

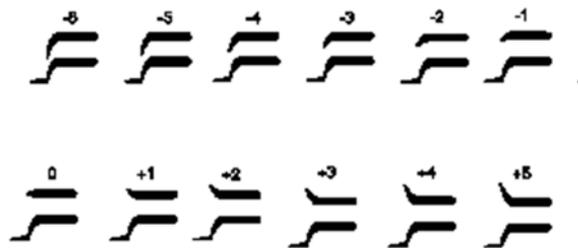
## Categorical Perception: Not What It Seems

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### 1. What is categorical perception?

Categorical perception is whatever (a) explains many of the facts that categorical perception is commonly taken to explain; and (b) involves perceptual processes which categorise.

A perceptual process *categorises* to a degree: [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).



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 colours to which human languages give names are experienced [...] as sharply different from one another” (Matthen 2005: 190)

“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” (2006: 52)

### 3. An argument for the thesis

Consider (a) encountering in turn the left two face stimuli in the figure below, and (b) encountering 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 seemingly plausible thesis is true.
- (5) There is no better explanation of (1).

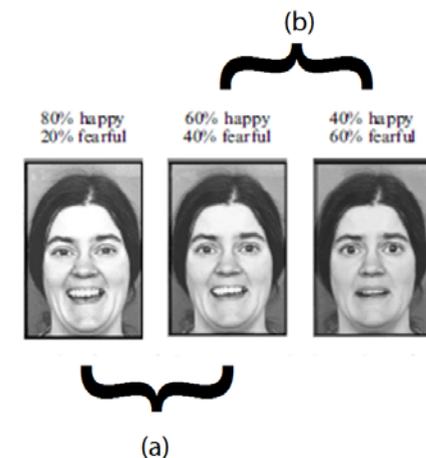


Image from (Kotsoni, Haan and Johnson 2001: 1118)

#### 4. Evidence against the thesis

##### (1) *Categorical perception is early*

Infants enjoy categorical perception of speech from around 6 months (Eimas, Siqueland, *et al.* 1971; Kuhl 1987: 376–82; and 2004: 834; Jusczyk 1995); also of colour (Bornstein, Kessen and Weiskopf 1976; Franklin, Pilling and Davies 2005)

##### (2) *Judgements are late*

Children systematically fail tests which require them to recognise, distinguish or manipulate phonemes until around four years (Liberman and Liberman 1990: 64; Anthony and Lonigan 2004: 46). And they fail tests which require simple colour judgements until around the time they know some colour words (Kowalski and Zimiles 2006; Sandhofer and Smith 1999)

##### (3) *Judgement comes gradually*

Children acquire abilities to think about phonemes gradually, with certain phonemes harder to distinguish explicitly than others (Treiman, Broderick, *et al.* 1998); colours likewise (Pitchford and Mullen 2005; Kowalski and Zimiles 2006; Sandhofer and Thom 2006).

##### (4) *Boundaries of perceptual categories fail to match extensions of demonstrative concepts*

Adults' (and children's) untrained judgements about phonemes are often inaccurate, being influenced by acoustic features 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). And the

extensions of toddlers' colour words do not match their perceptual categories (Franklin, Clifford, *et al.* 2005).

#### 5. Sensation

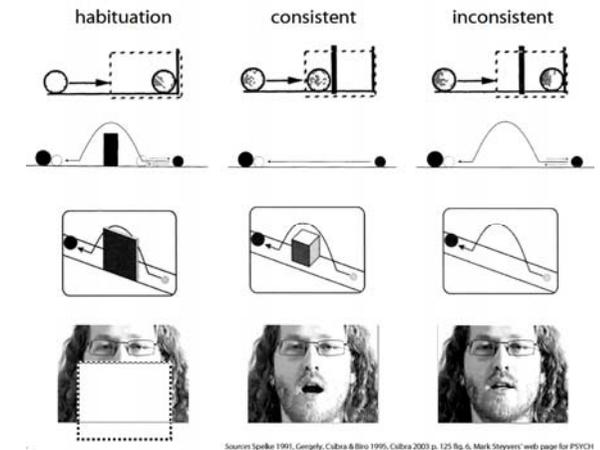
Sensations are monadic properties of experiences occasioned by encounters with things. They have phenomenal characters and typical causes. They lack intentional objects.

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

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

#### 6. Application

Categorical perception provides a model for claims about perception of simple causal interactions and behaviours



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