

Colour and Light in Ancient and Medieval Art



Edited by
Chloë N. Duckworth and Anne E. Sassin

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ROUTLEDGE

Colour and Light in Ancient and Medieval Art

The myriad ways in which colour and light have been adapted and applied in the art, architecture and material culture of past societies is the focus of this interdisciplinary volume. The iconographic, economic and socio-cultural implications of light and colour are considered by established and emerging scholars including art historians, archaeologists and conservators, who address the variety of human experience of these sensory phenomena. In today's world it is the norm for humans to be surrounded by strong, artificial colours, and even to see colour as perhaps an inessential or surface property of the objects around us. Similarly, electric lighting has provided the power and ability to illuminate and manipulate environments in increasingly unprecedented ways. In the context of such a saturated experience, it becomes difficult to identify what is universal, and what is culturally specific about the human experience of light and colour. Failing to do so, however, hinders the capacity to approach how they were experienced by people of centuries past. By means of case studies spanning a broad historical and geographical context and covering such diverse themes as architecture, prehistoric art, the invention of metallurgy and medieval manuscript illumination, the contributors to this volume provide an up-to-date discussion of these themes from a uniquely interdisciplinary perspective. The papers range in scope from the meaning of colour for the traditional societies of Rapa Nui (Easter Island) to the technical art of the glazed tiles of the Shah mosque in Isfahan. Their aim is to explore a multifarious range of evidence, and to evaluate and illuminate this truly enigmatic topic in the history of art and visual culture.

Chloë N. Duckworth is Lecturer in Archaeological Materials Science, Newcastle University, UK.

Anne E. Sassin is Honourary Research Fellow, Canterbury Christ Church University, UK.



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This volume is dedicated to Jean (Ga), who taught me (Chloë) the importance of art, music and history, and to Fay and Fred (Mom and Dad), who instilled in me (Anne) a love of both art and history from early on.



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Preface

In today's world, we are used to being surrounded by strong, artificial colours, and even to seeing colour as an inessential or surface property of the objects around us. Similarly, electric lighting has given us unprecedented power to illuminate and manipulate our environments. With such a saturated experience, we find it difficult to ask what is universal, and what is culturally specific about the human experience of colour and light. Yet without addressing these questions, how can we ever hope to approach the experience of people in the past?

The contributions to this volume, which have been written by art historians, archaeologists, artists and conservators, seek to address the variety of human experience of colour and light, in case studies spanning a broad historical and geographical context and covering such diverse themes as wall art, the invention of metallurgy, and medieval manuscript illumination. In addition, students and specialists alike will find a useful resource in the introductory essay on the study of colour and light, which provides a brief but up-to-date discussion of these themes from a uniquely interdisciplinary perspective.

Contributors

Chloë N. Duckworth is a Lecturer in Archaeological Materials Science at Newcastle University. Prior to taking up this post, she held a British Academy postdoctoral fellowship at the University of Leicester, investigating glass recycling in the first millennium AD Mediterranean. Her research focuses on materiality, archaeological approaches to technology, and the history and archaeology of glass and glazes. She directs archaeological fieldwork at the medieval sites of the Alhambra, and Madinat al-Zahra, in Spain.

Anne E. Sassin has a PhD in Archaeology from the University of Nottingham, is an Honorary Research Fellow in medieval archaeology at Canterbury Christ Church University and is a part-time tutor at Oxford's Department of Continuing Education. She is actively involved in fieldwork, particularly in Surrey, where she directs community-led projects, and has excavated in the United States, UK, Denmark and Greece. Her research focuses on medieval monumentality, landscape studies and archaeological outreach.

David Govantes-Edwards is a professional archaeologist and translator, and an independent researcher. He has published on a range of subjects including the ancient economy, production in medieval Spain and archaeological theory, and has been engaged in archaeological fieldwork in Spain, Crete and Rapa Nui. Most recently, he has been engaged with survey and excavation in search of pyrotechnological production remains at the UNESCO World Heritage site of the Alhambra, Spain.

Miljana Radivojević before acquiring MSc and PhD degrees in the field of Archaeometallurgy at the UCL Institute of Archaeology, Miljana Radivojević finished her undergraduate archaeology studies in Belgrade. Her PhD thesis on the origins of metallurgy in Europe was developed into an international research project, 'The Rise of Metallurgy in Eurasia', funded by the UK's AHRC. She is currently employed as a Research Fellow at the McDonald Institute of Archaeological Research, University of Cambridge. Miljana maintains several collaborative projects spanning metal production from c. 5000 to c. 1000 BC across Eurasia.

