



**Class #3**

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**Perception**



# Visual Illusions ...

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# ○ ● ● “Higher order” perception

● Perception is relative

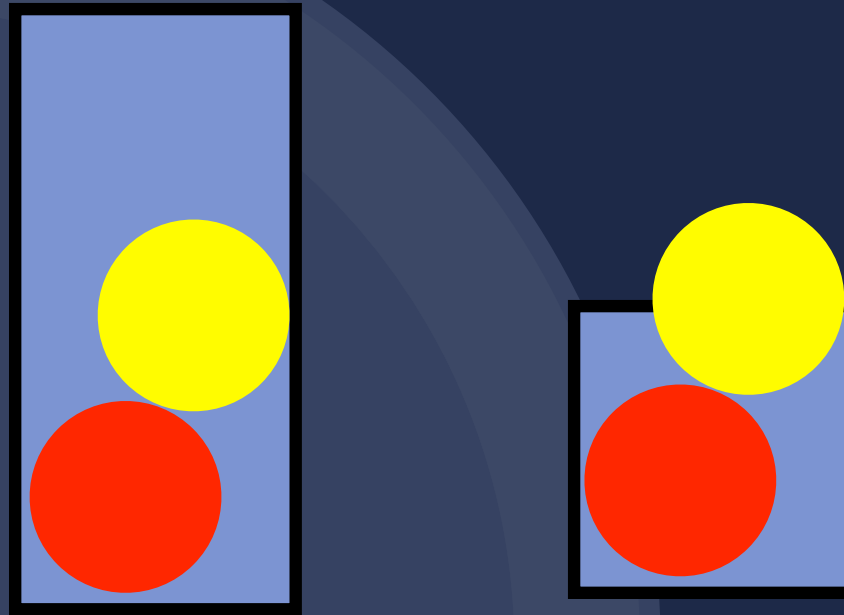
● Automaticity

● Adaptation

● Expectation

● Perception & Brands

# ○ ● ● Perception is relative 1



- Which one has more ice-cream?
- What effects could the package have?

# ○ ● ● Perception is relative 2

- Imagine that you are holding a 1 gram weight in one hand, how much would we have to put in the other for you to notice the difference?
- What if you were holding a 1 KG weight?
- Just noticeable differences (JND)

# ○ ● ● JND

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- Our perceptual system notices changes and these changes are relative to the magnitude of the experience itself
- This proportion is about constant for any sense (but different across senses)

# ○ ● ● JND - Weber's law

●  $\Delta I / I = K$

○ I is the intensity

○ K = constant across levels of I

●  $\Delta I_j / I_j = K_j$

○ j is the sensory domain

# ○ ● ● “Higher order” perception

- Perception is relative

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# The Unbearable Automaticity of Perception

The strongest knowledge — that of the total unfreedom of the human will — is nonetheless the poorest in successes, for it always has the strongest opponent: human vanity

Nietzsche, *Human, All Too Human*

# Automaticity

## ■ Automaticity

“... most of a person’s everyday life is determined not by their conscious intentions and deliberate choices but by mental processes that are put into motion by features of the environment and that operate outside of conscious awareness and guidance,” Bargh & Chartrand (1999)

## ■ Adaptive

“... consciousness deserts all processes **where it can no longer be of use**... We grow unconscious of every feeling which is useless as a sign to lead us to our ends, and where one sign will suffice others drop out,” William James (1890)

# Automaticity?

- Why have things automatic?
- Why is automaticity important?
- The answer is limited resources
  - The “cognitive miser”

# ○ ● ● "Higher order" perception

- Perception is relative

- Automaticity

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# ● ● ● Adaptation I

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- People are sensitive to changes
- We get used to stationary states
  - Light, shirts, glasses
  - Income, lifestyle, well-being?
  - With diminishing marginal differences

# ○ ● ● Adaptation II

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- People don't predict their level of adaptation
  - The "hedonic treadmill"

# ● ● ● Adaptation III

## ● Examples:

- Tenure

- People who win the lottery are not as happy as they expect to be ...

