



THE COLOUR GROUP (Great Britain)

Emulous Of Light: Turner's Colour Revisited

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TURNER MEDAL LECTURE 2009

I am touched and honoured to receive this award from The Colour Group, but I must say that I thought of this occasion with some trepidation. A Turner Medal inevitably conjures up the image of one of the greatest Royal Academicians, yet here we are in the Academy's great rival institution, the Royal College of Art. Not to mention that the first presentation of Turner's own medal, established by his will, and dedicated to landscape painting, was marked by uproar when the first winner (1857), a notably obscure artist, was roundly hissed by the assembled company at the Academy for what was seen as a thoroughly mediocre submission¹.

It is, nevertheless, with one of Turner's Academy Lectures that I shall begin, and it will allow me to touch on some aspects of his colour which I rather underplayed in my book *Colour in Turner*, written in the 1960s. Turner was Professor of Perspective at the Academy from 1807 until the late 1830s, but he delivered lectures in rather few of the years between those dates. The perspective material in these lectures has been analysed brilliantly by Maurice Davies², but for what was probably the last series, In 1828, Turner unexpectedly delivered two lectures of outstanding impenetrability, whose poor reception by a dwindling audience doubtless persuaded him that he should not lecture again. These two lectures were on colour and chiaroscuro, and although there had been several lectures on chiaroscuro by earlier Professors of Painting, colour had not, I think, been treated independently hitherto, and it is worth asking why Turner should have launched it as an independent topic at that point.



Figure 1.

J.M.W. Turner (1826),
*Cologne: the Arrival of a
Packet Boat, Evening*

The 1820s was a decade in which the public for art in England began increasingly to notice Turner's remarkable handling of colour – and they did not like it. In 1826, three of his submissions (Figs. 1-3) to the Summer Exhibition – *Cologne* (New York, Frick Collection), *Forum Romanum* (Tate Britain), painted for the architect Sir John Soane but not acquired by him, and *Mortlake Terrace* (Frick Collection) – were attacked by the critics for their use of yellow. One particularly vitriolic review so touched the artist that he sent a cutting of it to Robert Balmanno, who may well have been its author. The review referred to:

‘the same intolerably yellow hue pervading everything; whether boats or buildings, water or watermen, houses or horses, all is yellow, yellow, nothing but yellow, violently contrasted with blue’.³

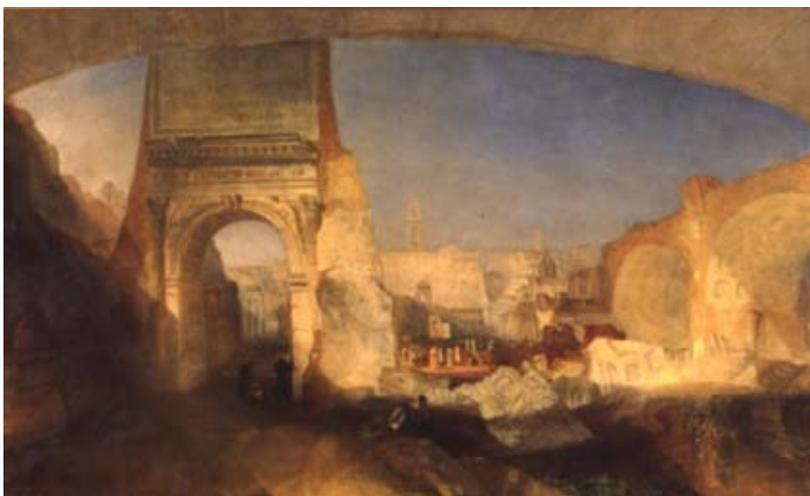


Figure 2. J.M.W. Turner (1826), *Forum Romanum*, for Mr Soane's Museum

Another critic felt that Turner ‘seems to have sworn fidelity to the Yellow Dwarf, if he has not identified himself with that important necromancer. He must be the author of gamboge light.’⁴ Turner was far from phased by such bantering attacks, which were repeated in 1827, and he was happy to allude to his reputation in letters to friends. To James Holworthy, for example, he mentioned, significantly, ‘I must not say yellow, for I have taken it all to my keeping this year, so they say, and so I meant it should be.’⁵

He had long been fascinated by the qualities of yellow pigments; in a notebook of around 1811 he had recorded five pages of recipes for them, and among the pigments left in his studio at his death forty years later, there were more yellows than any other colour.⁶



