

# Universality of Emotions

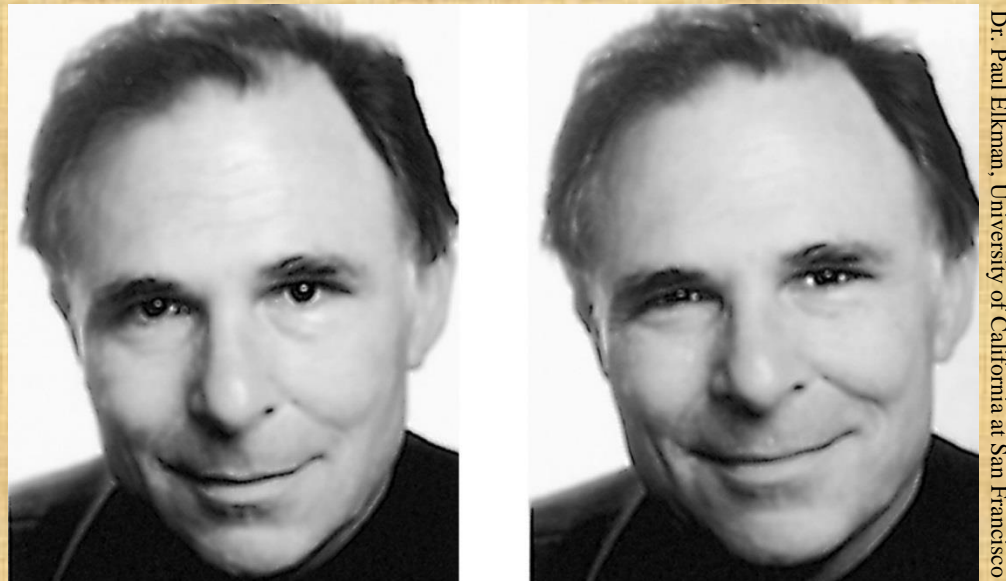


- Despite different languages, cultures and social norms, studies suggest that people "speak and understand substantially the same 'facial language' the world around."



# Detecting and Computing Emotion

Most people find it difficult to detect deceiving emotions. Even trained professionals like police officers, psychiatrists, judges, and polygraphists detected deceiving emotions only 54% of the time.

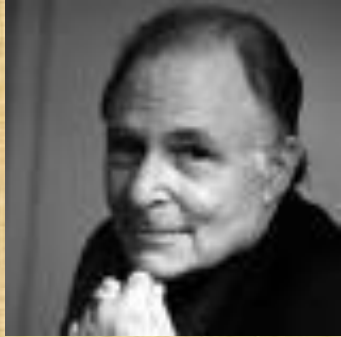


Dr. Paul Ekman, University of California at San Francisco

Which of Paul Ekman's smiles is genuine?

# Paul Ekman - Seven Basic Emotions

- Ekman, a leading psychologist in emotions, suggests humans everywhere can recognize seven basic emotions: *sadness, fear, anger, disgust, contempt, happiness and surprise.*