- California ...

- Other examples?

- implications....

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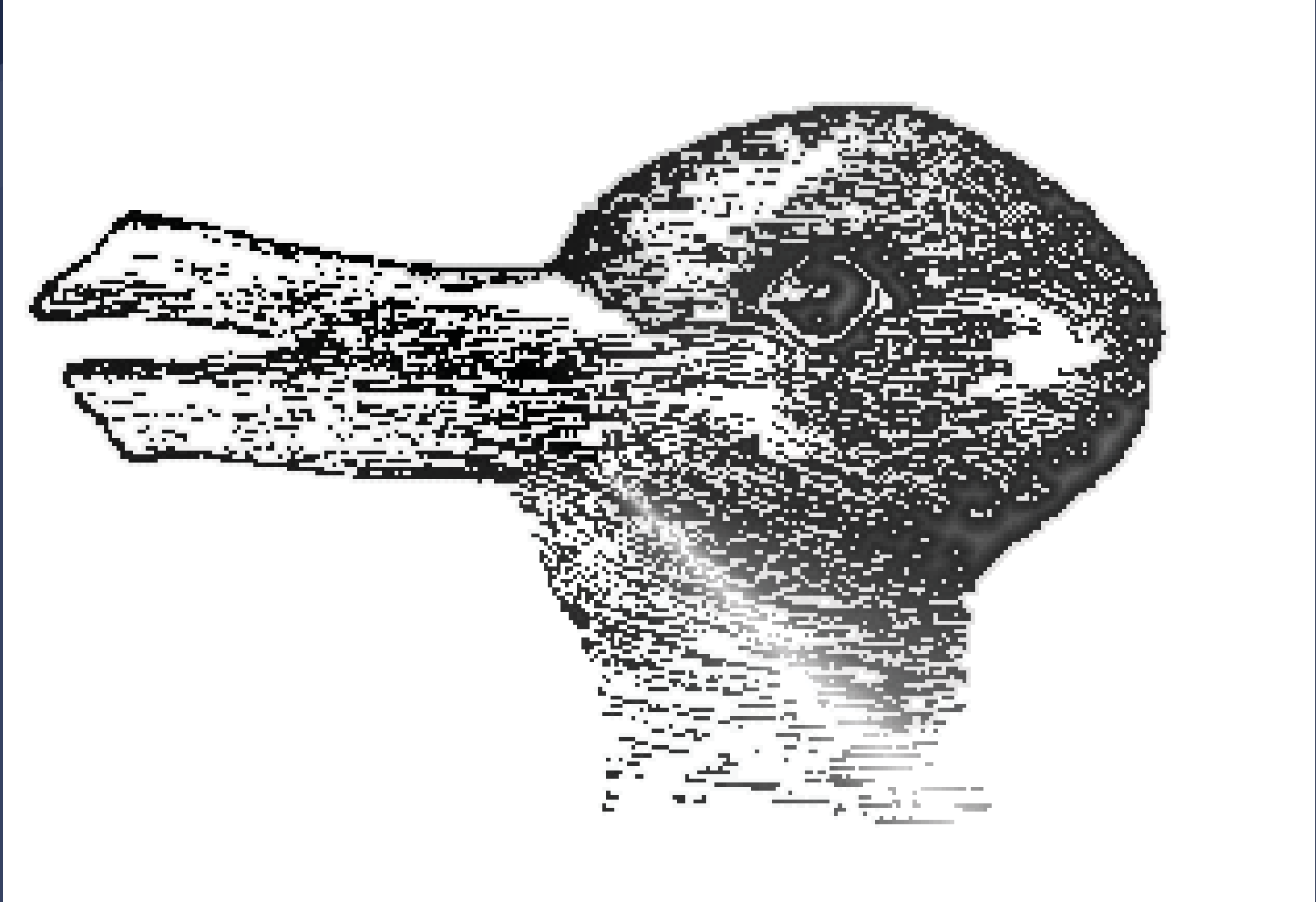
- Perception & Brands



# ○ ● ● Expectations

- Rabbit
- How many rabbits are there in the us?
- When was the last time you held a rabbit?

