PSY 254
Precept 4 - Perception

AI/Preceptor: Alex Ku
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He/him/his

Today's Agenda

- Key Concept Overview: Perceptual Narrowing

- Pascalis et al. (2002) and Vogel et al. (2012) Discussion

- Journal Article Assignment

Perceptual Narrowing

time

relevance

Use it or lose it!

Can people learn how to discriminate among new class of visual stimuli later in life?

After training, participants showed increase activation in the fusiform face area (FFA)—a brain region traditionally associated with face recognition—when identifying a new complex object ("Greeble").

Brain's visual processing system can be tuned to expert-level recognition of non-face objects.

The Greebles come in two genders and five families.[1]

	samar	osmit	galli	radok	tasio
plok					
glip					

Greeble.

Gauthier et al. (1997)

Key Concepts on Perception

sensation

perception

preferential-looking technique

contrast sensitivity

smooth pursuit eye movements

perceptual constancy

object segregation

common movement

object permanence

violation-of-expectancy

optical expansion

binocular disparity

stereopsis

auditory localization

intermodal perception
    (e.g. McGurk Effect)

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Group Mini-Presentations

Group 1: Monkey/Human perceptual narrowing
(i.e., Pascalis, 2002)

Group 2: Own/Other Race perceptual narrowing
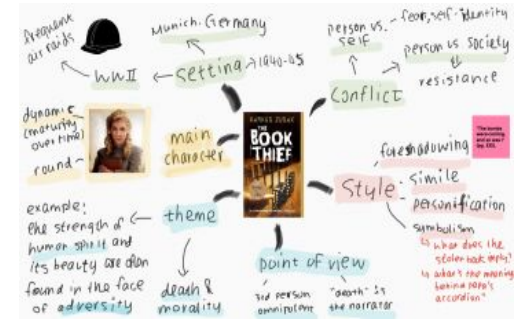(i.e., Vogel, 2012)

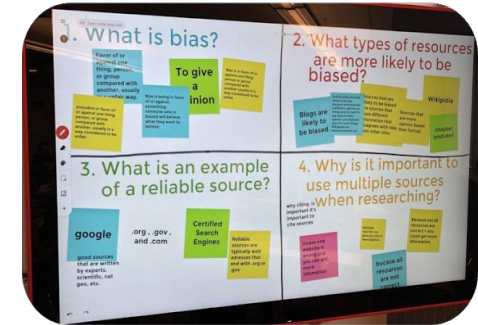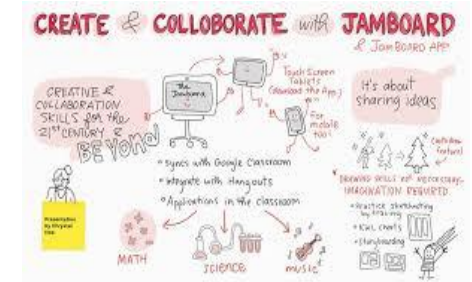| Summarize	Discuss	Identify
• Summarize the theoretical motivation (why did they do this study?), the **hypothesis**, **measurement tools**, and **results**	• Second, discuss the **strengths** and **weaknesses** of the study	• Third, identify various **influences on narrowing effects found** in each paper. Have concrete examples

Mind Map

Q&A

Storyboard

Presentation Time!

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- ~~Key Concept Overview: Perceptual Narrowing~~

- ~~Pascalis et al. (2002) and Vogel et al. (2012) Discussion~~

- Journal Article Assignment

Journal Article Assignment

- Detailed description of assignment on canvas

- Overview: design an original developmental psych research study
  - Introduction (2 pages)
  - Methods (2 pages)
  - Predicted results and Discussion (2 pages)
  - References and Citations (APA)

- Quick help : https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html

- Rough Outline: **October 30th at 5pm**
- Final Paper: **December 9th at 5pm**

Probe targets Europa's warm, maybe habitable ocean p. 1264 | Beating the quantum limit using squeezed light pp. 1275 & 1318 | Does the prion principle of disease hold for Alzheimer's? p. 1278

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RATS

For next class:

- Review the Journal Article Assignment
  - How should it be graded? Rubric?

