Can We Trust Our Perception? (S&P Pt.3)

PSYCH 1101: DAY 11

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Walk-In Office Hours

- Tomorrow (9/19) 2-4 pm
- Thursday (9/22) 4-5 pm

Perception Is Not Perfect

- We know that we are susceptible to illusions, and that what we see can vary depending on other visual cues present
  - Visual context: shadows, surrounding lines, etc.
- Also shaped by broader context--expectations about what you're perceiving
  - e.g., interpretation of ambiguous figures

The "McGurk Effect": An Auditory Illusion

WWW.YOUTUBE.COM/WATCH?V=G-LN8VWM3M0

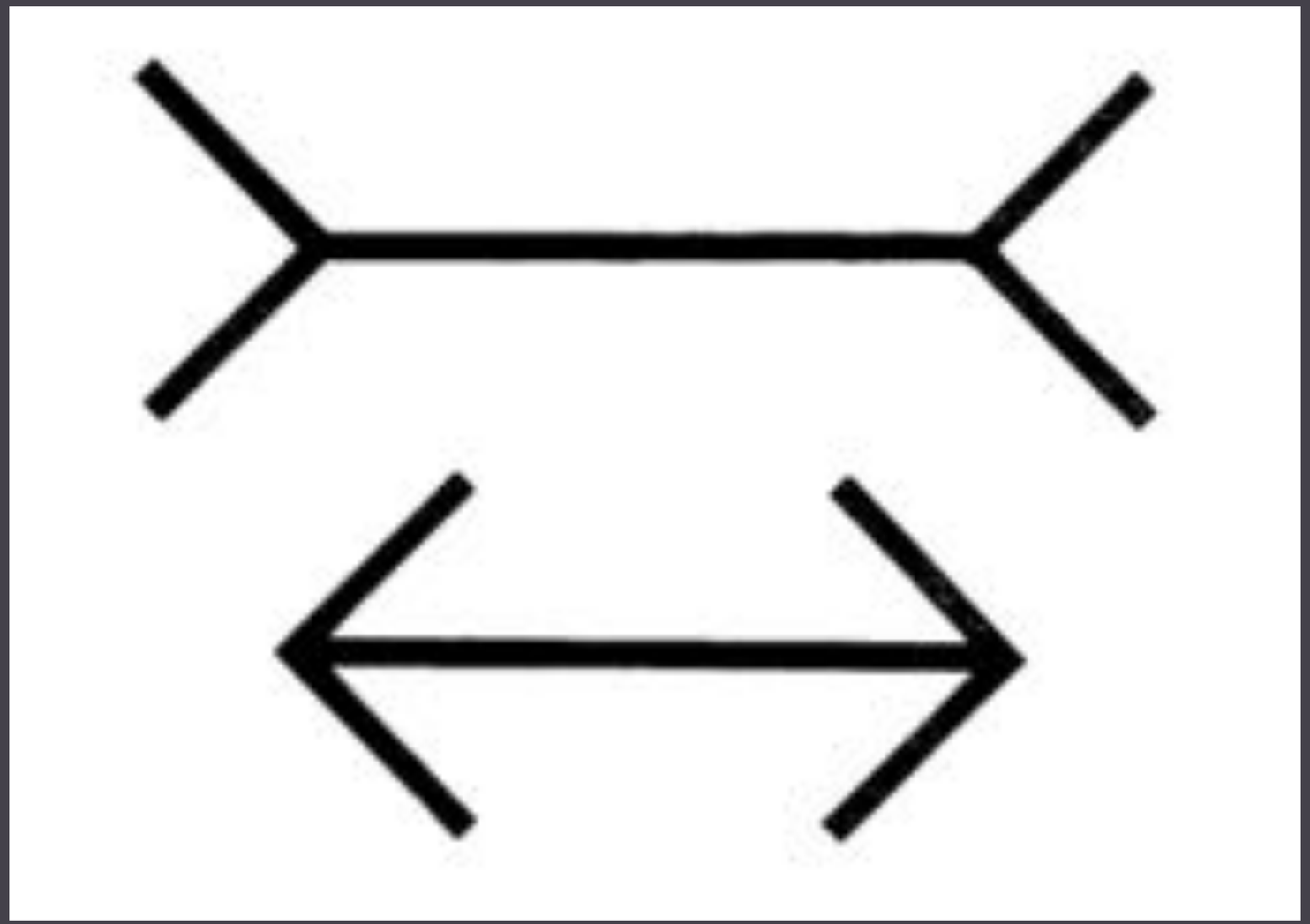
We Know That Perception Is Limited

- We do not perceive *everything* (it would be overwhelming and fairly useless for survival).
- Our brains create shortcuts—use surrounding information to give us a useful picture of our environment (e.g., by taking context into account).

