

<p><b>Joseph Wright of Derby.</b>  <b><i>An Experiment on a Bird in the Air Pump</i></b>, 1768,  oil on canvas,  183 × 244 cm  (72 x 96")</p>	<p>Initial analysis</p>	<p>There is an overall dramatic effect from the contrast of bright light in a darkened room.</p>
<p>On the left a young man and woman appear to be exchanging views on what is happening. In the foreground a man looks on intently, with his watch in his hand. A young boy leans around him to get a better view.</p>	<p>In the central section a lecturer demonstrates the Air Pump. His left hand holds a glass bell jar that holds a white cockatoo. His right hand is rested near a stopcock that controls the air flow to the jar. (See note 1)</p>  <p>Beneath the Air Pump apparatus and a stand for the bell jar on a circular table.</p> <p>In the foreground a glass receptacle lit from behind by a candle. In the receptacle what appears to be part of a human skull, the icons for passing time and death.</p> <p>Other objects on the table include a candle-snuffer, a tall phial of liquid, a cork and a pair of Magdeburg hemispheres.</p> <p>The painting hangs In the National Gallery, London.</p>	<p>On the right behind the table a man has his arms around a girl in distress. A younger second girl holds the first girl and looks up to the cockatoo in the jar.</p> <p>To the right a man is seated at the table in a state of contemplation or thought considering the spectacle of the demonstration and perhaps its implications.</p> <p>In the background a young boy holds the cords of a bird cage beside a window that reveals a bright Moon in a clouded sky.</p> <p>Note 1.  In Wright's painting of 1762-63, <i>Mr. and Mrs William Chase</i>, Mrs Chase is playing with a white cockatoo. In preparation, Wright factured a series of studies of this bird.</p>

## Subsequent analysis and notes.

A travelling lecturer is shown demonstrating the formation of a vacuum by withdrawing air from a flask containing a cockatoo, though common birds like sparrows would normally have been used. The artist's subject is not scientific invention, but a human drama in a night-time setting. The bird will die if the lecturer continues to deprive it of oxygen. Wright leaves us in doubt as to whether or not the cockatoo will be reprieved. Wright would have witnessed experiments with the Air Pump given by his acquaintance James Ferguson, the astronomer and travelling lecturer.

The air pump was invented by Otto von Guericke at Magdeburg in 1650. The first English air pump was made for Robert Boyle in 1658-9. In the eighteenth century the air pump became 'a common item in cabinets which included instruments of experimental philosophy'<sup>1</sup> The Magdeburg hemispheres on the table were also invented by Guericke. When placed together and the air between them is exhausted by the air pump they become inseparable. They were used in the lectures on pneumatics.

Oxygen was first discovered by Swedish pharmacist Carl Wilhelm Scheele. He had produced oxygen gas by heating mercuric oxide and various nitrates by about 1772. His discovery was followed by the work of Joseph Priestly, who published details of the discovery before Scheele did so. (*Experiments and Observations on Different Kinds of Air*, in six volumes, 1774-77) Priestly played a major role in the Lunar Society in Birmingham. Joseph Wright attended some of the meetings of the Lunar Society and was in correspondence with some of its enthusiasts. Antoine Lavoisier is most noted for his discovery of the role oxygen plays in combustion. He recognised and named oxygen in 1778.

The central lit scene is a device used by Wright in what he called his 'Candle pictures'. In addition very many of his pictures use as focal points depictions of active volcanoes, furnaces, kilns, alchemist's fires, as well as central lighting of the Christian Nativity.

The bright Moon is a recurring motif in Wright's landscape pictures.

The painting could be thought of as a *vanitas*, referring to the passing of life signified by the cockatoo and the skull in the candle-lit receptacle.

Gustave Flaubert who was in England, 1865-6, noted, 'Experience of the pneumatic machine. Night effect. Two lovers in a corner, charming. The old (long hair) who shows the bird under the glass. Little girl crying. Charming of naiveté and depth.'<sup>2</sup>

Some of the above notes were drawn from Judy Egerton (ed.). *Wright of Derby*, The Tate Gallery, 1990 and from David Fraser *Joseph Wright of Derby and the Lunar Society*, in the same volume.

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<sup>1</sup> William Schupbach, 'A select Iconography of Animal Experiment', in Nicholas A. Rupke, *Vivisection in Historical Perspective*, 1989, p.341.

<sup>2</sup> Pierre-Marc de Biasi. *Gustave Flaubert, Carnets du Travail*, Paris, 1988, p.350.