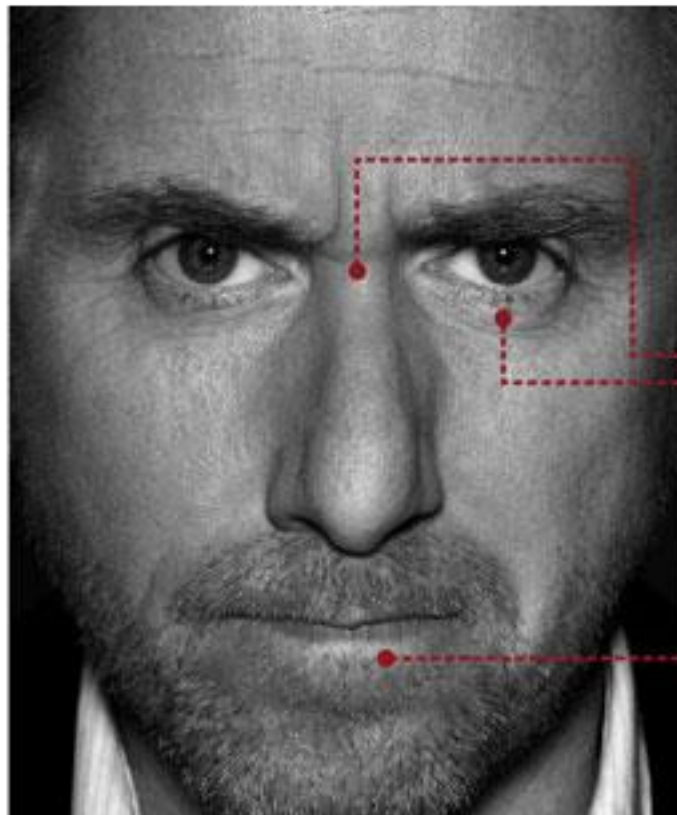


He says that these are  
**Universal emotions**

Here is a sample of 6  
of Ekman's emotions.  
Which one is missing?