Figure 3. J.M.W. Turner (1826) *The Seat of William Moffat; Esq., at Mortlake*

Turner was happy in the 1830s to place his yellow signature on a white pennant in *Dutch Fishing Boats* (Chicago Art Institute) (Fig. 4), the colouristic updating of the low-keyed *Bridgewater Sea-Piece* (English Private Collection) (Fig. 5), which had played a particularly important role in launching his career as an oil-painter forty years earlier.⁷

So yellow was a key colour for Turner (it seems a pure coincidence that one of the new synthetic pigments developed in the late eighteenth century was Turner's Patent Yellow, although yellows were among the most important of the new artists' pigments introduced in the nineteenth century, and he was quick to embrace them⁸). It is no surprise that it plays a key role in the colour lecture to which I have referred.



(left) Figure 4. J.M.W. Turner (1838) *Fishing Boats with Hucksters bargaining for Fish*
 (right) Figure 5. J.M.W. Turner (1801) *Dutch Boats in a Gale*

Two colour-diagrams in watercolour (Fig. 6) are the core of this lecture, and they introduce a very remarkable theme. No. 2, as is well-known, adapts a colour-circle by the eighteenth-century theorist Moses Harris, whose work had a particular resonance at the Royal Academy, since the first edition of his *Natural System of Colours* had been dedicated to the founding President, Sir Joshua Reynolds, and the second (1811) to his successor, Benjamin West. Harris's system was also introduced in the late 1820s into a lecture by Turner's friend, the Professor of Painting, Thomas Phillips, who was likely to have shown it to his fellow Professor.



Figure 6. J.M.W. Turner (c.1828) *Colour Diagrams 1 and 2*,

Turner had no interest in the rationale of Harris' circle (Fig. 7), which showed a complementary arrangement, placing red opposite green, blue opposite orange and yellow opposite purple. He simply took over the central motif of the three primary triangles and used it to illustrate light and dark in terms of material pigments. Yellow represented light, blue and red (rather surprisingly) shade, so that the three primaries showed, as he said, 'light and shadow, day and night, or gradations light and dark'. Multiplied together, they made black.⁹

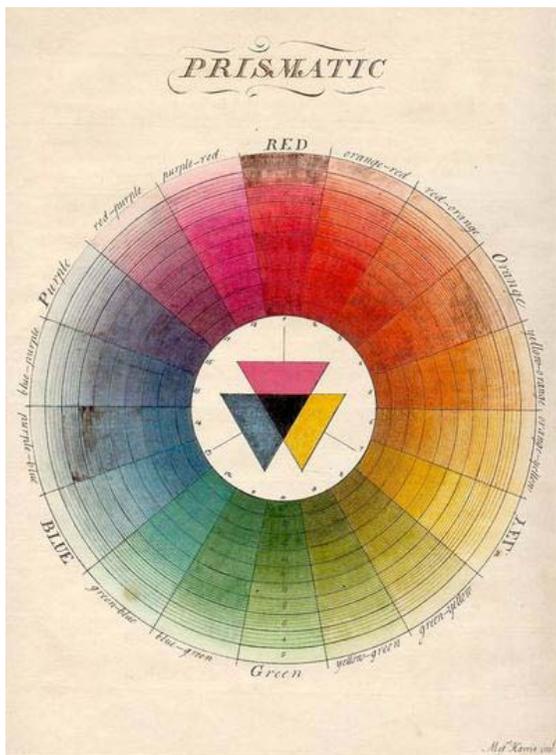


Figure 7.

Moses Harris (c.1776)
*Prismatic, The Natural
System of Colours*

This emphasis on chiaroscuro, the subject of his next lecture, was, of course, of central interest to Turner as an artist working closely with engravers, and even engraving himself. The 1820s were a high point in the reproduction of his highly-coloured watercolours in, for example, the mezzotints of *The Ports of England* and the so-called *Little Liber*, as well as the great line-engraved series, *Picturesque Views in England and Wales* (Fig. 8).