Stephanie Aulsebrook's main topic of interest is the Late Bronze Age prehistoric societies of the Greek mainland, sometimes referred to as the Mycenaeans. She recently completed a PhD at the University of Cambridge focussed on the usage of metal vessels in this region, which were at the time costly objects that were restricted in circulation. Stephanie is interested in exploring the nuances of how such artefacts were integrated into the political economy and the exact roles that they played,

through the holistic examination of emic sources of valuation. She is currently working on the publication of a contemporary religious building at Mycenae.

Katy Soar has a PhD in Minoan Archaeology, and is currently a visiting lecturer in Greek Archaeology at Royal Holloway, and an Honorary Research Associate at the Open University. She has published a range of papers on the role of performance in Minoan Crete, and has excavated in both the UK and Greece. Her other research interests include the history of archaeology, and the creation of archaeological knowledge and discourse in the popular imagination. Her current projects include archival research on Edward Tylor and his intellectual relationship with archaeology, and on the use of archaeology as a trope in late Victorian fiction.

James Beresford is an archaeologist and writer. Formerly Assistant Professor in the History Department at Lahore University of Management Sciences, he has also taught in Japan and the United Arab Emirates as well as the United Kingdom. He was previously editor of *Minerva: The International Review of Ancient Art and Archaeology*.

Vladimir Ivanovici is currently a postdoctoral researcher at the Bibliotheca Hertziana in Rome, a lecturer at the Accademia di architettura Mendrisio and a scientific collaborator of the Medieval Institute of the University of Fribourg. He has two doctorates, in ancient history and archaeology; and in art history. His research intersects the study of cultic architecture, religious art and anthropology of various Late Antique religions with the cultural conditioning of perception, as it seeks to identify the various manners in which the divine manifested.

Andreas Petzold was educated at Manchester University and the Courtauld Institute of Art, where he obtained a PhD on the use of colour in English Romanesque manuscripts. He was a curator at the Victoria and Albert Museum from 1987 to 1999, specialising in medieval and Renaissance art. He currently teaches History of Art at MPW London, and is an Associate Lecturer at the Open University. He is the author of *Romanesque Art* in the Everyman Art Series. He has published several articles and papers on the subject of colour.

Jorge Rodrigues is a specialist in Romanesque art and architecture. He has a PhD in Medieval Art History and is a member of the Art History Institute (IHA), and Auxiliary Professor at the Department of History of Art at the Faculty of Human and Social Sciences, New University of Lisbon. He is Curator of the Islamic, Armenian and Oriental Art collections at the Calouste Gulbenkian Museum. Jorge has been an invited lecturer at several universities and institutes. He has a number of publications, including *Modo Românico* in *História da Arte Portuguesa* published by Círculo de Leitores (1995) and *Monastery of Alcobaça* (2007), Scala Books. Dr Rodrigues is also the National Coordinator of the HERITY project (UNESCO), and partakes in certification teams in Florence (Italy), Vilnius (Lithuania) and Medio Tejo (Portugal).

Éowyn Kerr-DiCarlo is currently working towards a PhD at the Courtauld Institute of Art. Her research is focused on the techniques of late 14th century painters and illuminators, particularly those artists associated with the school of Lorenzo Monaco. She completed an MA in the History of Art from the Courtauld Institute

of Art with a thesis on the subject of images of the Stigmata, and holds an MA in Art Conservation from the State University of New York at Buffalo. Éowyn has over ten years of experience working internationally as a professional paintings conservator in public and private collections and was awarded a Kress Fellowship to conserve Florentine *cassoni* for the Medieval and Renaissance Galleries at the Victoria and Albert Museum. She continues to teach as adjunct faculty in the Art History Department at the American University of Rome, lecturing on the iconography of medieval saints, and conservation practices and ethics.

Francesca Galli following her Bachelor's degree in Modern Literature and Philology from Università Cattolica del Sacro Cuore, Milano, Francesca Galli graduated in Italian Language, Literature and Civilization from Università della Svizzera Italiana (USI), Lugano, where she was also awarded the MLLCI scholarship and the *Alma Bacciarini* prize. In May 2016 she obtained her PhD from USI, under the supervision of Prof. Corrado Bologna, with a thesis entitled, 'Critical and commented edition of *De luce* by Bartolomeo from Bologna OFM'. She is interested in medieval optics and *Lichtmetaphysik*; the preaching of Mendicant Orders and didactic literature in the 13th–14th centuries; interactions between science and literature; relationships between words and images (allegorization of matter, the use of pictures and diagrams by preachers as mnemonic tools); and the cultural, religious and philosophical context of Dante's works.

