

Margaret Cavendish on Primary and Secondary Qualities

Resource for Philosophy A-Level students and teachers

Introduction

Margaret Cavendish was born to the Lucas family of St John's Abbey in Colchester in 1623. She published more than a dozen books and was the first woman to write a comprehensive work of philosophy in English.

In her philosophical writings, Cavendish explored an incredible range of topics, including freedom, causation, God, beauty, virtue, the mind-body union, and the limits of knowledge. Here we will consider Cavendish's views on colour.

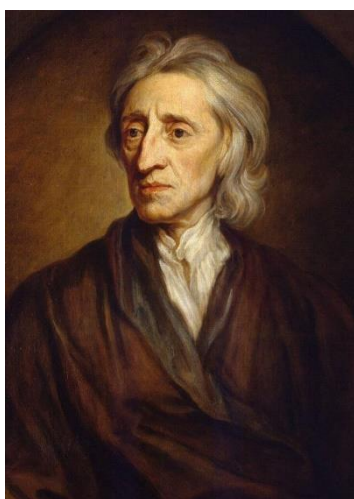
To appreciate those views, it is helpful to contrast them with others emerging in the seventeenth century.

Primary and secondary qualities

In his *Essay Concerning Human Understanding* (1689), John Locke draws a distinction between the "primary qualities" of an object and its "secondary qualities". The primary qualities include solidity, extension, and figure. The secondary qualities include colour, taste, smell, and sound.

According to Locke, primary qualities are "utterly inseparable" from objects. Secondary qualities, in contrast, are not. For example, over time a rose might lose its scent, but it would continue to have a shape. More generally, an object could lack all the secondary qualities and continue to exist as a colourless, tasteless, odourless, etc. thing. But if an object were to lose all size, shape, mass, etc., it would simply cease to exist.

In places, Locke suggests that secondary qualities do not "really exist in bodies". Colours and the like are only sensations in the mind that we mistakenly project onto the objects that cause them.



Portrait of John Locke by Godfrey Kneller. Source: Wikimedia Commons.

However, Locke's official view is that secondary qualities are "powers to produce various sensations in us". For a rose to be red is for it to have the power to cause ideas of redness in us as a result of the way light reflects from its surface to our eyes.

On this view, secondary qualities really do exist in objects. But an object would not possess them unless it were capable of producing sensations in observers. In contrast, on Locke's view, an object would still possess primary qualities such as size or shape even if no one could sense it.

Locke adds that the ideas we have of primary qualities are "resemblances" of their objects, while the ideas we have of secondary qualities are not. According to Locke, the idea I have of the shape of a rose might correspond to the actual shape of the rose, but there is nothing in the rose that resembles the sensation of red that I have when looking at it.

So, while Locke thinks that colours are real, he does not think that they exist in objects in anything like the way we experience them.



Engraving of Margaret Cavendish.
Source: Wikimedia Commons.

Argument from variability

Locke did not invent the primary/secondary quality distinction. It dates back to the ancient Greeks. Other seventeenth-century philosophers such as Thomas Hobbes and René Descartes defended versions of it. In his *Principles of Philosophy* (1644), Descartes writes:

“The properties to which we apply the terms light, colour, smell, taste, sound, heat, and cold [...] are, so far as we can see, various dispositions in those objects [...] to produce all the various sensations in our soul.”

One argument that Locke and others of the time give for distinguishing secondary qualities appeals to variation in our experience of them. For example, a rose might appear a dark red in shadow and a light red in full sun. In this case, the colour we experience changes, but the object itself has not changed. What has changed is only the way it is lit. So, the colour we experience is not really in the object. In contrast, the shape we experience the rose as having does not change as the light changes.



Portrait of René Descartes by Frans Hals. Source: Wikimedia Commons.

Cavendish on separability



Engraving of Margaret Cavendish. Source: Wikimedia Commons.

Cavendish was highly critical of the views of colour—and other sensory qualities like sound—that philosophers were defending in the seventeenth century.

In her *Observations upon Experimental Philosophy* (1666), she writes, “It is impossible to imagine a body without colour”. If we try to conceive of an object with a certain size and shape, Cavendish claims, we have to conceive of it as having some colour or other.

So, for Cavendish, colours are not separable from objects in the way Locke claims. In her words, “There is no colour without body, nor a body without colour”. If primary qualities are those that are inseparable from bodies, then colours are primary qualities.

Here Cavendish is anticipating a point that George Berkeley would make half a century later in his *Principles of Human Knowledge* (1710). According to Berkeley, “it is not in my power to frame an idea of a body extended” without “some colour or other sensible quality”.

Cavendish on powers

Cavendish also rejects the view of colour as powers to cause sensations in observers. She imagines a coloured object “divided into very minute parts”. The parts are so small that they are imperceptible. As a result, they are incapable of causing sensations in us. Nevertheless, Cavendish insists, those parts would still have colours.