Deep Worry:
What If What We Perceive Depends On Our Beliefs/Desires/ Motivations?

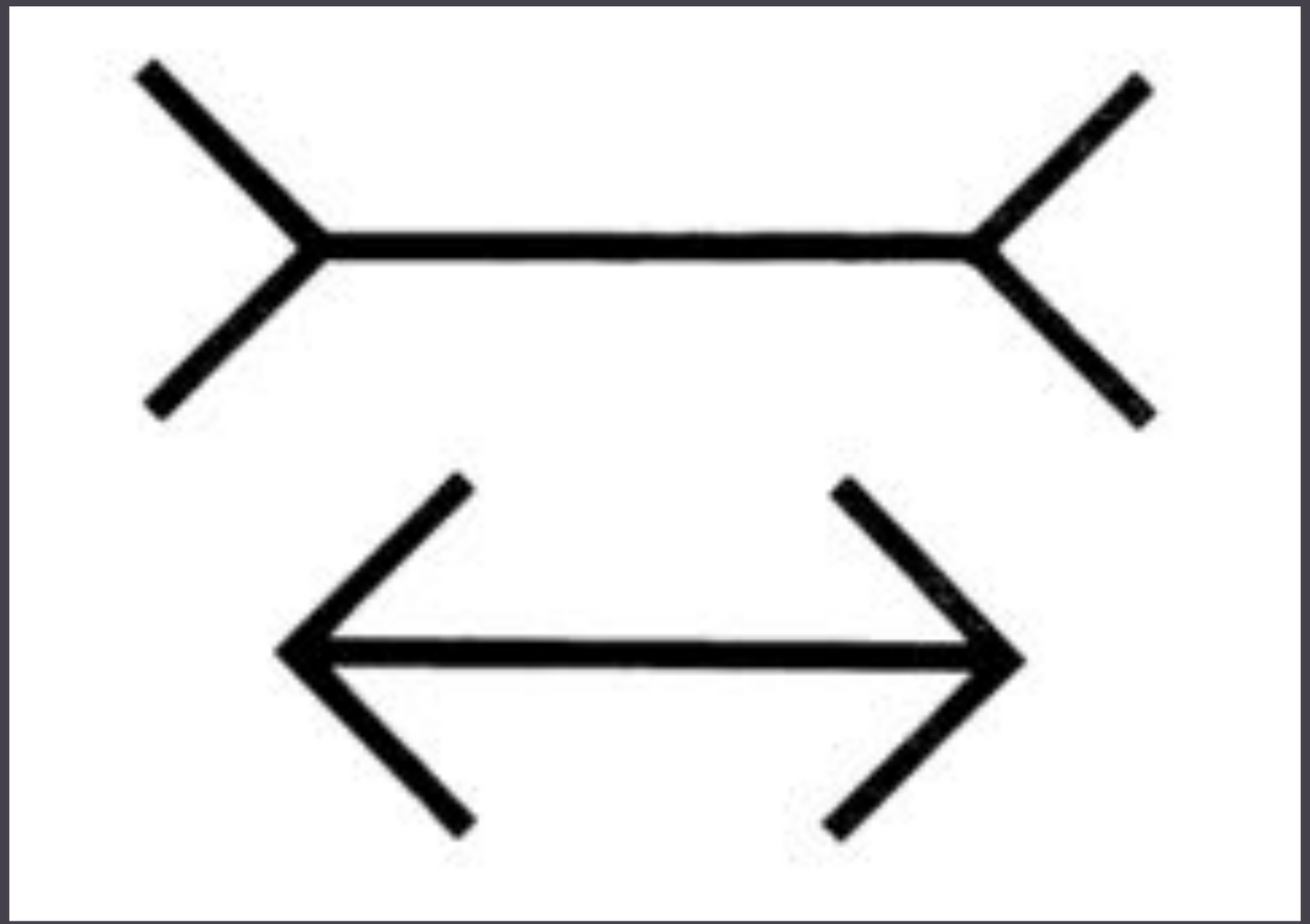
“It is also a distinction respected by common sense: anyone can appreciate the difference between, on one hand, seeing a red apple and, on the other hand, thinking about, remembering or desiring a red apple. This is especially clear when perception and cognition deliver conflicting evidence about the world — as in most visual illusions. Indeed, there may be no better way to truly feel the distinction between perception and cognition for yourself than to visually experience the world in a way you know it not to be.”