Anthony McGrath is an Independent Scholar. After a first degree in mathematics and qualifying as a Chartered Account, he pursued a career in banking and international finance. Realising the error of his ways, he returned to academia and took a degree in Humanities with History of Art followed by an MA in History of Art. The MA dissertation, which is titled 'Challenging Hogarth: A revisionist account of the authorship of the Court Room at the Foundling Hospital London', won the Association of Art Historians Dissertation Prize. The PhD was undertaken at Sussex University under the supervision of Professor Michelle O'Malley and was completed in 2012. The thesis title is 'Books in art: The meaning and significance of images of books in Italian Religious painting 1250–1400'. Current research interests include the history of medieval books, trecento altarpieces and the role of light in medieval theology, philosophy and art.

Sharon Lacey is a painter and writer based in Boston, MA. She completed an MA in Book History at the Institute of English Studies, University of London, where she studied painting techniques used in medieval manuscripts. Her dissertation, 'Tradition and innovation in the thirteenth-century revival of tinted drawing techniques: A study of the Tanner Apocalypse', focused on the materials and methods of production used in the Tanner Apocalypse (Oxford, Bodleian, MS Tanner 184). She also holds an MFA in Painting from the New York Academy of Art. Her art training has primarily focused on traditional techniques and materials, with particular emphasis on the human figure. Other research interests include early craft treatises, paint technology and the history of artists' studio practice and training. From 2003–2010 she taught painting and drawing in the Studio Art department at the College of Charleston in Charleston, SC. Currently, she is the Arts Research Writer for the MIT Center for Art, Science and Technology.

Maryam Mahvash is a Research Associate at the Centre for the Comparative Study of Muslim Societies and Cultures (CCSMSC) at Simon Fraser University. Her interests span the broader context of Persian studies as well as the history and the theory of architecture, while her specialty is the study of the qualitative dimensions of daylighting in the historical architecture of Persia. She holds a PhD in Architecture from University of Tehran (2006). She has taught at several universities, including the University of Tehran, College of Fine Arts, and has served as scientific adviser for several architectural and urban design conferences, festivals, publications and periodicals. Her book, entitled *The qualitative presence of light in historical Persian architecture: The why, the how, the what*, was published in March 2014 in Iran (CRB, Tehran).

Idries Trevathan is the curator of Islamic art at the King Abdulaziz Center for World Culture in Dhahran Saudi Arabia. He is also in the process of completing his PhD at the Princes School of Traditional Arts in London. This work focuses on the study of colour in Islamic art and culture. He has received numerous awards for his work including the National Association of Decorative and Fine Arts Societies (NADFAS) prize for research, the Hamad bin Khalifa Scholarship, the Zibby Garnett Fellowship and the Knights of the Round Table award. His publications include 'The 19th century Malay Qur'an: A comparative study of materials and techniques', in the *Journal of Islamic Manuscripts*; 'The Ottoman Room at the Islamic Arts Museum Malaysia: A technical study of its methods and materials', in *Conservation and the Eastern Mediterranean*; and 'Bringing it back home: Redefining Islamic art in Saudi Arabia' in *Representing the Nation: Heritage, Museums, National Narratives, and Identity in the Arab Gulf States*.

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On colour and light

Chloë N. Duckworth and Anne E. Sassin

In 1993, John Gage noted that “colour is almost everybody’s business but it has rarely been treated in a unified way” (Gage 1993, 7). In the years since he made this statement, the study of colour and light in art and material culture has gathered pace, and an increasing number of researchers in the fields of archaeology, art history, and conservation would now list these subjects as among their areas of speciality. More recently, in his seminal work *Chromophobia* (2000), David Batchelor convincingly argued for the existence of a persistent Western cultural prejudice against colour. In today’s world, colour (in the form of pigments, light, and various materials) comes cheap. Our general reaction to this has been to denigrate it in favour of muted tones and understated palettes. Anything more than a splash of colour is open to criticism, and lighting follows suit: with the ability to bask in bright light 24 hours a day, we value more than ever the evocative effects of low lighting.