# ○ ● ● What is this?



# ○ ● ● Expectations

- How old are these women?
- Who do they remind you of?



○ ● ● How old is she?



# ○ ● ● Queen

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- Listen and try and head the hidden message
- “It is fun to smoke marihuana”

# ○ ● ● Expectations

## summary

- Expectations have real effects of perception
- Short, and long term expectations:
  - Priming
  - The “cocktail party” effect

# ○ ● ● “Higher order” perception

- Perception is relative

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○ ● ● Beer



- What would prefer a bud, or a bud with balsamic vinegar?





# The experiment



Taste 2 samples  
Beer & Beer+

Choice between  
Beer & Beer+

Drink a full glass

Blind



Before

Get informed about  
Beer & Beer+

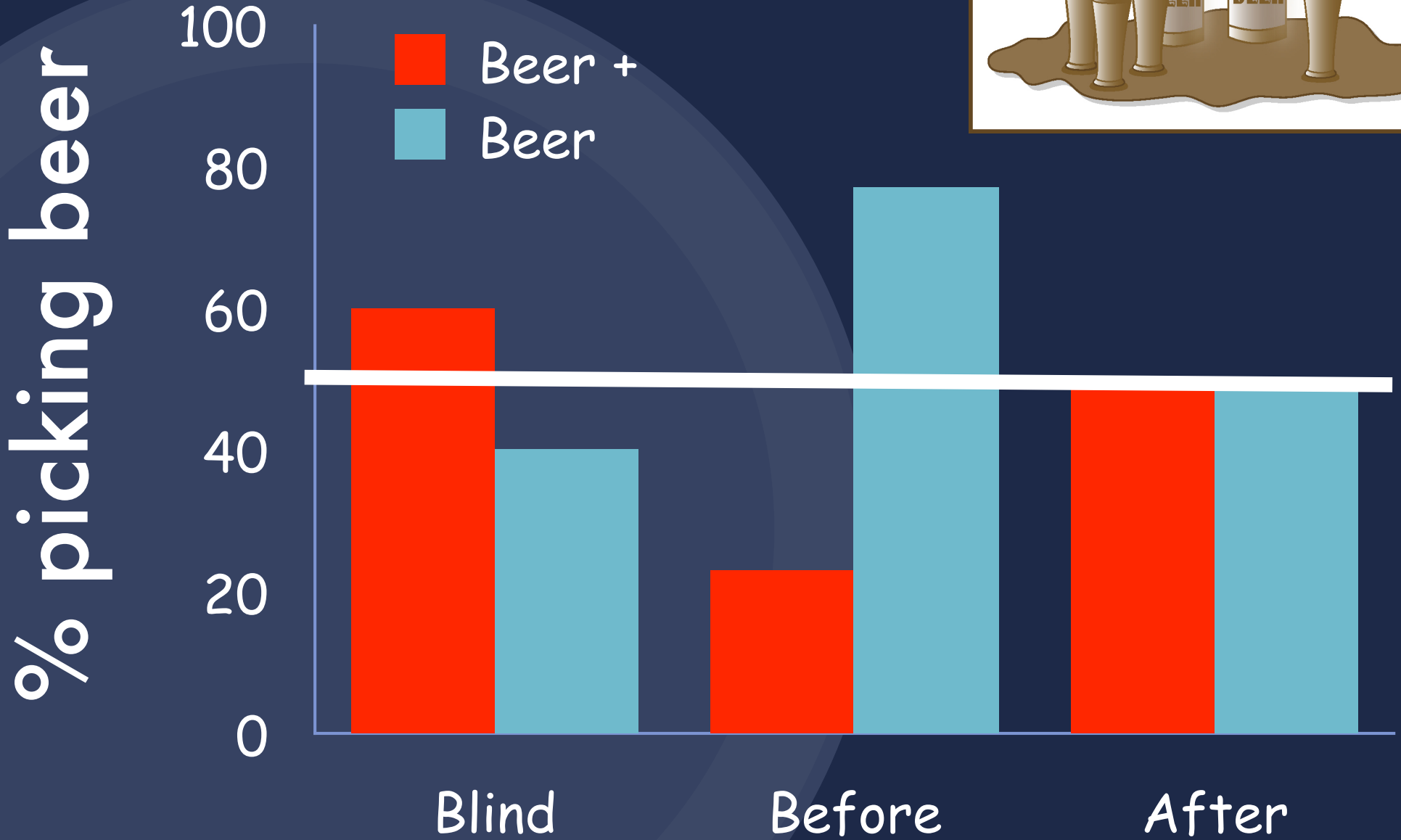


After

Get informed about  
Beer & Beer+



# Results



# ○ ● ● Perception & brands

- The case of coke vs pepsi
- Can a can influence perception?



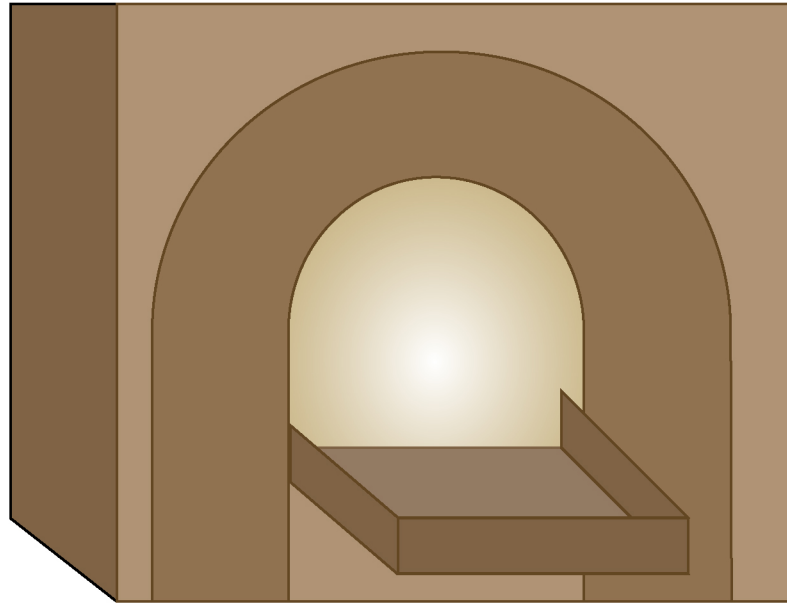
# Containers ...



