

TOUCH COMMUNICATES (6 emotions)

Anger - Hitting or squeezing

Fear - Trembling

Disgust - Pushing and lifting arm

Love - Stroking, finger interlocking

Sympathy - Patting, stroking, rubbing

Gratitude - Hand shake

TOUCH DOES NOT COMMUNICATE

More cognitively complex self-focused emotions

Embarrassment, Envy, Pride

Fashion Food Recipes Love & sex Home & garden **Health & fitness** Family Travel Money

Health

No hugging: are we living through a crisis of touch?

Paula Coccozza

@CoccozzaPaula

Wed 7 Mar 2018 09.46 EST



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▲ Illustration by Harriet Lee-Merrion

Roadmap

Course Logistics

Laughter

Crying

Touch

Take-Away Qs & Expert Interview



Experts In Emotion

***EXTRA CREDIT
OPPORTUNITY***

Experts In Emotion Interview

Dr. Jo-Anne Bachorowski

Professor of Psychology
Vanderbilt University

Laughter



Thank You!

Psychology 3131
Professor June Gruber