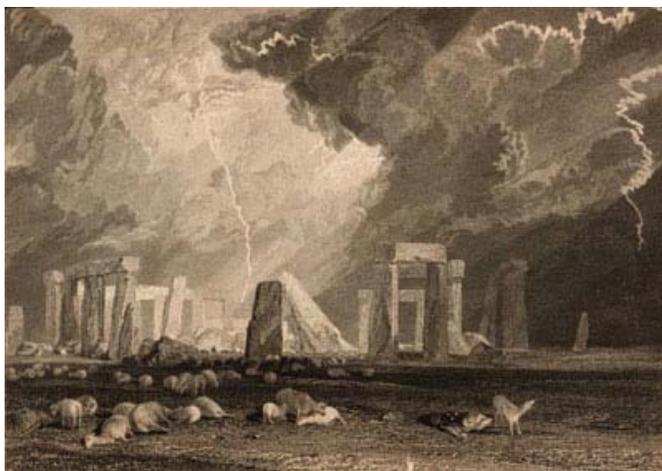


Figure 8.
R. Wallis (1829)
after J.M.W. Turner
Stonehenge

But it is diagram *No. 1* that is of particular interest here, for it attempts to introduce a Newtonian argument which was usually uncongenial, and even incomprehensible, to painters. It shows, said Turner, the colours ‘of light by position only’ (i.e. as in the spectrum, although we note the absence of violet):

‘Throw the multiples of light into combinations, they are still colours incorruptible, yet when commixed, white’.¹⁰

So Turner in this lecture was encapsulating the idea of additive and subtractive colour, the contrasting colours of light and of pigments, an idea which, although it had been mentioned by the colour-print maker J.C. Le Blon a century earlier, was investigated thoroughly by optical scientists only after Turner's death in the middle of the nineteenth century, in the work of James Clerk Maxwell and Hermann von Helmholtz¹¹. Turner was hampered in developing the idea – even had he wanted to – by his reliance on the traditional primary triad of the painters, red, yellow and blue, which in his lecture he characteristically associated with landscape effects: ‘grey morning, the yellow midday and crimson evening’. He was unaware of the early discovery of the light primaries, red, green and blue or violet, around 1800 by Wuench in Germany and Young in England.¹²

If in theory Turner was not quite able to articulate the relationship of colours in white light according to the most up-to-date optical discoveries, in practice his late

work came close to an even more revolutionary concept. You may recall the punch-line of that aggressive review of 1826, that Turner's palette was 'nothing but yellow violently contrasted with blue', and in the twenties, thirties and forties his compositions, especially in watercolour, might be constructed entirely on the basis of this pair, which, of course, combined hue-contrasts with maximal contrasts of tone (Fig. 9). That white light might be constituted from lights of these two colours alone was firmly established by Maxwell only in the 1860s, although it had already been noticed by the German mathematician J.H. Lambert a century earlier.¹³ When in the early 1840s Turner encountered this pair as the unique and fundamental primaries in Goethe's *Theory of Colours*, he was incredulous. In Para. 745, for example, where Goethe distinguished between the 'higher' transformation of blue and yellow into red, and the 'lower' into green, Turner, in a marginal note, recognized only the lower.¹⁴



Figure 9. J.M.W. Turner (1845) *Norham Castle, Sunrise*

But versions of the yellow-blue idea of additive primaries had a far longer history and, as so often happens, had already been adumbrated by artists before they were investigated by scientists – or even by Goethe.



Figure 10. Nicolas Poussin (c.1638) *The Israelites Gathering Manna in the Desert*

In one of the earliest lectures at the French Academy of Painting, Sculpture and Architecture, in November 1667, the painter Charles Le Brun, analysing Poussin's *The Israelites Gathering Manna in the Desert* (Fig. 10), a painting of the 1630s then in the Royal collection, and now in the Louvre, stated:

‘Since yellow and blue are the colours which most participate in light and air, M. Poussin has dressed the main figures in yellows and blues; and in all the other draperies he always mixes something of these two principal colours, arranging that yellow dominates more than any other, since the light spreading over his picture is very yellow’.¹⁵

Turner was also struck by Poussin's painting when he saw it in the Louvre in 1802, and he made a remarkably sophisticated analysis of its colour:

‘The figures carry severally their satellites of colour into the very centre of the picture, where Moses unites them by being in Blue and Red. This

strikes me to be the soul of the subject as it creates a harmonious confusion – a confusion of parts so arranged as to fall into the sides, and by strong colour meeting in a background to the side figures, which are in Blue and Yellow, so artfully arranged that the art of causing this confusion without distraction is completely hid'.¹⁶

As painters, both Le Brun and Turner stress the pictorial values of these combinations of colour, but Le Brun adds the notion that the blue and the yellow are emblematic of air and light; and in doing so he inserts himself into a debate about the relationship of colours to light which was very active in the contemporary scientific community.