Firestone & Scholl (2015) “Cognition does not affect perception,” *Behavioral and Brain Sciences*



Bottom-Up And Top-Down

- *Higher* cognitive processes: thought, judgment, beliefs, desires, etc.
- *Lower* cognitive processes: sensation, perception, attention.
- Generally the interaction/influence is seen as *bottom-up* (e.g., sensations and perceptions —-> judgments and beliefs)
- Might there be top-down influences?
- Can what you see be influenced by what you know? What you believe? What you WANT to believe?



Do We All See The Same Colors?: Research On Linguistic Relativism

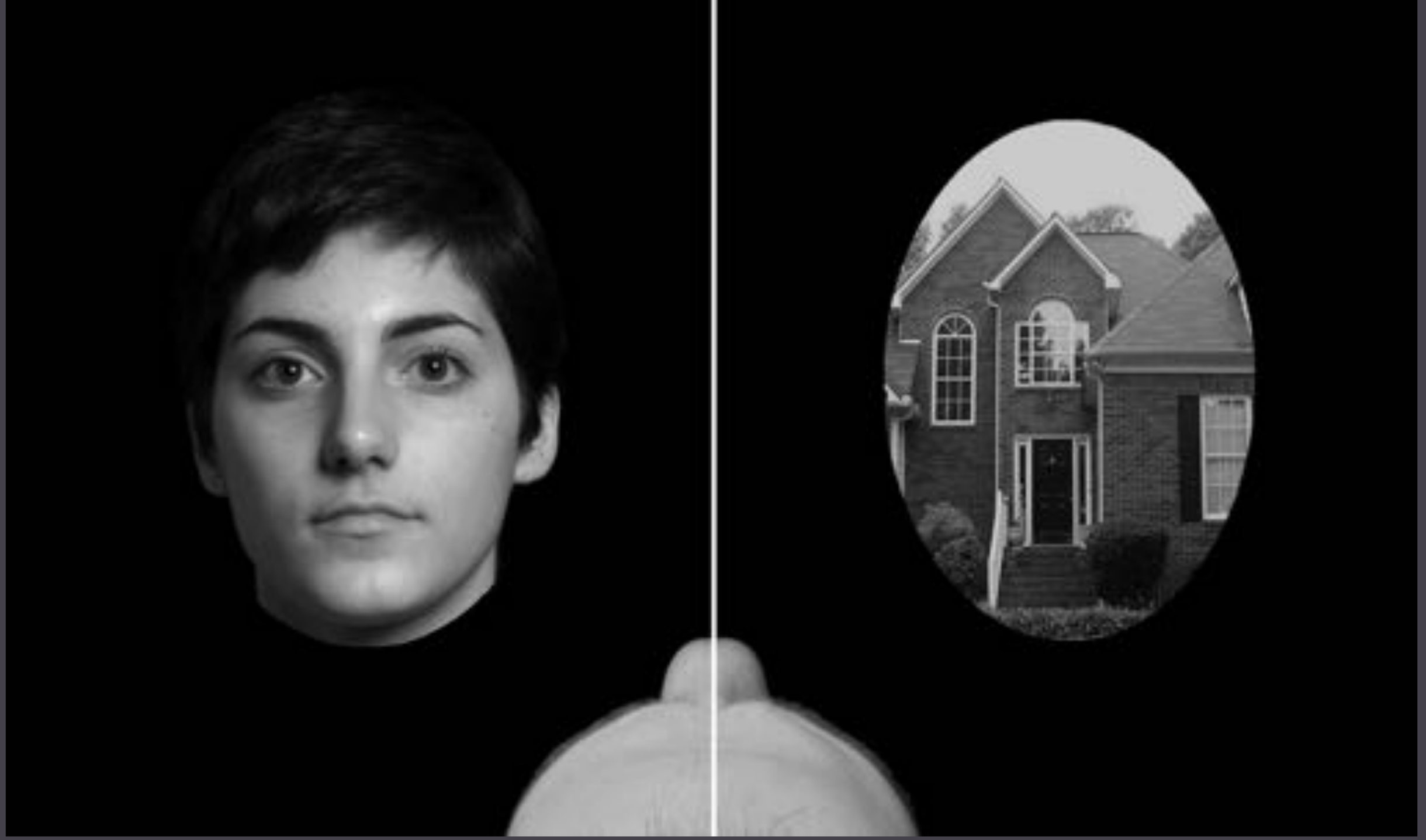
- **Linguistic relativism**: the view that the language we speak constrains our perception and cognition. (Also known as the **Sapir-Whorf** hypothesis).
  - E.g., if your language doesn't have a word for the color green, you don't *see* the color green.

