

## Categorical Perception: Not What It Seems

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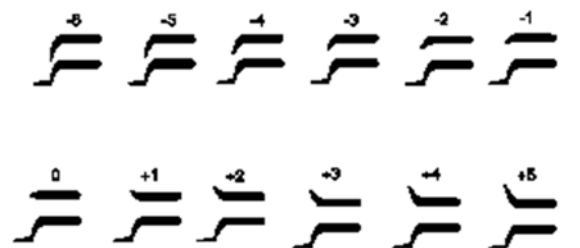
Categorical perception differs from perception generally with respect to phenomenology and epistemology

### 1. What is categorical perception?

Categorical perception is whatever (a) explains many of the facts about phenomenological character, patterns of discrimination, pop-out effects, and efficient verbal communication that categorical perception is commonly taken to explain; and (b) involves perceptual processes which categorise.

A perceptual process *categorises*:\* [a] it performs one of its functions in part by not discriminating some of the stimuli which another perceptual process treats as distinct; [b] *x* and *y* are not discriminated by this process is, or approximates to some degree, an equivalence relation; and [c] there are at least two, and not too many, equivalence classes (too many is relative to subjects' abilities to perceptually discriminate stimuli of this type).

\*Whether a perceptual process categorises is a matter of degree.



From <http://www.columbia.edu/itc/psychology/rmk/T2/T2.2b.html>

### 2. Is categorical perception a form of perceptual experience?

*Seemingly plausible Thesis* To enjoy categorical perception of some dimension is in part to have perceptual experiences as of certain properties or events.

“The *category question* concerns whether observers perceive qualitative similarities ... Discriminable wavelengths seem to be categorized together because they appear perceptually similar” (Bornstein 1987: 288-9).

“categorical perception is said to occur when stimuli that straddle a category boundary are perceived as more distinct than equivalently spaced stimuli within a category” (Kay and Regier 2006: 52).

*Argument* consider (a) perceiving in turn the left two face stimuli in the figure below, and (b) perceiving in turn the right two stimuli.

- (1) The second two perceivings, (b), differ more in phenomenal character than the first two perceivings, (a).
- (2) This difference in differences in phenomenal character, (1), is a fact in need of explanation
- (3) The difference cannot be fully explained by appeal only to perceptual experiences as of lower-level features of the stimuli.
- (4) The difference can be explained in terms of perceptual experiences as of happiness and anger if the above thesis is true.
- (5) There is no better explanation of (1).

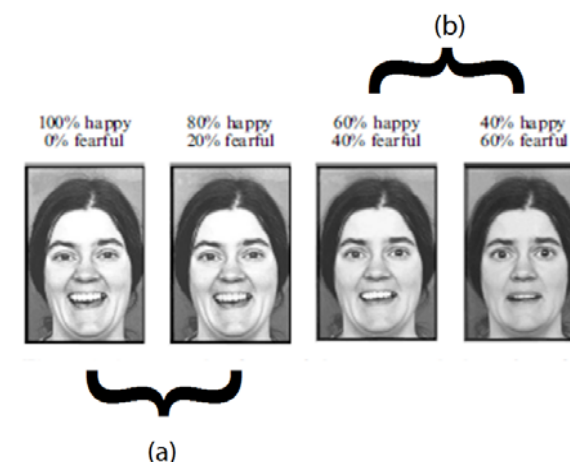


Image from (Kotsoni, Haan and Johnson 2001: 1118)

### 3. The argument from development

What is perceptual experience?

*Minimal requirement* perceptual experiences involve phenomenal character, where the particular phenomenal character of a given perceptual experience depends in part on what it is an experience as of.

*Further constraint* perceptual experience is a mode of awareness ...

“Perceptual experiences are ... intrinsically ... belief-inducing, having ... an intrinsic nature which can only be specified in relation to belief” (Smith 2001: 291)

“Justified belief about the canary yellowness of external things is available simply on the basis of visual perception” (Johnston 1992: 222)

Phenomenal character “stands ready and available to make a direct impact on beliefs” (Tye 1995: 143–4, see also 103–4)

The further constraint may not be met in the case of categorical perception of speech:

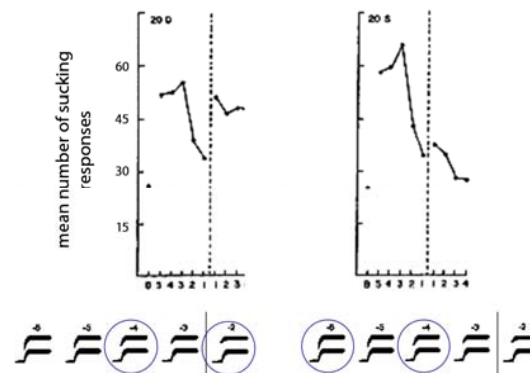
- (1) Infants enjoy adult-like categorical perception of speech from around 6-months (Eimas, Siqueland, *et al.* 1971; Kuhl 1987: 376–82; and 2004: 834; Jusczyk 1995)
- (2) children systematically fail tests which require them to recognise, distinguish or manipulate phonemes until around four

years (Lieberman and Liberman 1990: 64; Anthony and Lonigan 2004: 46)

(3) children acquire abilities to think about phonemes gradually over several years with certain types of phoneme harder to distinguish explicitly than others (Treiman, Broderick, *et al.* 1998)

(4) adults’ (and children’s) untrained judgements about phonemes are often surprisingly inaccurate, and they are typically influenced by acoustic features such as sonority as well as their knowledge of spelling and linguistic structure (Scarborough, Ehri, *et al.* 1998; Treiman and Cassar 1997; Lehtonen and Treiman 2007; Hallé, Chéreau and Segui 2000)

Categorical perception of speech is not a form of perceptual experience



From Eimas *et al.* 1971

### 4. Sensation

Sensations are monadic properties of experiences. They have phenomenal character and are occasioned by sensory encounters with things but lack intentional objects.

*Adverbial theory of sensations* “Ayesha has a sensation of familiarity” can be analysed as “there is an event, Ayesha is the subject of it, and it is a sensation-of-familiarity sort of event” (compare Tye 1984: 202)

Which events are sensations properties of? Perceptual experiences. How are sensations individuated? By their typical causes.

Categorical perception of speech is more nearly a form of sensation than of perceptual experience

Categorically perceiving /b/s occasions one sensation, categorically perceiving /d/s occasions another. This conjecture explains (a) the facts about phenomenal character typical of categorical perception, and (b) the developmental gap between categorical perception and belief.

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