Despite these prejudices, or perhaps because of them, there have been notable efforts to disentangle our own assumptions about colour and light from the evidence presented in the art and material culture of past societies; to ascertain what is universal, and what is culturally specific, in the perception, categorisation, valuation, and treatment of these two related phenomena (see for example Bradley 2009; James 1996; contributions in Jones and MacGregor 2002). The lack of uniformity in the treatment of colour noted by Gage may, or may not, be a bad thing. Yet there remains a feeling, as voiced by participants in the conference session upon which this book is based, that interdisciplinary communication on colour and light could be better; that we archaeologists, scientists, art historians, artists, and conservators could do more to examine how they are studied outside of the narrow geographical and temporal foci of our own research specialisms (cf. Gage 1999; Lamb and Bourriau 1995). There remains a general unawareness, in short, of the *variety* of past human experience of colour and light.

This volume seeks to contribute to this understanding of the variety of human experience, by presenting original research on the manipulation, use, representation, perception, and meaning of colour and light in different contexts. The authors are from a range of backgrounds including art, conservation, archaeology, science, and art history. All are more used, perhaps, to presenting the study of colour and/or light to those in their own field, than to having to explain their research findings in the context of a broad focus on these themes in their own right. But this is the value of interdisciplinarity; for it is through change, the need for flexibility, through considering the problem from a slightly different perspective, that we experience those little flashes of inspiration which lead to new research directions and new ways of understanding the past.

The volume is thus not intended as an exhaustive treatment of colour and light, or a theoretical unification, but as a glimpse into the kaleidoscope of different approaches which may be taken in their study, through the examination of particular case studies of past societies. The scope of the book is at once global and (deliberately) limited. Global, because we are addressing themes of universal significance to human societies, using case studies which span three continents and a large swathe of human history; and limited, because the breadth of the subject is so vast as to render any exhaustive treatment impossible.

Naturally, the understanding of colour and light varies enormously between cultures, but the modern Western focus which dominates in this volume arises from a particular history of thought, which it is worth outlining. For the Classical authors, light was seen to derive from the eye itself, an idea later developed into the concept of *lux* and its product, *lumen*. Colour, on the other hand, was an inherent property of an object: for Aristotle, ‘colours were static – an object’s colour was fixed and there was no place for perceptual relativism’ (Bradley 2009, 63). By the later 1st millennium CE, however, Muslim scientists, foremost among them being Ibn al-Haytham (known in the West as Alhazen), had further advanced the field of optics, and it was postulated that vision was the result of rays of light entering the eye, and not the other way around.

Medieval philosophical writings on both light and colour remained influential for centuries, as shown in this volume by Trevathan (Chapter 14), who considers not only Persian philosophical and religious texts regarding colour categorisation, but also the perspective of the 17th century tile-makers who decorated the Shah Mosque in Isfahan according to these *schema*. In addition to their longevity, medieval writings on optics could also have an immense geographical and cross-cultural reach. Thanks to the great wave of Arabic to Latin translations of the Toledo School and others, by the 13th century Christian European scholars such as Roger Bacon could read and be influenced by both Aristotle and Alhazen. For the Abrahamic religions, the study of light – which was both symbolic and physical manifestation of divinity – was not merely a practical but a philosophical endeavour, as illustrated by Francesca Galli (Chapter 10) in her treatment of Christianity and the 13th century science of optics.

The ever-important science of optics witnessed a change of direction in the 17th and early 18th centuries, in a process which was to culminate in the publication of Isaac Newton’s *Opticks* in 1704. Newton had used glass prisms to demonstrate that white light was not, as previously thought, a uniform, pure substance, but was composed of (and could be split into) rays of different colours. As noted by Finlay (2007, 384), this effected a profound conceptual shift and provoked strong reactions from many quarters, particularly to the idea that the colours we perceive are no more than ‘illusory’ properties of light.

One such reaction was presented by Johann Wolfgang von Goethe in his 1810 *Zur Farbenlehre* (*Theory of Colours*). A deliberate departure from the rigorously scientific approach of Newton, it was themed around the human perception of colour. There subsequently emerged a sharp division of colour theory between the Newtonian and Goethian lines (Finlay 2007, 384). From a 21st century vantage point, it is rather easy to dismiss Goethe: Wittgenstein wrote of his work that it ‘has not proved to be an unsatisfactory theory, rather it isn’t a theory at all’ (Wittgenstein 1951, 11). But while *Theory of Colours* singularly failed to topple Newton’s carefully experimentally derived hypotheses, Goethe’s idea of a cultural bias to the perception of colour (he deliberately

avoided a detailed discussion of light: Goethe 1967, xvii–xviii) was a prescient one, going against the grain of Enlightenment ideology, but finding a later foothold in the more relativist thinking of the 20th century.