How Two Languages "Carve" The Visible Spectrum

What Do We Know?

- Linguistic color categories shape a great deal of “color cognition”
  - memory, learning, and discrimination
- But there appear to be clear basic universals in perception
  - infants and individuals from cultures with only terms for “light” and “dark,” are able to tell the difference between “focal” colors (i.e., basic red, green, blue, yellow, etc.)

Resolving Ambiguity: Personality And Perception



Berg & Toch (1964): Seeing Violence

- Subjects:
  - Inmates of the State Prison of Southern Michigan at Jackson.
  - 60 men were selected on the basis of their disciplinary record in the institution
  - MMPI
  - case history data
- “**Impulsive**” Group vs. **Neurotic** Group
  - Neurotic = An absence of disciplinary violations, case histories of anxiety attacks, psycho-somatic diseases, gross introversion, etc.
  - Impulsive = the presence of disciplinary violations, higher score on psychopathy scale

Binocular Rivalry Slides

- Slides presented to both eyes for 500 milliseconds (.5 seconds).
- (2) The "Striptease-Show" Slide: persons watching a female stage performer.
  - SOCIALIZED: the performer is dressed
  - IMPULSIVE: she is not.
- (4) The "Glutton-Diner" Slide: A man is depicted eating, with the difference being the manner in which he eats.
  - IMPULSIVE: consists of a meal "a la Henry VIII," consisting of an entire chicken devoured "in the rough."
  - SOCIALIZED: a conventional knife-and-fork meal.
- (5) The "Rapist-Dancer" Slide:
  - IMPULSIVE: features a couple dancing, while in the other picture,
  - SOCIALIZED: the man is violently struggling with his partner, whose clothes he is tearing off.

Results

TABLE IV

NUMBER OF IMPULSIVE PICTURES PERCEIVED BY IMPULSIVE AND NEUROTIC INMATES

	Neurotics (N = 30)	Impulsives (N = 30)	Diff.
1. Beer (Coffee) Drinker	33	52	19
2. Lover (Bridegroom)	22	40	18
3. Glutton (Diner)	29	40	11
4. Rapist (Dancer)	23	32	9
5. Striptease (Show)	32	38	6
6. Brawl (Boxer)	9	13	4
Total	148	215	67

Experimental group

Control group

Number of “naughty” images they saw

Perception Of Size
"The New Look"

How Big Is A Quarter?

Bruner And Goodman (1946)

- 10 year-old children asked to estimate the size of coins
  - Given a contraption that allowed them to make a circle of light bigger or smaller, and asked to make it the same size as various coins
- Rich kids vs. Poor kids
- Prediction: Poor children value the currency more than rich children, so the coins literally “loom large”