# ○ ● ● Coke & Pepsi test

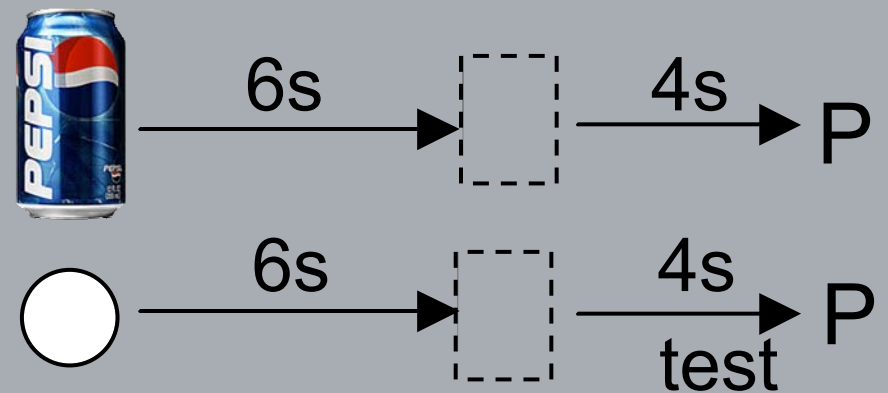
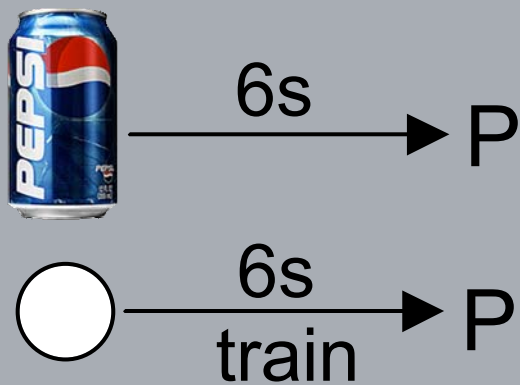
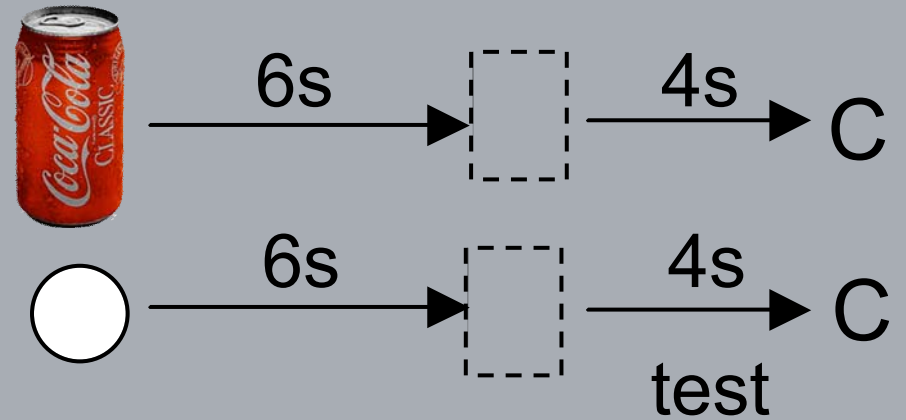
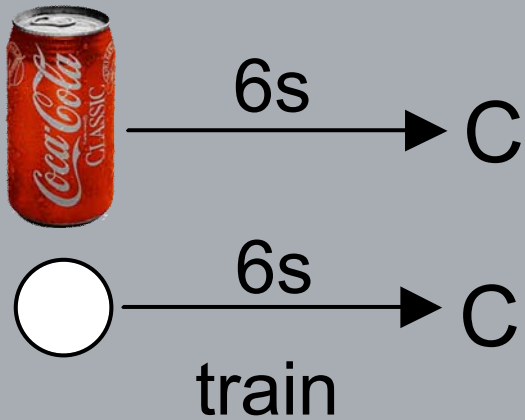
- Pepsi had ads with a taste test showing that Pepsi is preferred
- Coke had ads with a taste test showing that Coke is preferred
- How could that be?