# Anger



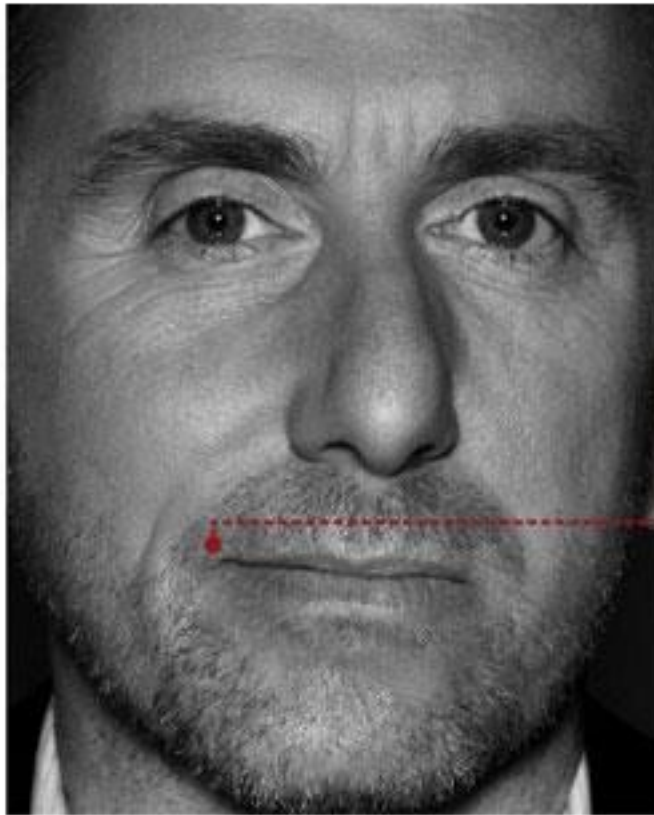
**anger**

① eyebrows down  
and together

② eyes glare

③ narrowing of the lips

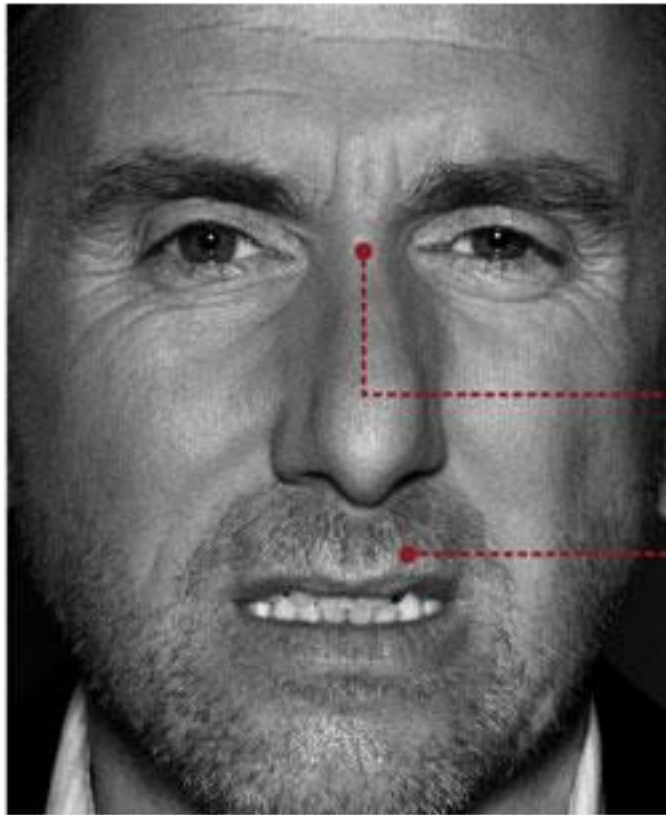
# Contempt



**contempt**

① lip corner tightened  
and raised on only  
one side of face

# Disgust



**disgust**

① nose wrinkling

② upper lip raised

# Fear

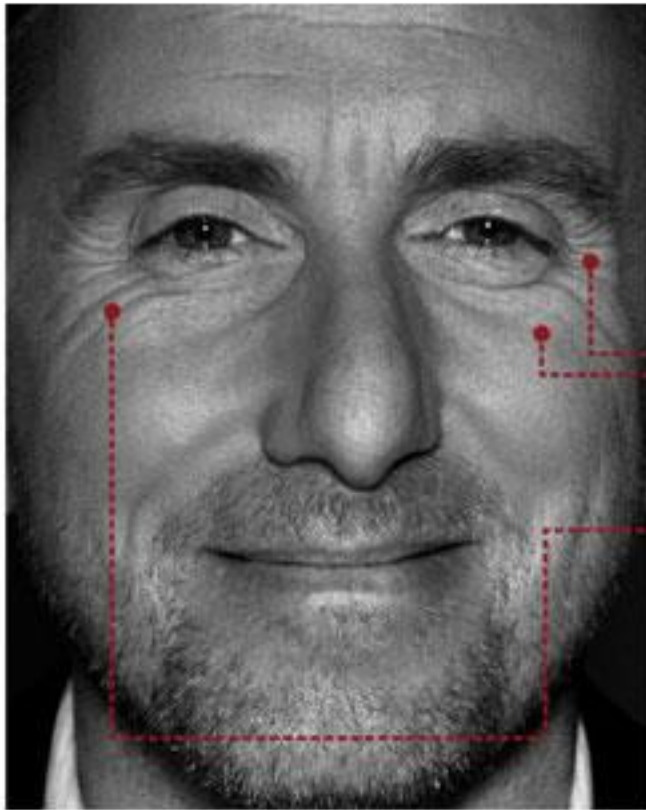


## fear

- ① eyebrows raised and pulled together
- ② raised upper eyelids
- ③ tensed lower eyelids
- ④ lips slightly stretched horizontally back to ears



# Happiness



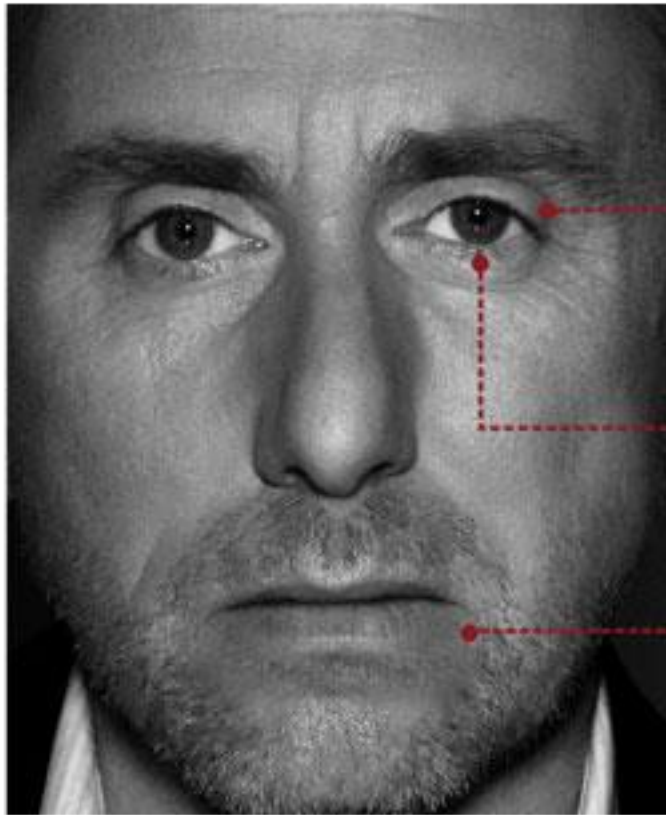
## **happiness**

A real smile always includes:

