



Eric Jorink and Bart Ramakers (eds.), **Art and Science in the Early Modern Netherlands.** *Kunst en wetenschap in de vroegmoderne Nederlanden* (Nederlands Kunsthistorisch Jaarboek 61; Zwolle: WBooks, 2011, 367 pp., ISBN 978 90 400 7808 8).

‘Art and science’ has been a growing field of research interest in recent years, but it is often hard, as Ludmilla Jordanova has pointed out time and again, to get the ‘and’ – to join scholarship in the history of art and the history of science – right (e.g. ‘And?’, *British Journal for the History of Science* 35 (2002) 341-345). This volume of collected essays does, and it is so effectively because instead of treating ‘art’ and ‘science’ as separate spheres with an intersection and focusing simply on that intersection, it starts with a premise that the categories of ‘art’ and ‘science’ should not be separated and that in fact both activities inhabit the same, much wider territory of culture. Such a strategy is entirely justified, given that since classical times, art and nature were polar but mutually dependent terms in pre-modern Europe.

An obvious intersection for ‘art and science’ in the early modern period is perspective – we have all been taught that the (re)discovery of perspective was of signal importance in the Renaissance. But such a view is challenged by the very first essay by Sven Dupré, ‘The Historiography of Perspective and *Reflexy-Const* (painterly recording of light and its reflections)’. He points out how the prevailing historiography of Renaissance optics as focused on perspective is based on a selective reading by both historians of science and historians of art-theoretical works of the period. Dupré argues effectively that when read as a whole, Simon Stevin’s *Vande Verschaevwing* (*scenographia*) should be understood as a Vitruvian optical project grounded in contemporary design practices of military engineers. This tallies well with Stevin’s position as mathematics tutor and then quartermaster to Prince Maurits, to whom the book was dedicated. Furthermore, Karel van Mander’s *Schilder-boeck* discussed *reflexy const* as established by the Van Eycks and as predicated on the ‘alchemical transformation of materials through life and fire’ (55). Further ammunition against the prevailing narrative of history of optics as a history of perspective is supplied by Fokko Jan Dijksterhuis’s piece examining the colour-mixing project by the polymath Lambert ten Kate and the painter Hendrik van Limborch. Theirs was an artistic and scientific collaboration in trying to rectify the unreliability and inexperience of the human eye as judge of colours – they sought to establish the nature

and properties of colours as determined by visual experience rather than by a quantitative device or rational rule.

Apart from the likes of Leonardo da Vinci or Galileo Galilei, those who studied nature were not usually graphically proficient and vice versa. As Daston and Galison have pointed out (*Objectivity* [2007], 84-98), the common method of working for a naturalist in the pre-modern period was 'four-eyed' seeing where the naturalist had to supervise and coax a painter to draw objects of nature by curbing artistic licence and flourish. Against such a practice, Jan Swammerdam's signature, 'Auctor delineavit (the author drew [this])' on a drawing is a proud declaration of his graphic skills. In 'Beyond the Lines of Apelles', Eric Jorink explains how Swammerdam interpreted and presented insect anatomy using the microscope in terms borrowed from art – such an attitude was underpinned by Swammerdam's belief that nature was God's work of art, and a faithful description of nature was a religious duty. The converse to the graphically talented naturalist is presented by Marrigje Rikken and Paul J. Smith in the figure of Jan Brueghel, an artist, they argue, who became conversant with the natural history of birds. By comparing earlier versions of *Allegory of Air* (1621), they show how Brueghel's knowledge of natural history of birds developed over time, even to the point of correcting Clusius' descriptions. Brueghel seems to have worked on this composition more carefully than on the allegories of the other elements: the birds, the composition of contrasting elements, the inclusion of a telescope, all point to Brueghel's sensitivity to the interests of his audience and patron, Federico Borromeo.

Another example of an artist's mastery of nature – particularly its materiality, is discussed by Karin Leonhard in the case of Otto Marseus van Schrieck's paintings in the genre of *sottobosco*, which had been developed at the court of the Medicis which held a keen interest in poison and its universal antidote, the theriac. Marseus's composition drew on the contrasting effects of natural substances as well as their religious symbolisms. Most striking were his experiments with natural material as pigment: he painted a rock with rock; earth with earth, butterflies by gluing on butterfly wings. This suggests the blurring of the figurative abilities of art and nature. Yet most artists in the period did not have such deep insights into nature as Brueghel or Marseus did. So what should an artist do when he needs to depict an exotic animal he has never seen before? Adriaen Collaert's answer in the case of a camel was to adopt the head of a horse. There were many examples of such metonymic composition – creating an unknown from a composite of known elements – in the period, as Daniel Margócsy points out, when representing animals in the period. But what made such compositions different from a fantastic piece of grotesque and instead a convincing and reasonable approximation to something in nature? Margócsy argues that the prevailing views of nature – variability guided by some rules; correspondences of forms across realms of nature; the possibility of cross-breeding of animals and plants; the power of imagination – made metonymy a reasonable, educated guess. This is why prints such as Collaert's could circulate among naturalists as a source of knowledge.

The case studies in this volume are strong, convincing pieces that pay close attention to various contexts – collecting, networks of contacts and correspondents, philosophical debates and religious outlooks. The focus on the Netherlands is also important and rewarding. Not only was the Netherlands an important centre for artistic production, including prints, in the period, it was also an active centre for printing books. Athanasius Kircher chose to have his works printed there and the reception of Kircher's interest in hieroglyphics can be detected in several Dutch authors (Gerardus Vossius, Otto Heurinus), as Thijs Weststeijn discusses. Coupled with the discovery that Chinese characters were written with a paintbrush inspired a quest for recovering Adam's language that could be understood by all – a universal language that was also pictorial (Isaac Vossius, Hermannus Hugo). Such a language also functioned as an organising principle for collecting and other encyclopaedic projects (Samuel Quiccheberg, Johannes de Laet).

Many of René Descartes' works were also published in the Netherlands, and several papers may also be seen as a contribution to the reception of Cartesian views in a wider context. Gijsbert M. van de Roemer for example argues that Willem Goeree, a polymathic scholar who wrote *Inleyding tot de practijck der al-gemeene schilder-konst* showed interest in regulation and eliminating chance by reducing the procedure of painting to clear basic principles, following Cartesian precepts. Descartes' ideas, however, could be received in quite different ways, as Rienk Vermij shows in the various ways in which the metaphor of light was visualized in frontispieces around 1700. Joke Spaans describes how the artist Romeyn de Hooghe espoused a Spinozist critique of established religion, as visually demonstrated in his posthumously published emblem book, *Hieroglyphica*.

In sum, this volume presents exemplary and innovative research in 'art and science' and demonstrates the fertility of this region as the centre of scientific, artistic and printing activities in the period. It would be interesting to develop further comparative angles, for example in Britain, where so many of the artists had come from the Netherlands. The editors have done a fine job in not only setting exemplary scholarly standards but also in pointing to potentially fruitful research ahead.

Sachiko Kusukawa, Trinity College, Cambridge