
PRIMARY AND SECONDARY QUALITIES

WEEK 4

1. Recap

So far, we've looked at Dispositionalist Theories of Colour (DTC) and Colour Physicalism. These roughly translate as **secondary quality** and **primary quality** views of colour, respectively, assuming the reading of the PQ/SQ distinction adopted in Week One. Both of these views faced a number of potentially serious objections:

Objections against DTC

- ❖ Circularity Objection: Non-reductive DTC tells us that the property *green* is the disposition to look *green*, appealing again to the very notion being defined.
- ❖ Phenomenological Objection: Colours do not *look* like dispositions; they look like intrinsic properties of the surfaces of objects.
- ❖ Causal Objection: Colours presumably are the causes of ordinary colour experiences. But dispositions aren't causes; their categorical bases are.
- ❖ 'Normal Perceivers'/'Standard Conditions' Objection: DTC claims that *green* is the disposition to look green to normal perceivers in standard conditions, but there's no obvious way to specify what counts as a normal perceiver or standard conditions.

Objections against Colour Physicalism

- ❖ Non-Reflectance Colours: Many objects appear coloured due to the effects of the *transmission, emission, diffraction, and refraction* of light.
- ❖ Colour Structure: Surface reflectance properties do not seem to possess the same *structural features* as the colours, such as standing in the right similarity relations, and falling into classes corresponding to binary/unique colours.
- ❖ Illumination-Dependent Colours: Although colours largely appear to remain constant across changes in illumination, they do also appear to vary somewhat. This suggests that colours are not straightforwardly illumination-independent properties, such as surface reflectances.

2. Colour Primitivism

The problems facing primary and secondary quality views of colour have led some to seek out a *third way*: **Colour Primitivism**. In rough outline, Primitivism holds that colours are *sui generis* properties of the surfaces of objects, neither microphysical properties nor dispositions to cause visual experiences. More precisely,

- ❖ Primitivism is a type of **external realism** about the colours, which is an attractive feature as it preserves our naive view that the colours are genuine properties of objects in the environment.
- ❖ Primitivism is a **non-reductive** realism, holding that the nature of colour properties cannot be specified in non-chromatic terms. In particular, the colours are not to be identified with lower level microphysical properties, as in Colour Physicalism, nor are the colours identified with dispositions to cause certain types of psychological response, as in Reductive-DTC.
- ❖ In certain respects Primitivism is more similar to Colour Physicalism than DTC, however, in that the colours are claimed to be entirely **ontologically independent of perceiving subjects**.
- ❖ Most Primitivists would accept that, although not strictly *identical* to microphysical properties, the colours do **supervene** on such properties, in the sense that there could not be a difference in the colour of an object without some change in the underlying microphysical properties of that object. See Campbell (1993: 178).

Primitivism is often associated with the following thesis:

Revelation: The intrinsic nature of a colour, such as canary yellow, is fully revealed by standard visual experiences as of that colour. (Johnston 1992: 138)

One thought behind Revelation is that the colours are paradigmatic *visibilia*, that is, properties presented to us in visual experience. As such, our visual experience ought to provide a *definitive guide* as to what these properties are like. Thus if visual experience reveals that yellow is more similar to orange than blue, for example, then it is part of the *nature* of yellow that it stands in this similarity relation. Note that if Revelation is true, then both DTC and Colour Physicalism are false: it is definitely *not* a fact revealed in our visual experience of yellow, for example, that it is a disposition to cause experiences as

of yellow, or that it is a certain type of surface reflectance property. Colour Primitivism arguably is the *only* view of colour left standing once we accept Revelation. See Byrne & Hilbert (2007: 76-78).

Caution: There are *Eliminativist* forms of Primitivism, which hold that the colour properties presented in visual experience are primitive, *sui generis*, non-relational properties, but that these properties are nowhere instantiated. See Chalmers (2006) for interesting (if lengthy/complicated) discussion. Eliminativist Primitivists would reject the characterisations of Primitivism sketched above.

3. Motivations for Colour Primitivism

Primitivism avoids many of the problems affecting DTC and Colour Physicalism.

- ❖ Unlike DTC, Primitivism faces no problems of circularity, and also does not need to appeal to vague notions such as ‘normal perceivers’ and ‘standard conditions’.
- ❖ Unlike DTC, Primitivism can respect the intuition that the colours appear to be intrinsic features of the surfaces of objects.
- ❖ Unlike Colour Physicalism, Primitivism is not committed to the identification of colours with surface reflectance properties, to the exclusion of all other colour-bearing objects such as gases, lights, fluids, etc.
- ❖ One great advantage of Primitivism over Colour Physicalism is its ability to accommodate colour structure facts.

4. The Causal Objection

All parties agree that colour properties should form part of the *causal explanation* as to why things appear coloured. For Colour Primitivists, this means that primitive, *sui generis*, colour properties had better be causally efficacious. Colour Primitivists accept that the primitive colours are *realised* by (supervene on) physical properties such as surface reflectances, if not identical with them. The problem is that it would be possible to give a complete causal account of colour experiences making reference only to these underlying physical properties: the primitive colours needn't enter the picture. Primitive colours therefore seem to be causally and explanatorily idle, which implies that primitive colours cannot be the colours. See Hardin (1988: 61). This is essentially

rehashing the problem of *causal exclusion* or *causal overdetermination* familiar from discussions of mental supervenience and mental causation. See Kim (1993).

Response: This argument proves too much: it threatens to undermine the causal relevance of *all* non-microphysical properties, including those of biology, chemistry, neurology, engineering, etc.

Response: Primitive colour properties arguably are better suited to causal explanations than underlying microphysical properties. Although it is no doubt true that the microphysical properties of the red rag (together with properties of the incident light) ultimately caused the bull's visual experience and resultant behaviour, it is far more explanatory to say that the *redness of the rag* caused the bull to charge.

5. Animal Colour Vision

Given the assumption of Revelation, the nature of the colours is supposed to be fully revealed in our visual experience. Everything about the nature of the colours should be knowable in principle from reflection on our experiences, and anything that is not knowable on that basis *ipso facto* is not part of the nature of the colours. This seems at odds, however, with the wide range of colour vision abilities across the animal kingdom. Goldfish, pigeons, and macaques clearly possess forms of colour vision, although they seemingly do not visually perceive the same colours that we do. Given that it is not possible for us to acquire knowledge about the nature of animal colours from our visual experience, Revelation implies that animal colours therefore cannot be *real* or *genuine* colours, which seems hopelessly chauvinistic. See Byrne & Hilbert (2007: 94-95).

Readings:

- Broackes, J. 1992 "The autonomy of colour", reprinted in Byrne & Hilbert 1997.
Byrne, A. and D. R. Hilbert, 1997, *Readings on Colour, Vol. 1: The Philosophy of Colour*, Cambridge, MA: MIT Press.
---- 2007 "Colour Primitivism", *Erkenntnis*, Vol. 66, No. 1/2, pp73-105.
Campbell, J. 1993 "A Simple View of Colour", reprinted in Byrne & Hilbert 1997.
Chalmers, D. 2006 "Perception and the Fall from Eden", in T. Gendler and J. Hawthorne (eds.), *Perceptual Experience*, Oxford University Press, Oxford, pp.49-125.
Hardin, C. L. 1988 *Colour for Philosophers*, Indianapolis: Hackett.
Johnston, M., 1992, "How to Speak of the Colours", Reprinted in Byrne and Hilbert 1997.
Kim, J. 1993 *Supervenience and Mind: Selected Philosophical Essays*, Cambridge: Cambridge University Press.