# ○ ● ● fMRI

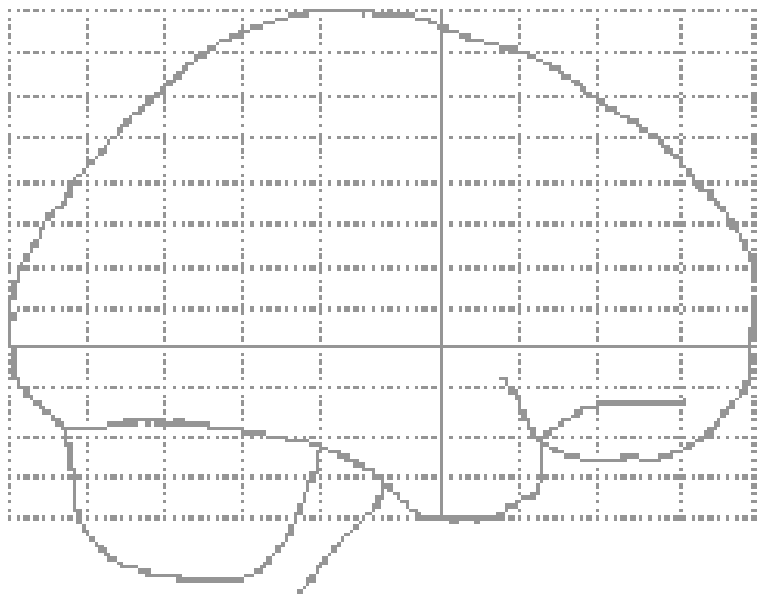


fMRI

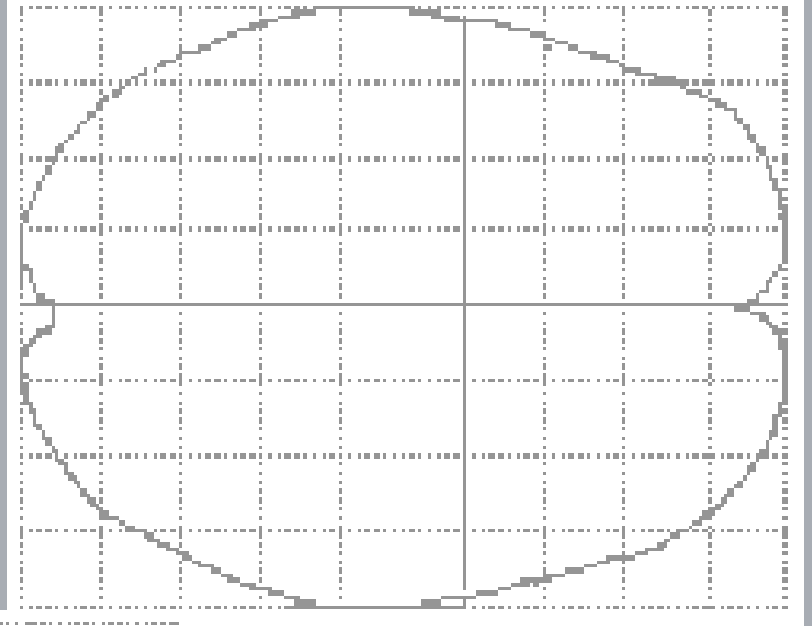
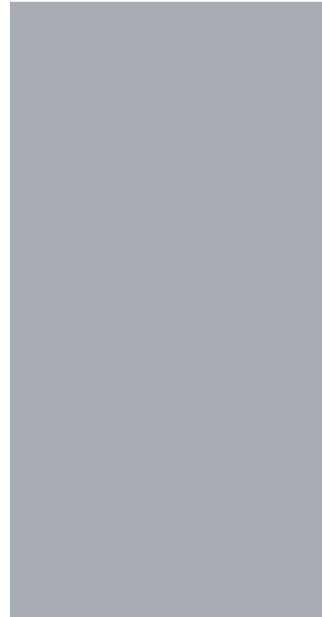
# A neuro-imaging experiment