According to Cavendish, “it would be but a folly” to deny that something exists or has some quality just because we cannot experience it (*Observations*). There is much more to reality than what is available to the senses.

Cavendish on resemblance

Recall the claim that our ideas of colour do not resemble anything in the objects that cause them. Cavendish denies this.

What makes the idea that the rose causes an idea of *redness* rather than of blueness, or an idea of *colour* rather than of sound? Cavendish's answer is that the senses make "copies" of their objects. So, the idea the rose causes is an idea of redness rather than of something else in virtue of copying the redness of the rose.

Descartes and Locke cannot tell the same story. If one thing is a copy of another, it resembles it. For example, if a forger copies a banknote, the forgery is similar to the original. Since Descartes and Locke deny that the idea of redness resembles something in the rose, or any other object for that matter, they cannot say that the idea is a copy.

Cavendish is challenging the proponent of the distinction between primary and secondary qualities to explain our ideas of colour. If there is nothing in the objects corresponding to those ideas, how are we able to have those ideas? If the idea of redness is not derived from its object, how do we acquire it?



Portrait of Margaret Cavendish by Peter Lely. Source: Wikimedia Commons.

Cavendish on variability

One of the main arguments for the primary/secondary quality distinction appeals to variation in our experience of colour. Cavendish directly responds to that argument by rejecting its starting-point.

We do not, Cavendish insists, experience a change in the colour of a rose as the conditions of illumination change. Rather, the colour seems to us to remain the same when it passes from shade to sunlight. The only thing that changes is our ability to discern that colour.

Cavendish describes the dark shade the rose appears to have in shadow as a "superficial" colour. This does disappear in full sunlight. But what Cavendish calls the "inherent" colour of the rose—the shade that the sunlight reveals—does not come and go in this way. It remains "always the same, let the position and reflexion of light be as it will" (*Observations*).

Summary

For Cavendish, colours are as inseparable from objects as size and shape. An object can have a colour even if it is incapable of causing sensations in observers. Our ideas of colour really do resemble something in objects. And our experience of colour under changing conditions of illumination does not undermine these claims.

One way to present Cavendish's view is that colour is a primary quality. But perhaps it is better to say that she rejects the distinction between primary and secondary qualities altogether.

Cavendish's view of colour sets her apart from her contemporaries, such as Descartes, Hobbes, and Locke. Insofar as many philosophers and scientists still subscribe to a version of the primary/secondary quality distinction, her position remains a challenge to orthodoxy to this day.

Discussion points

- Cavendish claims that there are no colourless objects. But what about transparent objects like glass or water? What might she say about these examples?
- Do you agree that an object could have a colour even if no one is capable of perceiving it? What might Locke say in response to this claim?
- How might a proponent of the primary/secondary quality distinction explain our ideas of colour? If there is nothing in objects resembling those ideas, where do they come from?
- When the way an object is illuminated changes, do we experience its colour changing? Or do we experience it as remaining constant?
- Should we accept the primary/secondary quality distinction? If so, why? If not, why not?

Further resources

A downloadable [Teaching Resource](#) on Margaret Cavendish's life and writings is available as part of Colchester Museums' *Hidden Histories* series.

For introductory overviews of Cavendish's philosophy, see:

- David Cuning, "Margaret Lucas Cavendish", in *Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta and Uri Nodelman. URL: <https://plato.stanford.edu/entries/margaret-cavendish/>
- Gwendolyn Marshall, "Margaret Cavendish (1623-1673)", in *Internet Encyclopedia of Philosophy*, ed. URL: <https://iep.utm.edu/margaret-cavendish/>

For an introduction to the seventeenth-century debate concerning primary and secondary qualities, see:

- Martha Bolton's "Primary and Secondary Qualities in Early Modern Philosophy", in *Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta and Uri Nodelman. URL: <https://plato.stanford.edu/entries/qualities-prim-sec/>

More advanced articles presenting Cavendish's views on colour include:

- Keith Allen's "Cavendish and Boyle on Colour and Experimental Philosophy", in *Experiment, Speculation and Religion in Early Modern Philosophy*, edited by Alberto Vanzo and Peter R. Anstey (Routledge, 2019).
- Colin Chamberlain's "Color in a Material World: Margaret Cavendish against the Early Modern Mechanists", in *Philosophical Review* (2019) Volume 128, Issue 3, pp. 293-336.
 - A version of this article is available to download on the author's [website](#).

Cavendish has a view of beauty that is very similar to her view of colour. For discussion, see:

- Daniel Whiting's "Cavendish's Aesthetic Realism", in *Philosophers' Imprint* (2023) Volume 23, Issue 15, pp. 1-17. URL: <https://journals.publishing.umich.edu/phimp/article/id/1538/>

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