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# PRIMARY AND SECONDARY QUALITIES

## WEEK 1

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### **1. Overview**

*Week 1:* Introduction to the Primary/Secondary Quality Distinction.

*Week 2:* Dispositionalist Views of Colour

*Week 3:* Colour Physicalism

*Week 4:* Colour Primitivism

### **2. Key Questions**

1. *What distinguishes primary qualities (PQs) from secondary qualities (SQs)?*

2. *Which properties, if any, are secondary qualities?*

- ❖ We'll focus on *colours* as a test case, as they are typically offered as paradigmatic examples of SQs.

### **3. Locke on the Primary/Secondary Quality Distinction**

During Locke's time at Oxford, he was mentored by the scientist and theorist Robert Boyle, from whom he acquired a *mechanical, atomistic, corpuscularian* view of physics. This view holds that the fundamental or basic units of the world are indivisible *particles* or *atoms*, which have properties such as solidity, shape, and extension. Atoms are contained within the *void* or *space*, and are either in motion or at rest. The most relevant contrast here was with Cartesian *plenum* theorists, who denied the existence of the void, and held that all matter was infinitely divisible. Within this atomistic worldview, there seemed to be no place for *sensible qualities* such as colours, smells, tastes, sounds, and so on.

*The PQ/SQ distinction was intended to help accommodate these sensible qualities within an atomistic, mechanistic, account of matter.*

*The Problem of the Manifest*

Although Locke's version of the PQ/SQ distinction was motivated by his commitment to 17<sup>th</sup> Century atomistic view of physics, the distinction has its origins in a much older and broader philosophical problem: *The Problem of the Manifest*. Sellars (1962) takes this to be one of the central and defining problems in the history of philosophy:

There seems to be a significant disparity between the view of the world provided by our best physical scientific theories – the *scientific image* – and the view of the world provided by ordinary sense perception, and our thought and talk about objects in the environment – the *manifest image*. This presents a classic *location problem*: where are the colours, smells, tastes, and sounds of ordinary perception situated? How are we to reconcile the manifest image with the scientific image of the world?

This problem has ancient origins. Both Locke's atomistic physics and the problem of the manifest are foreshadowed in Democritus' remark, 'by convention hot, by convention cold, but in reality atoms and void'. As Smith (1990: 224) notes, through the 17<sup>th</sup> Century, 'figures such as Descartes and Boyle, Leibniz and Newton, while holding markedly different physical theories, can be in agreement over the general character of the primary-secondary quality distinction.' The distinction stems from the thought, as Stroud (2002: 7) puts it, that 'the world presented to human beings in their daily lives diverges from, and appears to be a much richer place than, that austere reality described by the atomists.'

*Characterising Primary Qualities:*

According to Smith (1990: 233), Locke held that 'it is necessary and sufficient for a quality to be primary that it characterise everything material: that which attaches to a material entity simply in virtue of its being material.' In Locke's terminology, this is to say that PQs are *Original*. PQs were intended to provide metaphysical unification, being qualities that are present and quantifiable/measurable in all matter, and hence apt to feature in systematic scientific explanation. This served the central aim of enlightened science, which was to generate systematic explanations of physical phenomena, rather than piecemeal explanations linking certain types of cause with certain types of effect. See Smith (1990: 225-226).

*Characterising Secondary Qualities (following Bennett 2001, Ch. 5 on Locke):*

1. SQs are dispositions to cause characteristic types of sensory states. Locke: 'Secondary qualities . . . are nothing but the powers those substances have to produce several ideas in us by our senses' (II.xxiii.9)

- ❖ Bennett (2001) argues that **1** is the most central and important thesis about SQs. This view has gained widespread currency and provides the default interpretation of 'secondary quality' in the contemporary literature.

2. SQs are not in outer objects. Locke: 'Yellowness is not actually in gold' (xxiii.10).

- ❖ This seems to be inconsistent with **1**, which holds that SQs are powers *in* outer objects to cause certain sensory experiences. Compare the disposition to cause a spark, which is definitely a power *in* or *of* the match.

3. SQs are not intrinsic to objects, but are relations between an object and something else. Locke: The yellowness, solubility, etc. of gold 'are nothing else but so many relations to other substances, and are not really in the gold considered barely in itself' (II.xxiii.37).

- ❖ The fact that SQs are *individuated* with respect to causal relations to perceiving subjects does not entail that SQs are themselves relations. Compare *being the brother of* \_\_, which is clearly relational, with *being a footprint*, which is a monadic property that is individuated w.r.t. causal relation to a foot.