- Do the readings (2) – *Falling At Four* and **any media article on early education**
  - Come to class with questions/comments about this paper

- Submit a multiple-choice mock exam question on Canvas

- Office Hours; Thursdays 2-3pm
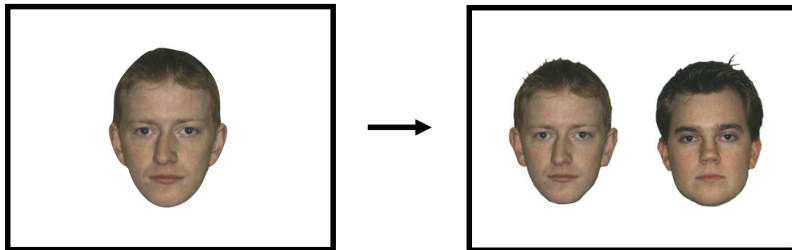
Discussion figures

Understanding VPC

Visual Paired-Comparison Procedure
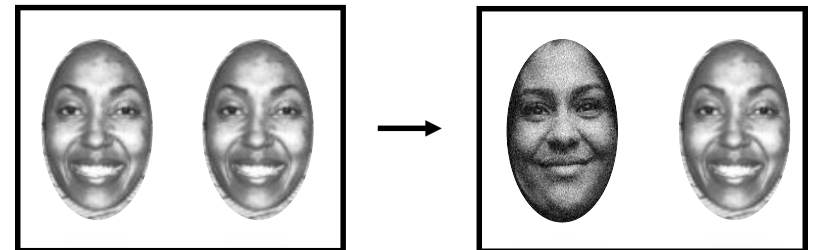
Measures relative interest in the members of a pair:

 one familiar item vs. one novel item

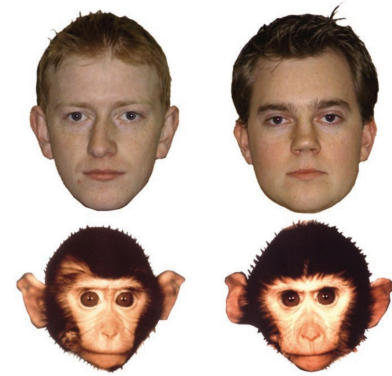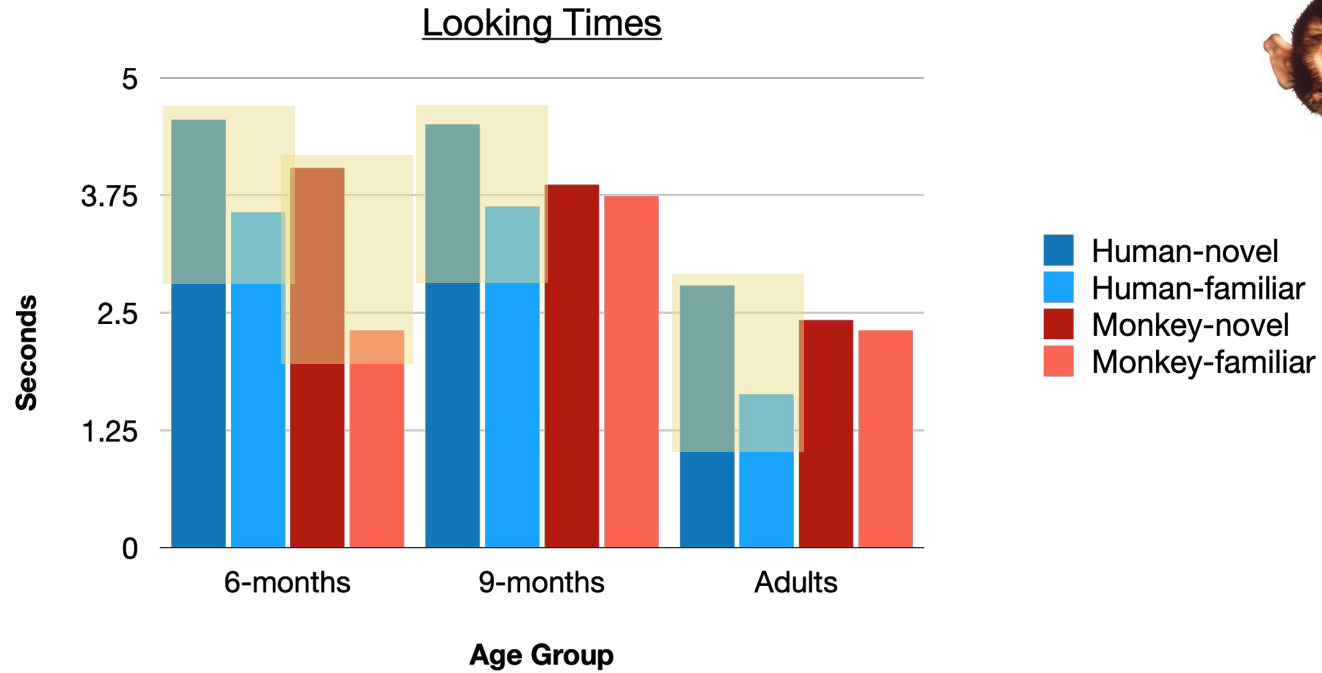Looking at the novel stimulus longer indicates recognition of the novel stimulus as 'novel'
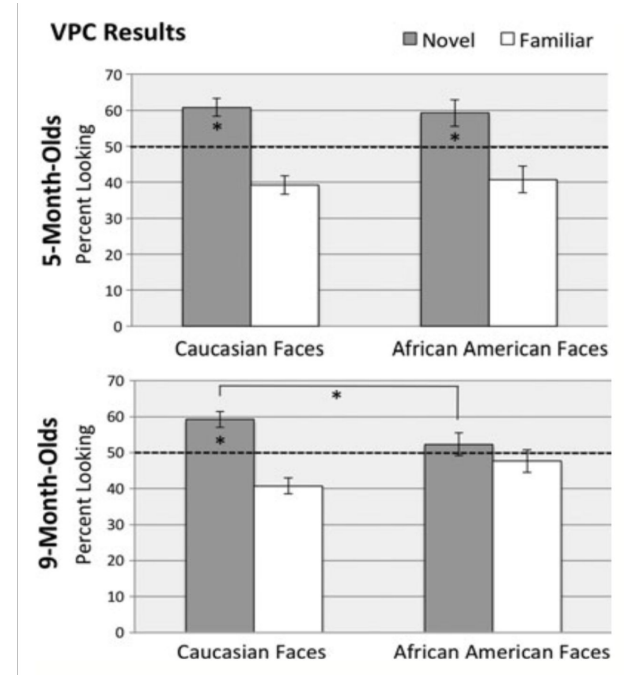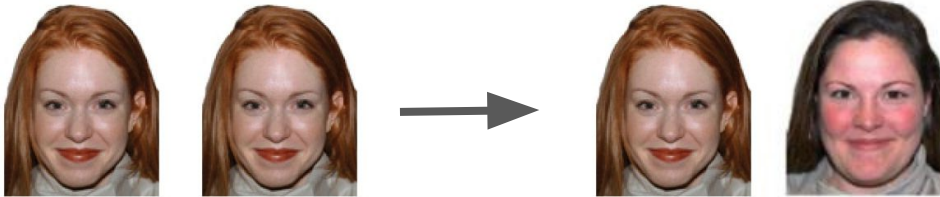