# Effect of Pepsi label on brain activity

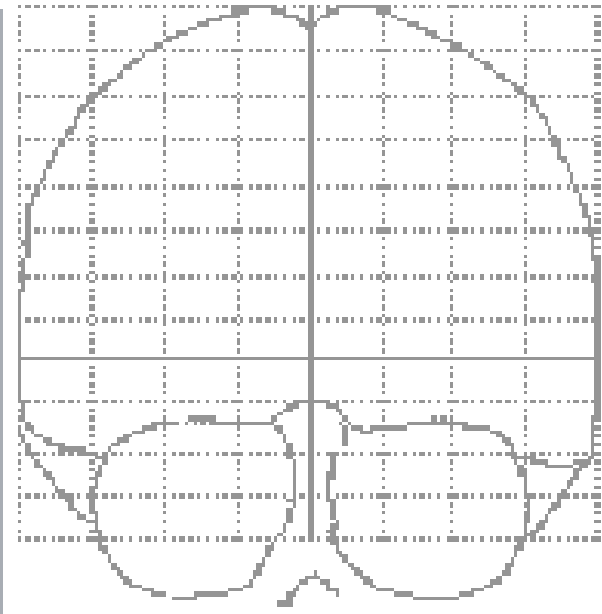


Side



Bottom

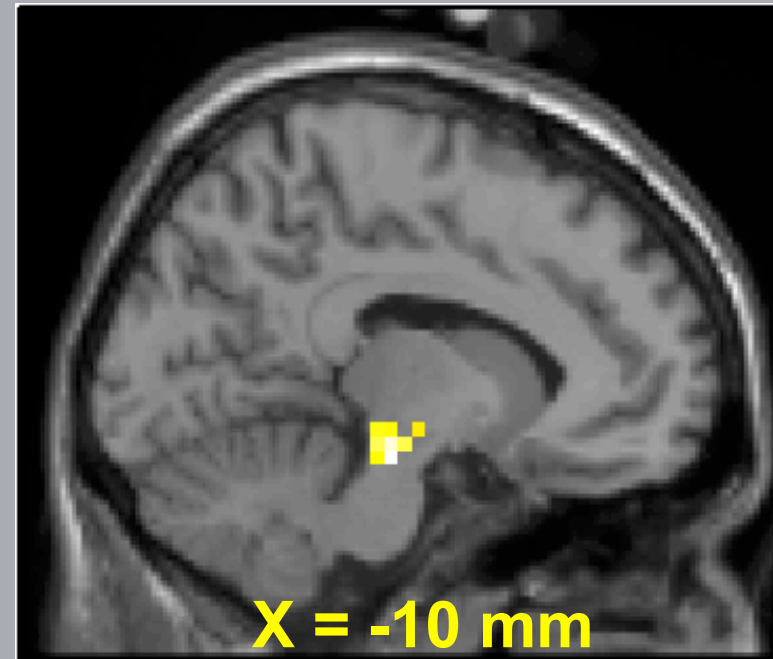
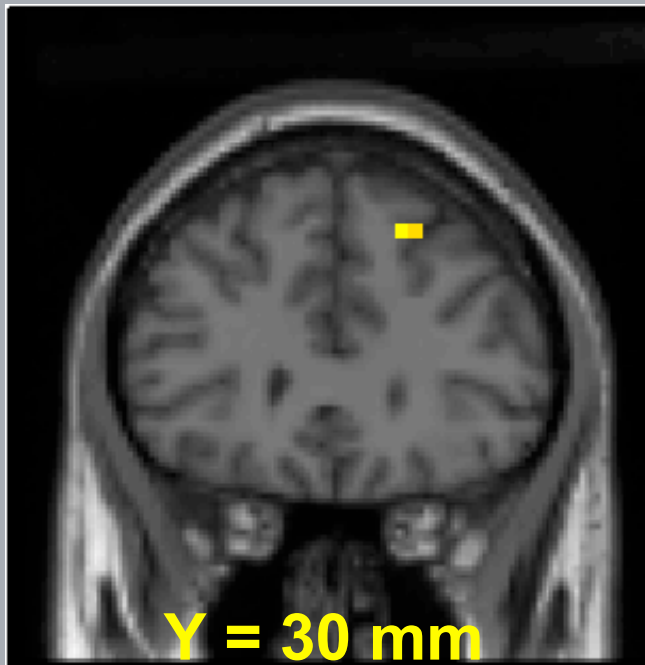
Front



