

*This is an excerpt from a report on the Perceptual Learning and Perceptual Recognition Workshop at the University of York in March of 2012, written by Kevin Connolly, Dylan Bianchi, Craig French, Lana Kuhle, and Andy MacGregor, and available at [http://networksensoryresearch.utoronto.ca/Events\\_%26\\_Discussion.html](http://networksensoryresearch.utoronto.ca/Events_%26_Discussion.html)*

#### **4. How Does Perceptual Learning Alter the Contents of Perception?**

When you learn to discriminate pine trees from non-pine trees, do pine trees start to stand out and engage your attention? In the closing panel, Paul Noordhof and Mohan Matthen argued that there is no reason to say that *pine trees* engage your attention as such. Perhaps it is simply the “pine tree appearance.” Is a natural kind represented (as Siegel argues), or is it just a complex appearance (as Matthen suggests), or even just a shape property (as Noordhof suggests)? More generally, in perceptual learning cases, how are the contents altered?

In Ian McLaren’s model, recognition is mediated by altered salience (see question three). As against this, Tom Stoneham described Berkeley’s argument that perceptual learning yields awareness of something that we cannot strictly be said to see, namely distance or depth. According to Berkeley, one does not *see* any feature about which an image is ambiguous or indeterminate. These limitations restrict what is strictly seen to light [i.e. luminance], colors, and figures. Awareness of distance and depth are added to awareness of these simple things.

While Berkeley’s argument might appear to be an account of the limitations of vision, Stoneham argued that it is properly understood as a positive explanation of how experience, despite the limits imposed by optics and physiology, is nonetheless able to represent distance and depth. As such, it offers an account of the relationship – and indeed the gap – between the content of visual experience (what is represented in experience) and what is made available to the eyes when we see (what is strictly seen).

Pascal Belin described more up-to-date findings from psychology that also bear on our understanding of perceptual learning and perceptual content, in this case concerning perception of speech and other vocal sounds. He described recent evidence that vocal and non-vocal sounds are processed quite differently in the brain and that, within the category of vocalizations, it is possible to discern different processing pathways for various aspects of vocal sounds (e.g. meaning, affect, and speaker's identity). As Åsa Wikforss noted, this might bear on how we view the listener's auditory content – that his or her experience in listening to a speaker represents special kinds of objects and properties, such as voices, emotions, and so on.

Later in the workshop, Randy Flanagan's talk brought out various ways in which perception aids and interacts with motor control and adaptation. A natural way to think of perceptual learning is as a process in which experience alters perceptual content and *thereby* promotes adjustments to behavior. However, as was noted in discussion, there is also the enactivist view (e.g. Noë, 2004) that perceptual content is partly constituted by possibilities for action. If that were so, certain forms of perceptual learning could be understood as influencing content *via* their effects on behavior.

The closing panel discussed the case of professional chicken-sexers, who are trained to segregate newly born chicks according to their gender. It was suggested that these expert subjects may be unable to explain the basis upon which they tell male from female chicks, and the reason for this is that their experiences represent the chicks' being male or being female rather than their having a specific sensible feature that marks the difference. In short, even where training enhances the salience of some features of a stimulus, this does not necessarily result in the subject's representing any hitherto unnoticed sensible features. The increased salience might

not show that the subject is representing the sensible feature, but rather just what that sensible feature indicates.

**References:**

Noë, Alva (2004). *Action in Perception*. Cambridge, Mass.: MIT Press.