Pascalis et al (2002)

Vogel et al (2012)

Pascalis et al. (2002)

Looking Times

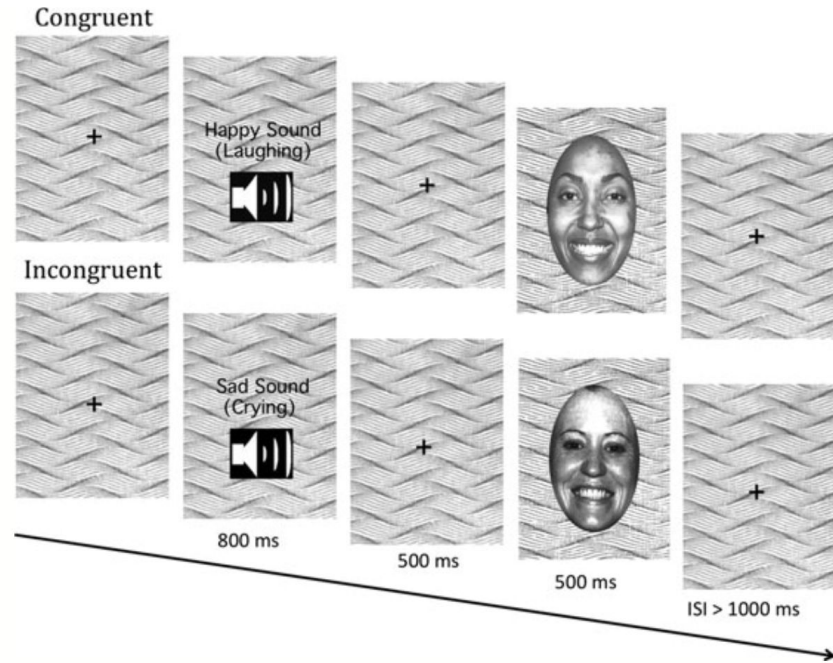# Vogel et al. (2012) – Part I

*IMAGES NOT FROM THIS STUDY

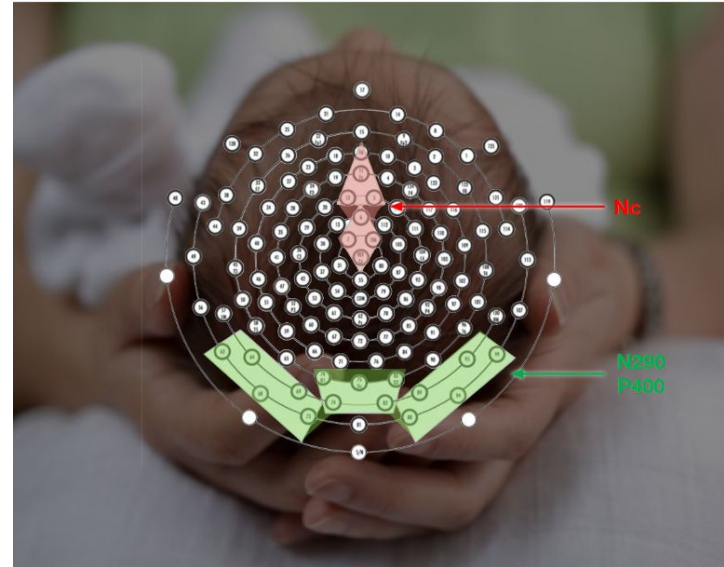# Vogel et al. (2012) – Part II
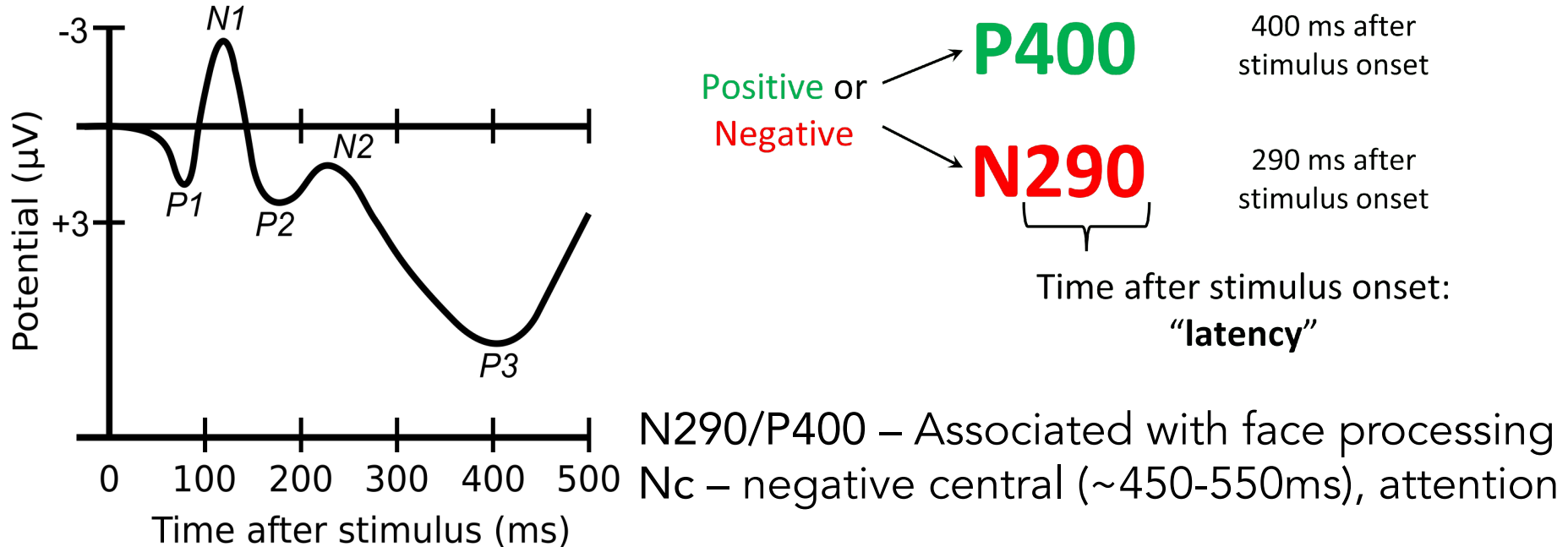