- ① crow's feet wrinkles
- ② pushed up cheeks
- ③ movement from muscle that orbits the eye



# Sadness



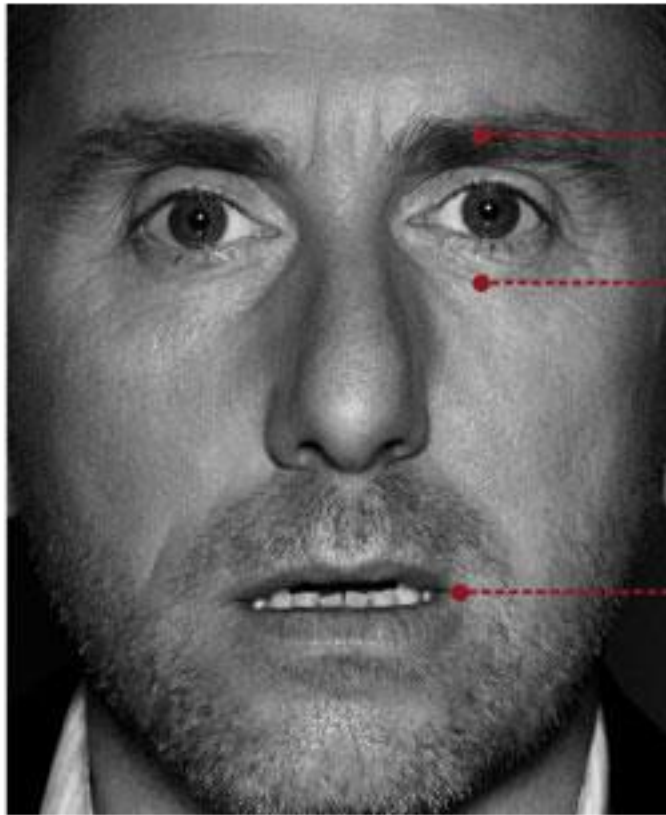
**sadness**

① drooping upper eyelids

② losing focus in eyes

③ slight pulling down of lip corners

# Surprise



## surprise

Lasts for only one second:

① eyebrows raised

② eyes widened

③ mouth open

# Paul Ekman - Microexpressions





# Nonverbal gestures & emotion

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**Thumb extended up  
with closed fingers**

**In North America, Russia, and  
France, it normally means  
"Good job!" or "Excellent!"**

**In Nigeria it is a rude gesture,  
expressing strong disapproval.**

**In Japan, China, and Korea, it is  
used in counting, and means  
"four."**

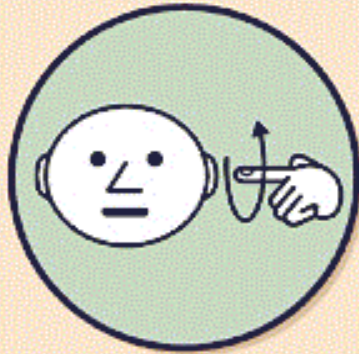
## **Gestures and Their Meanings**

### **Gestures and Their Meaning Around the World**

**Source: Data from Calbris (1990); Manahan  
(1983); and Schneller (1992)**

# Nonverbal gestures & emotion

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**Index finger at ear and  
rotated in a circle**

**In Argentina it means that someone is wanted on the telephone-probably a vestige of the old, hand-cranked phones.**

**In North America, Russia, Japan, France, and Germany, it means "Something is wrong with his (or her) head" or "They're crazy."**

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**Thumb and index finger  
forming a circle**

**In Laos and France it means  
"Bad," "Zero," or "Worthless."**

**In Japan it means "money."**

**In North America and Russia it  
means, "That's good!"**

**In Arab states (accompanied by  
a baring of the teeth) it expresses  
extreme hostility.**

## **Gestures and Their Meanings**

### **Gestures and Their Meanings Around the World**

**Source: Data from Calbris (1990); Manahan (1983); and Schneller (1992)**



# *Are there cross-cultural differences in recognition accuracy rates?*

- Americans are better at recognizing anger, disgust, fear, and sadness than Japanese.
  - Cultural source of these differences may be individualism.
  - Individualism is associated with better recognition of anger, fear, and happiness.