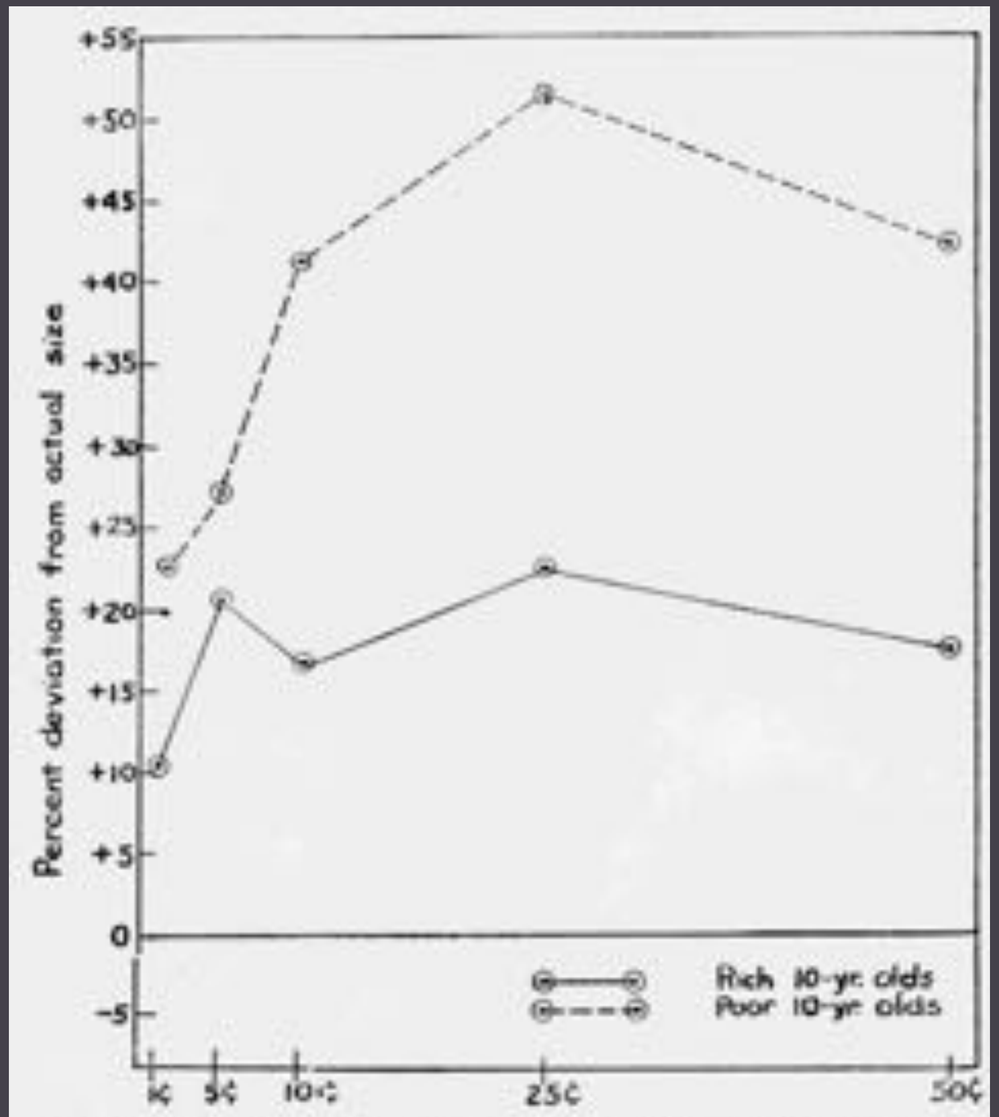


FIG. 1. SIZE ESTIMATIONS OF COINS MADE BY WELL-TO-DO AND POOR TEN-YEAR-OLDS
(Method of average error)

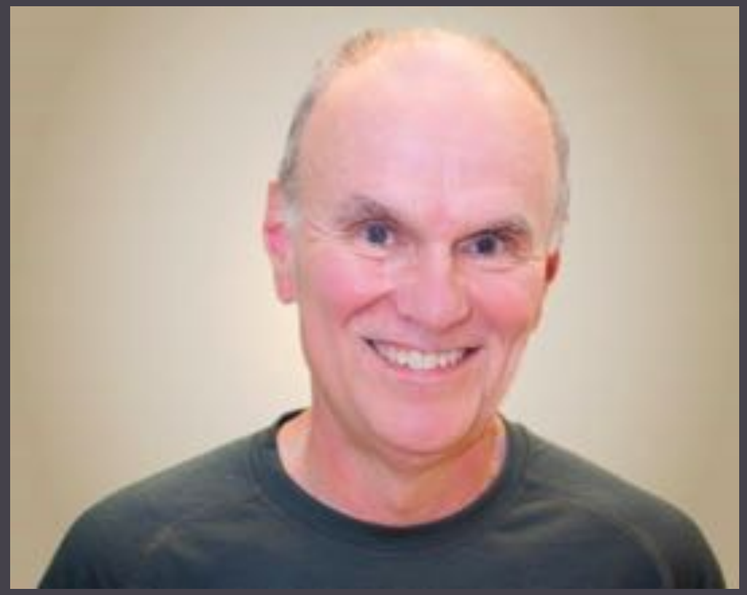
Assessing The "New Look"