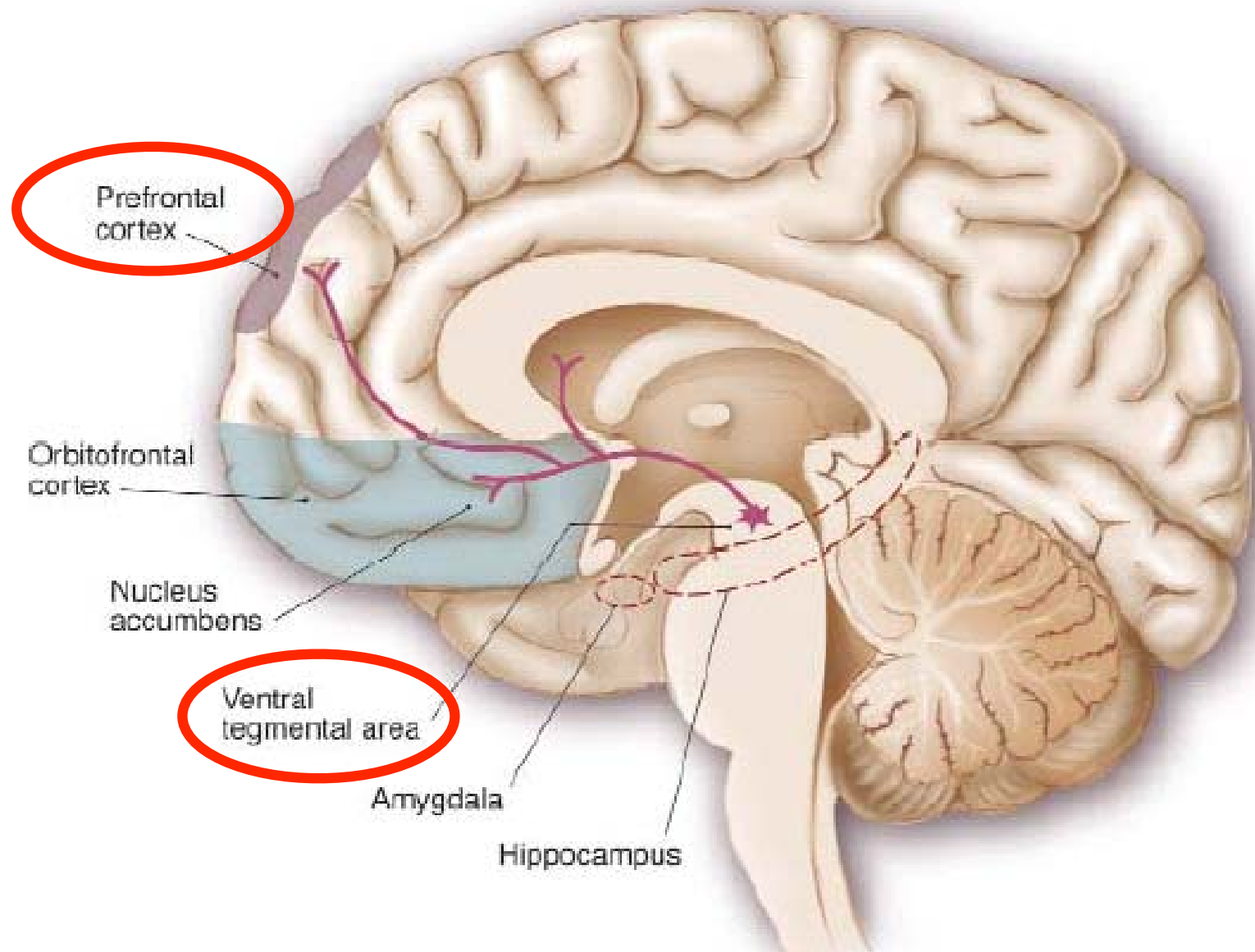


# Effect of Coke label on brain activity

Cognitive Control    Reward prediction “error”



# A brain map



Courtesy of Read Montague, Baylor College of Medicine, Houston, TX. Used with permission.

# ○ ● ● Perception: summary 1

- Perception is rapid and efficient
- But, wrong from time to time
- This is a tradeoff! Partially due to resources limitations
  -
- The biases are due to structural, learned, and attentional issues

# ○ ● ● Perception: summary 2

- Perception is relative
  - Differences, JND
- Automatic (Automaticity)
- Adaptation
- Expectation

# ○ ● ● Other topics

- Statistical perception
- Attention (spotlight and search)
- Some things we are good at (average length) some we are very bad at (total wind)