## **Display rules**

- **A social group's informal norms about when, where, and how one should express emotions.** (Determines what is an “appropriate reaction”).
- **Controlled, voluntary expressions, “top-down.”**
- **When those rules are violated nobody knows quite how to react.**



# UNIVERSAL PAIN ASSESSMENT TOOL

This pain assessment tool is intended to help patient care providers assess pain according to individual patient needs. Explain and use 0-10 Scale for patient self-assessment. Use the faces or behavioral observations to interpret expressed pain when patient cannot communicate his/her pain intensity.





# “Lie Detection”

1. Examiner asks several simple yes/no questions for a “baseline.” (Is your name Thor? Is Kim the best Kardashian?)
  2. Examiner then asks key questions she wants answers to.
  3. Machine measures against baseline looking for changes in body such as heart rate and breathing.
- Any potential problems with this method?



Lie to me\*

# Facial Feedback Hypothesis

- Facial feedback hypothesis - facial expressions provide feedback to the brain concerning the emotion being expressed, which in turn causes and intensifies the emotion.





# Emotions and Autonomic Nervous System

During an emotional experience, our autonomic nervous system regulates and mobilizes energy in the body that arouses us.

Autonomic Nervous System Controls Physiological Arousal		
Sympathetic division (arousing)		Parasympathetic division (calming)
Pupils dilate	EYES	Pupils contract
Decreases	SALIVATION	Increases
Perspires	SKIN	Dries
Increases	RESPIRATION	Decreases
Accelerates	HEART	Slows
Inhibits	DIGESTION	Activates
Secrete stress hormones	ADRENAL GLANDS	Decrease secretion of stress hormones



# The Opponent-Process Theory of Emotion

(Solomon and Corbit, 1974)

Emotional reactions are *biphasic*; a primary reaction is followed by an opposite after-reaction

The primary reaction becomes weaker with repeated stimulations

The after-reaction is strengthened

# Physiological Similarities

Physiological responses related to the emotions of fear, anger, love, and sexual arousal are very similar.

make it stop,  
make it stop  
make it stop  
make it stop



M. Grecco/ Stock Boston

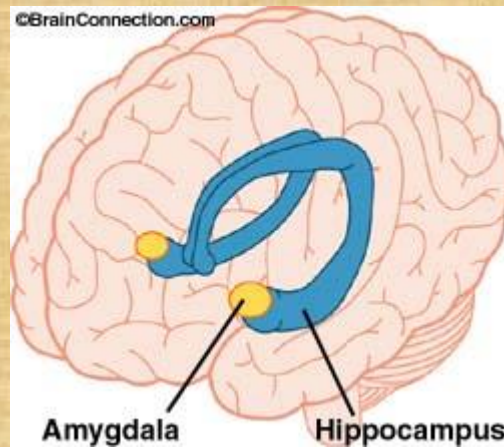
Lets ride this  
all day!

Excitement and fear involve a similar physiological arousal.