*ABOVE IMAGE NOT FROM THIS STUDY

Understanding ERP

EEG ⬜ Electroencephalography

EEG measures electrical activity in the brain

Understanding ERP

Event-Related Potential

Positive or Negative

$\rightarrow$ **P400** — 400 ms after stimulus onset

$\rightarrow$ **N290** — 290 ms after stimulus onset

Time after stimulus onset: "**latency**"

N290/P400 – Associated with face processing

Nc – negative central (~450-550ms), attention
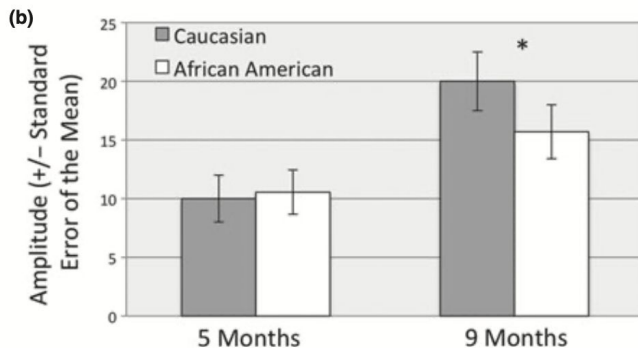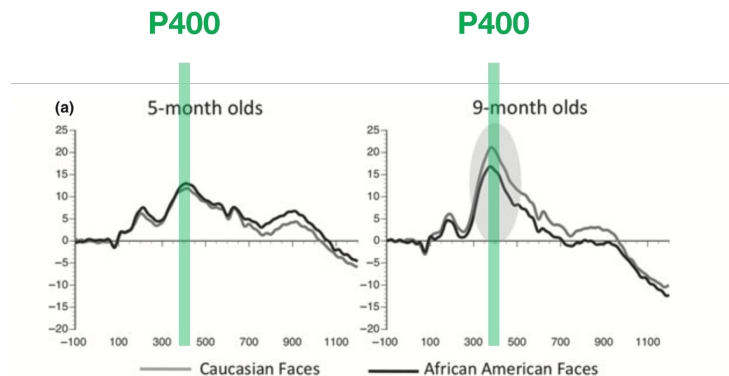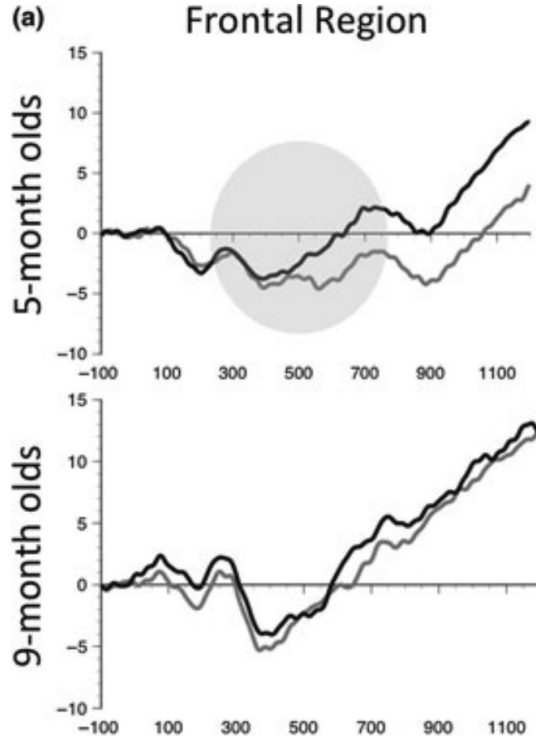
Vogel et al. (2012)

P400 component:
Positive voltage deflection
400ms after stimulus onset

"the **neural response** to own- and other-race faces … is **differentiated in 9-, but not 5-month-old infants**"

Vogel et al. (2012)

Nc component:
Negative voltage deflection
~450-550ms after stimulus
onset

"**5-month-olds exhibited a more negative Nc response** to congruent relative to incongruent faces. **No significant difference for 9-month-olds**."

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