This Enlightenment wrangling aside, art and science have communicated better over colour and light than they have over many other phenomena, and the two are perhaps most closely linked in the study of human perception. A better physiological understanding of the mechanisms by which we perceive colour and light was initially sought by Thomas Young in the early 19th century, and was developed to a high level of understanding throughout the 19th and 20th centuries (see Baylor 1995). Today, most well-educated adults are familiar with the concept that certain wavelengths of light are recognisable by photoreceptor cells in the human eye, known as ‘rods’ and ‘cones’, even if the details of the wavelengths in question (400–700nm) and the function of the different cells are less familiar (rods are highly photosensitive, while cones distinguish between colours). As demonstrated by Katy Soar in Chapter 4, a lack of scientific insight into the functioning of the eye does not necessarily preclude the manipulation of the mechanisms by which it functions, and Minoan cultic spaces may have benefitted from a clever use of differently coloured paints combined with specific lighting conditions. In any case, and despite recent developments in the biological and evolutionary understanding of the eye, the relationship between the functioning of the brain and the visual experience of the individual remains largely unknown (Bruce et al. 2003, 77). This is a significant barrier to the study of the past human relationship with colour and light, as we remain uncertain about the extent to which we can apply ‘universals’ to human perception and categorisation.

One difficulty is that linguistic categorisation introduces a certain amount of bias to studies of these phenomena, particularly when an attempt is made to unify the study of colour and light across cultures. Because we can only express our individual colour experience through language, the latter has been central to the psychology and anthropology of colour, but language is itself inherently subjective and open to multiple interpretations. One of the lynchpins of the 20th century debate around language and the reception of visual information was the seminal study by Brent Berlin and Paul Kay, published in 1969 (Berlin and Kay 1969). The result of this study, which incorporated a total of 98 spoken languages and dialects, was a universalistic theory of linguistic colour development in which all languages were seen to go through a total of seven stages, each time increasing the number of ‘basic’ colour terms. Basic terms are defined as those which refer solely to the hue itself (e.g. ‘red’), rather than to an external referent (e.g. ‘cherry’).¹ Stage I consists of the distinction between black and white; Stage II incorporates red; Stage III, green or yellow; and so forth up to Stage VII. The Berlin and Kay sequence implies both a universality of human experience (rooted in physiological oppositions in colour perception), and an evolutionary model of linguistic development. As noted by Jones and MacGregor (2002, 5), both of these factors have made it particularly tempting for adoption in the study of the past. Yet, critics of the model (e.g. Conklin 1973) have pointed out that the methods used for assessing respondents’ colour vocabulary were flawed. In particular, they incorporated the Munsell colour system, which is based upon a set categorisation of colour by hue alone, and which does not prioritise features of colour that may be more valued in non-Western cultures, such as luminosity. In addition, the order in which ‘basic’ colour terms build up beyond Stages I and II has subsequently been found to differ between cultures. Even for Stage I itself it is perhaps rather misleading to refer

to 'black' and 'white'; light and texture are often inextricably bound up with colour definitions, and the polarisation between 'black' and 'white' is more frequently one between 'dark' and 'light' (for a fuller discussion, see Chapman 2002). In this book, the profound importance of texture, and its relationship with colour and light, is discussed by Vladimir Ivanovici (Chapter 6), in a consideration of Late Antique material valuation systems as perceptual filters which were deliberately manipulated in church design. Ivanovici's paper also gets to the heart of the themes presented at the start of this introduction, and he asks whether it is possible for a modern person to 'see' a church through Late Antique eyes.

In spite of its rather hefty portfolio of criticism, Berlin and Kay's model has highlighted some significant cross-cultural elements, such as a persistent focus on the 'extreme' colours black, white, and red, particularly notable in European prehistory (Jones and Bradley 1999; Duckworth 2012, footnote 6). An example of the significance of the colour red in material culture is discussed by David Govantes-Edwards (Chapter 1) in his treatment of colour symbolism in pre-contact Rapa Nui (Easter Island). The Berlin and Kay model also demonstrates a general human tendency towards reductionism in linguistic and symbolic treatments of colour; except in specialist contexts, we tend to stick to a relatively limited range of broad colour categories. Symbolic reductionism may be at play in the case study presented by Miljana Radivojević (Chapter 2), which uses a combination of scientific and archaeological data to argue that a long-lived colour selection preference for black and green minerals was a critical factor in the development of early metallurgy from c.5000 BC in the Balkans.