- The "New Look" movement in psychology argued that desires and motives (i.e., "cognition") infused perception: poor children *see* coins as larger
- New look research received a number of criticisms
  - Poor children less familiar with coins
  - Mixed results
    - Assessments were not of actual perception, but of other cognitive processes:
    - **Memory**
    - **Judgment**
    - **Attentional shifts**

The "New" New Look

EMILY BALCETIS

DAVID DUNNING



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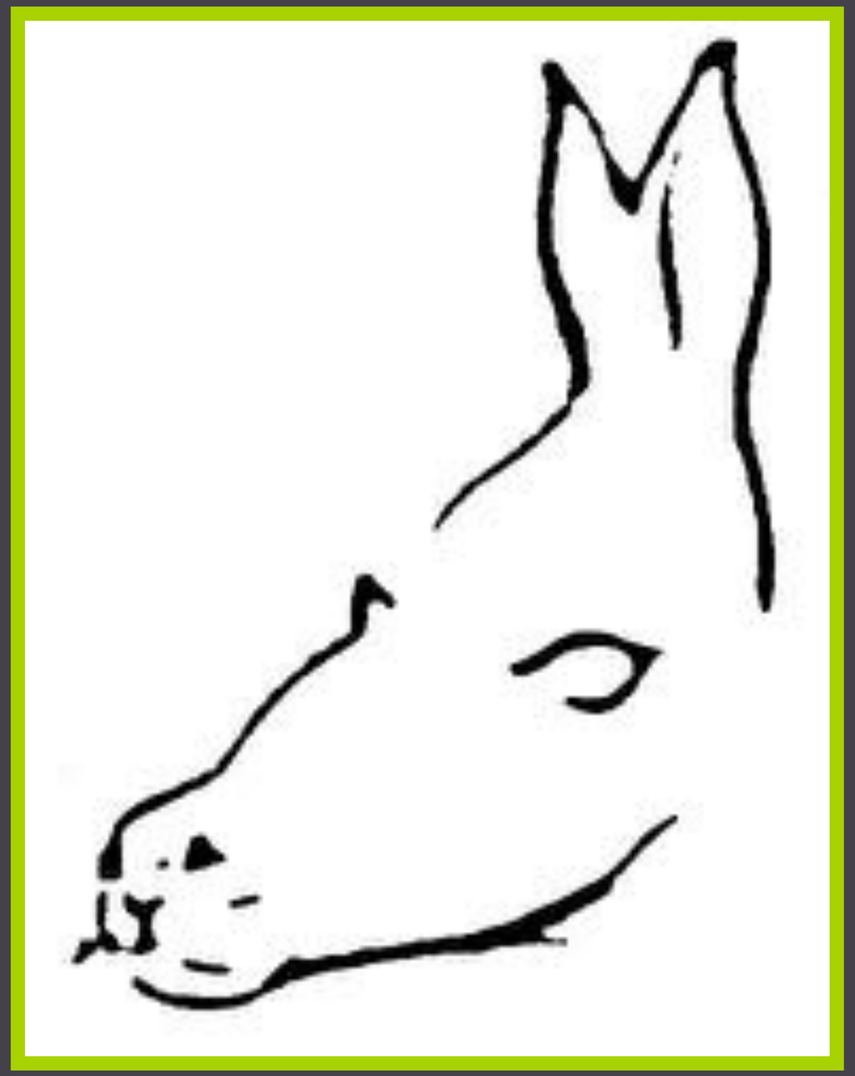
1. Motivated Perception Of Ambiguous Figures

Balcetis & Dunning (2006)

- Participants are introduced to a taste-testing study with two conditions:
  - Desirable foods: Such as jelly beans
  - Undesirable foods: Such as a can of beans
- Participants are assigned by playing a computerized card game
- Their assignment depends on whether they see a farm or sea animal

Horse Or Seal?



First Eye Movement