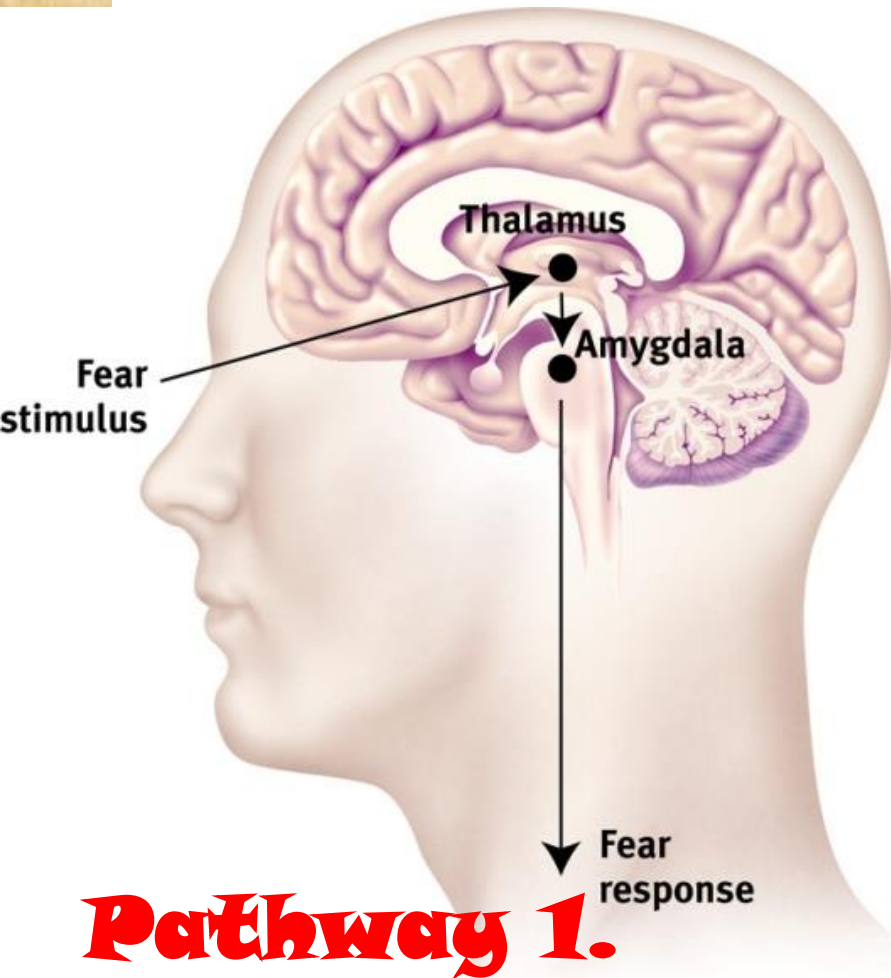


# Origins of Emotions

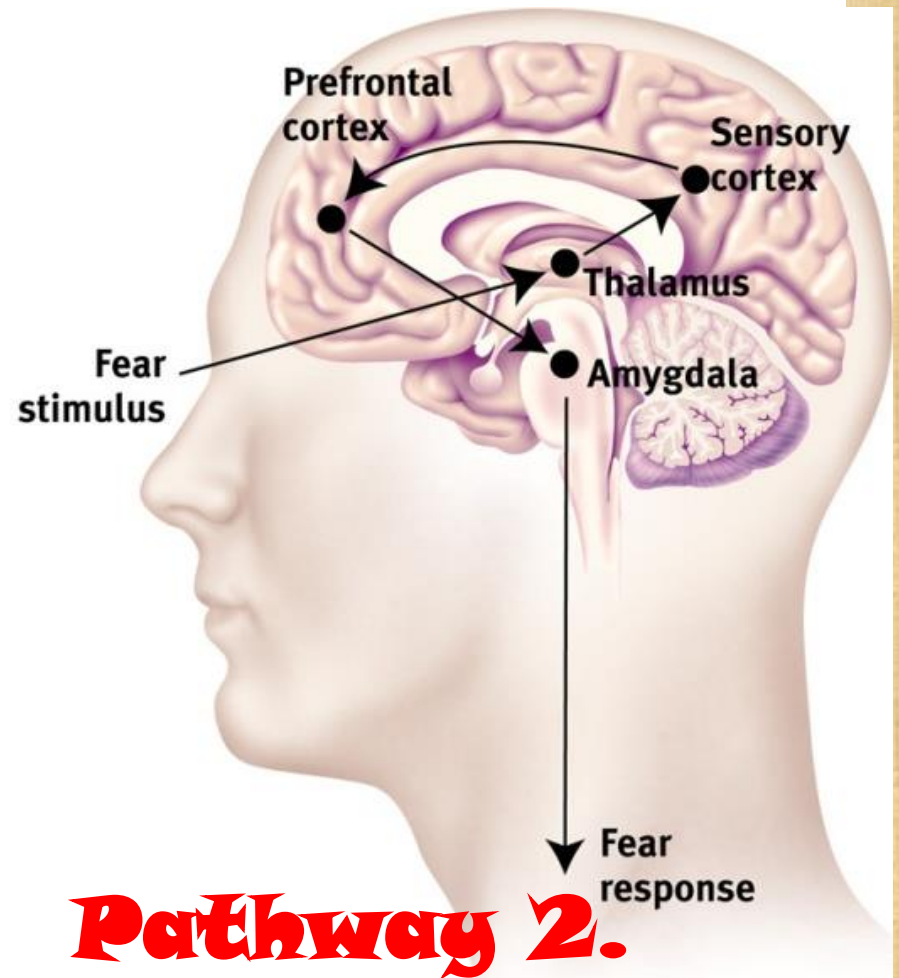
- One of the biggest breakthroughs in the study of emotions was the discovery of two distinct emotional pathways in the brain.
  - 1.** - One of the pathways is *fast*, and operates mainly at an *unconscious level* and has a built-in, innate sensitivity to certain cues.
  - 2.** - The other pathway is much *slower* and linked to *explicit memory*. This system relies heavily on the cerebral cortex.
- Both rely heavily on the limbic system.
- The amygdala plays an especially important role in both emotion pathways - negative AND positive emotions.