One of the chief actors in this debate was Robert Hooke, the pioneer of microscopy. Hooke, who in his *Micrographia* of 1665 came close to arguing, on the basis of his study of the colours of thin plates (which came, ironically, to bear the name of his rival, Newton), that blue and yellow were the unique primaries. The case is, however, a little more complicated than that, since Hooke also named red as one of the primaries of this pair, but his 'red' was scarlet, the yellowish red, as opposed to the bluish red, crimson (we may recall that painters wishing to match spectral red with pigments have been obliged until very recently to mix scarlet and crimson), and yellow was, for him, a diluted scarlet. In experiments using prisms filled with blue and yellow liquids, he found that:

'all the varieties of colours imaginable are produc'd from several degrees of these two colours, namely Yellow and Blue, or the mixtures of them with light and darkness, that is, white and black.'

Hooke went on, significantly, to refer to the colour-usage of artists:

'...all those almost infinite varieties which Limners and Painters are able to make by compounding those several colours they lay on their Shels or *Palads*, are nothing else, but some *compositum*, made up of some one or more, or all of these four.'¹⁷

Hooke believed that the other hues were created by dilution or deepening, and since some pigments were too opaque for these procedures, he acknowledged that pigments of other colours were in fact essential elements of the palette.¹⁸



Figure 11.

Jan Vermeer (c.1660)
Maid pouring milk

It would indeed be difficult to find a seventeenth-century painter who restricted his palette precisely in this way; but one contemporary of Hooke, whose late work seems to revolve around a yellow-blue axis, was Jan Vermeer. As Van Gogh wrote to Emile Bernard in 1888, not long after Vermeer had been rediscovered by French critics:

‘the palette of this strange painter is blue, citron yellow, pearl grey, black, white ... the combination of citron yellow, pale, pearl grey is as characteristic of him as black, white, grey and pink are of Velasquez.’¹⁹

Vermeer was particularly careful about his blues (Fig. 11), making them from the supremely precious ultramarine (he also mixed his pure reds by glazing the bluish-red madder-lake over the opaque yellowish-red vermilion, a method I mentioned earlier), and even sometimes used it as an ingredient in mixed greens.²⁰ In some paintings he went so far as to incorporate it into all the other colours.²⁰

It is a remarkable coincidence that at almost the same time as Vermeer was deploying his unusual palette, his compatriot, the scientist Christian Huygens, was

defending Hooke's two primaries, which he identified as yellow and blue, against Newton's recently published seven-colour spectrum.²¹

It was, again, that other Dutchman, Van Gogh, writing from the Yellow House at Arles in 1888, who identified Vermeer's palette specifically with landscape, in a way very reminiscent of Le Brun on Poussin:

'Everywhere', he told his brother, 'and all over the vault of heaven is a marvellous blue, and the sun sheds a radiance of pale sulphur, and it is soft and as lovely as the combination of heavenly blues and yellows in a Van der Meer of Delft. I cannot paint it as beautifully as that, but it absorbs me so much that I let myself go, never thinking of a single rule'. (III 42)

More surprisingly, Van Gogh exercised himself in the asylum at St. Rémy soon afterwards by making copies from engravings, not after Vermeer, but after the colouristically very different Rembrandt and Delacroix, yet with this same palette of yellow and blue (Figs. 12 and 13). This is the more remarkable that, as he confessed to his brother Theo, he was 'searching for memories of *their* pictures', although the memory was his 'own interpretation' (III 216).



Figure 12. Eugène Delacroix (1829) *Pietà*



Figure 13. Vincent van Gogh (1889) *Pietà*

Vincent had long felt that Rembrandt was fundamentally pre-occupied with light (II 412, 1885): as he told Bernard, 'Rembrandt works with tonal values in the same way Delacroix works with colours' (III, 504). Delacroix, for his part had, according to Van Gogh:

'a passion for the two colours which are most condemned, and with most reason, Citron yellow and Prussian blue. All the same, I think he did superb things with them – the blues and the citron yellows.' (II 545, 1888)

He recalled to his painter friend Van Rappard that in the dark chapel of the Paris church of St. Denis du St. Sacrament, Delacroix had created light by painting the shadows of Christ's body with pure Prussian blue, and the lights with pure chrome yellow (III 422 1885).

