

The Sun as Light-Source

The sun is of course infinitely brighter than any form of artificial light. It has always seemed strange, and almost self-defeating, that pageant-waggon plays insist from time to time on the sudden appearance of a great light, when they were performing in the open air in midsummer. What light could possibly override the light that was there already? If they used the sun, it would have to be concentrated in some form, which implies reflection or possibly refraction.²⁷ Conversely, since they could use the sun, it would be pointless to rely on other sources of light like torches or candles, even in reflectors, unless the scene were within a very enclosed and dark space (as possibly in the *Harrowing of Hell*). One is reminded, not irrelevantly, of the inefficiency of Joseph's candle when confronted with the light of the Infant Christ in St Birgitta's account of the Nativity.²⁸

This argument is based on the premise, grounded purely in general observation of the data of medieval theatre, that if the characters say there is a light, then the stage staff would have tried to produce one. One could argue that this is a reverent if unworkable adherence to the text of the Bible (though in several cases it is an addition from a later retelling), and that the audience were simply expected to use their imaginations. The whole history of medieval staging, however, suggests the opposite. As we have already seen, they loved *devices*, and they appear to have risen to challenges.

The pageants in my case studies all appear to call for major light effects: moreover, not for an instantaneous thunder-flash like the *fervent* in the Digby *Conversion of St Paul*,²⁹ but for a sudden but continuing great light. In each of the following brief case studies the light first is not, and then is. Moreover, once it has appeared, it has to keep going. Would it be possible to produce these effects using the sunlight alone? And what would happen if the sun 'went in'?

27. They understood the technology: see Butterworth *Theatre of Fire* 63–78, though most of his examples are for condensing artificial light from candles, lamps, and torches.

28. For more on this, see below page 177–84.

29. *The Late Medieval Religious Plays of Bodleian MSS Digby 133 and E Museo 160* edited Donald C. Baker, John L. Murphy, and Louis B. Hall *EETS OS* 283 (1982) 7, sd after line 182.

The Technicalities of Light

In order to assess this we need to consider the resources at their disposal:

1. A source of light: the sun.
2. The means to reflect, concentrate, and transmit this – primarily here reflective materials arranged in various configurations.³⁰

First, a few simple things to do with light and reflection. Apologies to those readers who are well-versed in this very basic physics, but I found this structurally useful and often very revealing when I was trying to assess what I saw. It is quite complicated, not because it is difficult in itself, but because there are so many factors involved, any one of which may come into play on a particular occasion. I shall try to relate each to specific points as I go along.

Everything we see is due to the reflection of light from objects. One general definition of *reflection* is ‘the throwing back by a body or surface of light, heat, or sound without absorbing it’.³¹ For the layman this is slightly confusing because there are two other common meanings of *reflection* (besides the mental, ratiocination one), both of which describe its visible results: where it is used as the equivalent of ‘reflected light’ as in ‘the reflection of the sunlight from the copper pan’; and the more everyday, ‘An image seen in a mirror or shiny surface’. Incidentally, it is important to remember that we cannot see light: we can only see its effects. We know that the copper pan is reflecting light because it makes a lighter, copper-coloured patch on the wall. It never occurs to most of us that our image in the mirror is produced by light bouncing off *us* onto a supremely shiny surface and back towards us, or more specifically our eyes, again.

This is, however, important. Everything bounces light back to a greater or lesser extent – apart from ultra-black, which absorbs everything.³² (The result

30. A fascinating treatment of the representation of reflection in art, which tackles some of the following questions but from the point of view of painting, is Jonathan Miller *On Reflection: Catalogue to the National Gallery Exhibition* (London: National Gallery, 1998).
31. This is the main definition from the online *Oxford Living Dictionaries* site: <<https://en.oxforddictionaries.com/definition/reflection>>. Uncharacteristically, the *OED* is not so helpful: ‘The action of an object, surface, etc., in reflecting light, heat, sound, or other form of radiation without absorbing it; the fact or phenomenon of this; an instance of this’, as it uses the verb *reflect* to define the noun *reflection*.
32. Several projects have attempted to produce a completely absorbent black. Apparently the latest and most successful is Vantablack, which is said to be capable of absorbing