Nonetheless, it is clear that these linguistic considerations do not tell the whole story. A limitation in the number of basic colour terms in a given language, for example, does not necessarily reflect limitation in the use of pigments or other means of representing and manipulating colour (Baines 1985), and certainly does not imply a limited perceptual range, as Gladstone, drawing from Goethe, famously and erroneously hypothesised for the ancient Greeks.² In terms of understanding past art and material culture, among the most significant lessons to be taken from a scientific perspective on colour and light are that there exist biological universals related to the physical reception and processing of colour, but also culturally determined elements in the way we categorise, process, and interpret this information.

Even if we are able to accept a certain measure of universality in the human perception of colour and light, however, we must account for the effects of time on the artworks themselves. A particular difficulty with ancient art is in establishing how it was positioned and lit; i.e. the circumstances under which it was originally viewed.

The distortion wrought by time on material remains also affects our own classifications and can feed into assumptions about the relative importance of light and shadow, hue and brilliance. Renaissance concepts of the purity of Classical sculpture were founded upon a lack of recognition of the corrosive effects of time on the preservation of the statuary, much of which had originally been brightly painted. Yet this obsession with form – perceived in light and shadow – over colour was not wholly unrepresentative of the Classical world. In fact, we can trace textual and linguistic evidence for the importance of lighting and brilliance as far back as the Bronze Age in Mesopotamia and Egypt (Baines 1985, 283), while physical traces of their significance can be found yet earlier, in surface treatments such as burnishing and the use of varnishes. Hues, by contrast, were in many contexts seen as imitative, even potentially deceptive (e.g. Duigan 2004), and – in a striking parallel with the modern West – the

Romans themselves viewed polychromy, bound up with concepts of oriental extravagance, with a certain measure of ambiguity. The corrupting effects of polychromy and gilding by comparison with line are considered by Sharon Lacey in Chapter 12, in which the medieval practice of tinted drawings is considered in its social and religious context.

Still, it was the lost colours which most intrigued commentators from the 19th century on, as reflected in paintings seeking to bring to life the original appearance of Classical architecture (such as Jean Auguste Dominique Ingres's *Antiochus and Stratonice*, 1834/40; or Lawrence Alma-Tadema's *Phidias and the Frieze of the Parthenon, Athens*, 1868/9). This developing interest in colour over light – or at least, in colour divorced from light – may have had something to do with the increasing availability of synthetic pigments as a consequence of the Industrial Revolution, leading eventually to a modern world in which highly saturated colours were (and are) an everyday experience.

Such a disconnection with past experience may also be behind the 'shock' factor of the recent touring 'Gods in Color' exhibit, based on the work of Vinzenz Brinkmann, in which copies of Classical statues were displayed with their original colours more or less imaginatively restored. As demonstrated by this exhibit, the current state of preservation of art and material culture has a profound effect on our perceptions of past experience.³ The work of the conservator is of prime importance in attempting to reconstruct this, but the long history of conservation practice is fraught with controversy. As noted by Marcia Hall with regard to Renaissance paintings:

In the course of these many centuries we had slowly remade Renaissance painting in the image of academic taste. In early times dirt and smoke were removed by drastic cleaning that frequently stripped the surface. The strident colours that resulted offended the eye of later generations, who were now taught to prefer a Rembrandtesque obscurity. When varnishes were applied to renew the colours, they in turn darkened and yellowed . . . When, after World War II, conservators undertook to restore the paintings to their original state, all hell broke loose.

(Hall 1992, 3)

It is thus apparent that the history of their conservation is an important part of the biographies of the artworks and artefacts we study, and that this can have a significant emotive power. This theme is taken up by James Beresford (Chapter 5) with reference to the ongoing debate over the repatriation of the marble friezes from the Parthenon in Athens, which often focuses upon lighting conditions. Beresford's paper is unabashedly polemic, and while some readers may disagree with his perspective, few could argue the relevance of these themes to the repatriation debate. Stephanie Aulsebrook offers a somewhat different, but equally fascinating, take on conservation in Chapter 3, demonstrating that the effects of surface corrosion could have been deliberately sought after and manipulated in the metal vessels of the Late Bronze Age Aegean, in which the antiquity of an object was an integral part of its value. Unfortunately, most of the evidence for such practices has probably been removed by over-zealous cleaning in the early 20th century, in a misguided attempt to restore the objects to their (assumed) original appearance. Here, we might pause to emphasise the contribution of the natural sciences, with developments in non-destructive analytical techniques such as X-ray fluorescence and X-radiography enabling a clearer understanding of