Although he did not mention them, Vincent may have been aware of the work on additive mixtures by Maxwell and Helmholtz, which was well-known in French artistic circles by 1887, when he was working in Impressionist Paris.²² However that may be, it is clear that he preferred to get his theory from the publications of painters: he saw what he called the 'laws of colour' and which he attributed to Delacroix as expounded by the painter-writer Charles Blanc, as 'a ray of light' (II 429 1885). In this he was following a well-established tradition among artists, whose deep concern for colour effects was rarely related to the scientific pre-occupation with causes.²³ Turner was a partial exception to this rule, for we know that he read at least some popular scientific texts, enjoyed a wide acquaintanceship with scientists, and showed some interest in the abstract notion of causality.²⁴ Yet, as we have seen, even he was not *au fait* with contemporary research on the primaries of vision and light, and was not interested in complementarity, the most significant idea in the phenomenology of colour in his time.²⁵

I have tried to show that it is in his practice rather than in his theory that we find Turner responding to elements of chromatics, namely additive and subtractive mixtures and the primacy of yellow and blue, which had once been, and were again to be, of particular concern to optical scientists.



NOTES

1. See *Turner 1775-1851*, London, Royal Academy, 1974, Nos. B.59-60.
2. M. Davies, *Turner as Professor: the Artist and Linear Perspective*, 1992.
3. J. Gage, *Collected Correspondence of J.M.W. Turner*, 1980, Letter 115.
4. J. Gage, *Colour in Turner: Poetry and Truth*, 1969, p.20.
5. J. Gage 1980, Letter 116.
6. J. Gage 1969, p.19.
7. M. Butlin & E. Joll, *The Paintings of J.M.W. Turner*, 2nd ed. 1984, Nos.14, 372.
8. J. Townsend, *Turner's Painting Techniques*, 1993, pp.39-41.
9. J. Gage 1969, pp.210-211.
10. *ibid.* p.210.
11. R.A. Crone, *A History of Colour*, 1999, pp.142-3, 147-156. For Le Blon, see the facsimile of *Coloritto; or the Harmony of Colouring in Painting...* (1725), in O.M. Lilien, *Jacob Christophe Le Blon, 1667-1741: Inventor of Three- and Four-Colour Printing*, 1985, p.188
12. R.A. Crone 1999, pp.106-8, 134-5.
13. *ibid.* p.139. It is remarkable that the idea of yellow and blue as the fundamental colours took an evolutionary turn in the second half of the century: see R. Soelch, *Die Evolution der Farben: Goethes Farbenlehre in neuem Sicht*, 1998, pp.27-8, 35-6.
14. J. Gage, 'Turner's annotated books: Goethe's *Theory of Colours*', *Turner Studies*, 4/2, 1984, pp.47,49.
15. A. Merot (ed.), *Les Conférences de l'Academie Royale de Peinture et de Sculpture au XVIIe Siecle*, 1996, p.110. This lecture was translated in A. Felibien, *Seven Conferences on Painting*, 1740, a text well known to Turner (Gage 1969,p.109).
16. A.J. Finberg, *Complete Inventory of the Drawings in the Turner Bequest*, 1909, I, p.184.
17. R. Hooke, *Micrographia*, 1665 (repr.1961),p.74. cf. A.I. Sabra, *Theories of Light from Descartes to Newton*, 1967, pp.325-7.
18. R. Hooke (1961) pp.77-8.
19. *The Complete Letters of Vincent van Gogh*, 1978, III, p.524; cf. to Theo, III, pp.10, 42. All subsequent references are to this edition.
20. H. Kuehn, 'A study of the pigments and the grounds used by Jan Vermeer', Washington, National Gallery, *Reports and Studies in the History of Art*, 2,

- 1968, pp.157-68; H. von Sonnenburg, 'Technical Comments', *Metropolitan Museum of Art Bulletin*, XXXI/4, 1973, n.p.
21. H.W. Turnbull (ed.), *The Correspondence of Isaac Newton*, I, 1959, pp.255-6; Sabra 1967, p.271.
 22. J. Gage, *Colour and Culture: Practice and Meaning from Antiquity to Abstraction*, 1993, pp.174-5.
 23. B. Teyssedre, *Roger de Piles et les Debats sur le Coloris au Siecle de Louis XIV*, (1957), 1965, pp.308 n.1, 491 n.2.
 24. J. Hamilton, *Turner and the Scientists*, 1998, especially Ch.1. For Turner and causality, J. Gage, *J.M.W. Turner: A Wonderful Range of Mind*, 1987, p.216.
 25. G. Roque, *Art et Science de la Couleur: Chevreul et les Peintres de Delacroix a l'Abstraction*, 1997, pp.46-72.