# The Emotional Brain



(a) The speedy low road



(b) The thinking high road



# Cognition Can Define Emotion

## **SPILLOVER EFFECT**

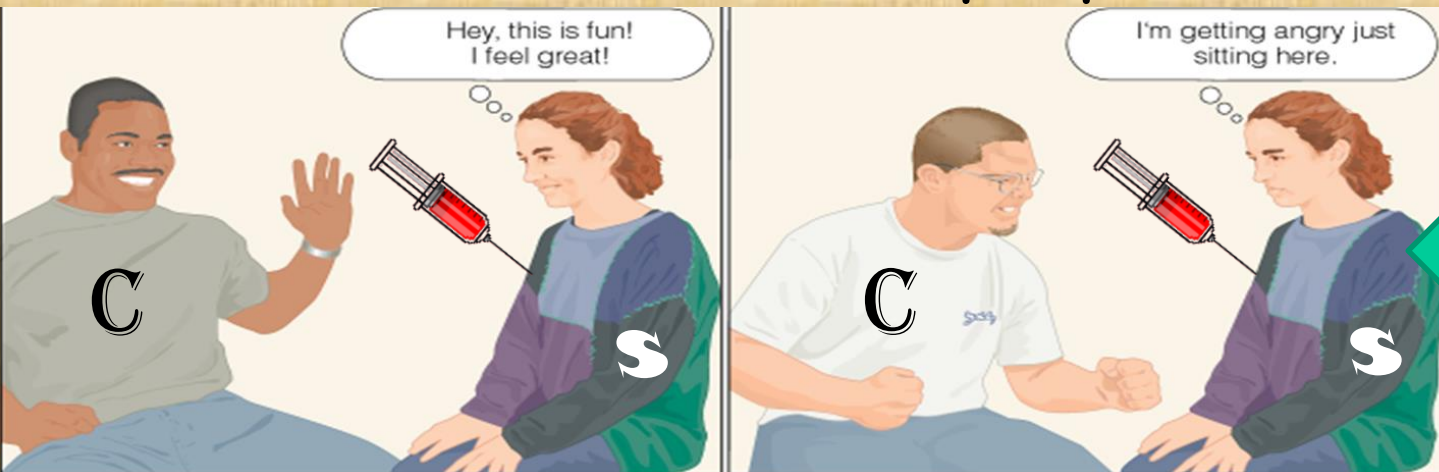
An arousal response to one event spills over into our response to the next event.

Arousal fuels emotion, cognition channels it.



*Arousal from a soccer match can fuel anger, which may lead to rioting.*

**OR...** The tendency of one person's emotion to affect how other people around them feel.



Give a shot of adrenaline