4. SQs are properties of minds/experiences rather than objects. Locke: 'Light, heat, whiteness or coldness are no more really in them than sickness or pain is in manna. Take away the sensation of them; let not the eyes see light, or colours, nor the ears hear sounds; let the palate not taste, nor the nose smell; and all colours, tastes, odours, and sounds, as they are such particular ideas, vanish and cease' (viii.17).

- ❖ This seems to involve a slip from SQ view, which takes colours to be properties of *ordinary objects*, to *Galilean subjectivism*, which holds that colours are properties of *experiences* that are mistakenly *projected* onto ordinary objects. SQ view of colour is *realist*: it preserves the truth of the ordinary claim that redness is a

feature of the tomato. In contrast, Galilean subjectivism is *irrealist*: it commits us to global error in mistakenly attributing colour properties to ordinary objects.

- ❖ N.B. There is *significant* debate as to whether Locke himself was a SQ theorist in the sense of **1**. For example, Smith (1990: 236), following Alexander (1976-77), argues that Locke was in fact a Galilean subjectivist about colours. Whatever the truth of the matter, this does not undermine the mainstream understanding of SQs as characterised by **1**.

#### **4. Some Confusions to Avoid**

1. It is not true *by definition* that colours, tastes, smells, and sounds, are SQs. One could maintain the *conceptual* distinction between PQs and SQs while insisting that colours are in fact PQs, as we'll see in Lecture III.

2. PQ/SQ distinction is not the same as the distinction between categorical and dispositional properties. Although all SQs are by definition dispositions, not all dispositions are SQs. For example, *brittleness* is a disposition but not a SQ. (This would class as a *tertiary* quality on Locke's view.)

3. PQ/SQ distinction is not the same as the distinction between 'objective' and 'subjective' properties. For example, the property of being an experience as of red is arguably 'subjective', but it is not a SQ.

4. PQ/SQ distinction is not the same as the distinction between 'physical' and 'non-physical' properties: the existence of SQs does not entail the falsity of physicalism. E.g. one could hold that SQs supervene on microphysical properties.

5. The PQ/SQ distinction is not exhaustive. Besides tertiary properties, such as fire's power to melt wax, there are numerous other properties that are not apt to feature in systematic, fundamental, physical explanation. E.g. the property of being a hammer.

#### **5. Is the Primary/Secondary Quality Distinction Satisfactory?**

*Problem*: SQs are claimed to be dispositions to produce certain types of sensory experience. Any square thing will be disposed to appear square to normal subjects, but *squareness* is supposed to be a paradigmatic PQ. Doesn't this collapse the distinction?

*Bennett's (2001) Response:* Possessing the property of squareness bestows a range of *other* causal powers besides the power to affect perceivers. In contrast, the one (only?) significant causal effect of being red is appearing red to normal perceivers. SQs such as colours are thus distinguished from PQs such as shapes by the *extent to which they are causally irrelevant or inert*.

*Another Response:* We need to distinguish various different theses relating the property of squareness to sensory experiences:

(DISP) If  $x$  is square, then  $x$  is disposed to produce characteristic experiences of type  $S$ .

(IDENTITY) The property of squareness = the disposition to produce characteristic experiences of type  $S$ .

(BICON) Necessarily,  $x$  is square iff  $x$  is disposed to produce characteristic experiences of type  $S$ .

Everyone can (and should) accept DISP: all square things have the disposition to appear square. But this doesn't imply that squareness is a SQ. SQ theorists would have to be committed to IDENTITY or BICON. The SQ view is supposed to tell us something about the *nature* or *essence* of these properties, not simply materially necessary conditions.

**Readings:**

P. Alexander, "The Names of Secondary Qualities," *Proceedings of the Aristotelian Society* 78 (1976-1977).

J. Bennett, *Learning from Six Philosophers* Vol. 2 (Oxford: Clarendon, 2001), Ch. 5.

J. Locke, *Essay Concerning Human Understanding*, Book 2, Ch. 8.

W. Sellars, "Philosophy and the Scientific Image of Man," reprinted in *Science, Perception and Reality*, Routledge & Kegan Paul Ltd; London 369-408.

A. Smith, "Of Primary and Secondary Qualities", *Philosophical Review*, 99 (1990):221-54.

B. Stroud, *The Quest for Reality: Subjectivism and the Metaphysics of Colour* (Oxford: Oxford University Press, 2000).