FIGURES

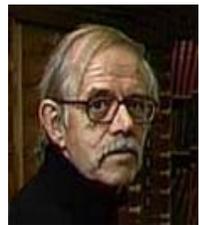
1. J.M.W. Turner, *Cologne: the Arrival of a Packet Boat, Evening*, 1826, New York, Frick Collection (Butlin & Joll 232).
2. J.M.W. Turner, *Forum Romanum, for Mr Soane's Museum*, 1826, London, Tate Britain 504 (BJ 233).
3. J.M.W. Turner, *The Seat of William Moffat; Esq., at Mortlake. Early Summer's Morning*, 1826, New York, Frick Collection (BJ 235).
4. J.M.W. Turner, *Fishing Boats with Hucksters bargaining for Fish*, 1838, Art Institute of Chicago (BJ 372).
5. J.M.W. Turner, *Dutch Boats in a Gale: Fisherman endeavouring to put their Fish on Board*, 1801 (Private Collection England) (BJ 14).
6. J.M.W. Turner, *Colour Diagrams I/2*, c.1828, Tate Britain (TB.CXCV, 178/9).
7. Moses Harris, *Prismatic, The Natural System of Colours*, c.1776.
8. R. Wallis after J.M.W. Turner, *Stonehenge, Wiltshire*, 1829, from *Picturesque Views in England and Wales* (R 325).
9. J.M.W. Turner, *Norham Castle, Sunrise*, c.1845, Tate Britain (BJ 512).
10. Nicolas Poussin, *The Israelites Gathering Manna in the Wilderness*, 1638-9 Paris, Louvre.
11. Jan Vermeer, *Maid-servant Pouring Milk*, c.1660, Amsterdam, Rijksmuseum.
12. Vincent van Gogh, *Pietà* (after Delacroix), 1889, Amsterdam, Rijksmuseum (F 630).
13. Eugène Delacroix, *Pietà*, 1829, Oslo, National Museum.

This lecture was given by Dr Gage at the Royal College of Art, London, on Thursday 5th February 2009, on the occasion of receiving the silver Turner Medal from The Colour Group (Great Britain). The manuscript was edited and booklet formatted by Prof Lindsay MacDonald, Chairman of The Colour Group, 2007-09.



The Turner Medal honours Joseph Mallord William Turner, the celebrated English landscape painter and colourist, and is cast from sterling silver. It is awarded every second year by The Colour Group (Great Britain) to a distinguished researcher in the field of art and design, in recognition of lifetime achievement and significant contributions to the understanding of colour.

Dr John Gage is the former head of History of Art at Cambridge University and is a worldwide authority on the use of colour in art. Dr Gage has published over 70 learned articles on colour in art history, but it is for his books that he is best known. Four of his first six books dealt specifically with Turner: *Colour in Turner: Poetry & Truth*, 1969; *Turner: Rain, Steam and Speed*, 1972; *Collected Correspondence of J.M.W. Turner*, 1980; and *J.M.W. Turner: a Wonderful Range of Mind*, 1987. His three most recent books have all been published by Thames & Hudson: *Colour & Culture: Practice and Meaning from Antiquity to Abstraction*, 1993; *Colour & Meaning: Art, Science and Symbolism*, 1999, and *Colour in Art*, 2006.



Following the publication of *Colour and Culture*, A.S. Byatt described John Gage as “one of the best writers on art now alive”. Ernst Gombrich saluted his “exhilarating quest”. The London Review of Books described it as “A book of extraordinary discussions on a wide range of issues ... No one interested in painting can afford not to study it.” Nicholas Boyle, writing in The Times, concluded: “Rarely has the academic mind made itself more approachable ... And rare indeed are the occasions when the ordinary reader can, as here, consult one of the first charts of intellectual *terra incognita*.”